US MARKET BRIEF 2003

THE US MARKET FOR NATURAL INGREDIENTS USED IN DIETARY SUPPLEMENTS AND COSMETICS, WITH HIGHLIGHTS ON SELECTED ANDEAN PRODUCTS
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   — Ginger rhizome, turmeric rhizome, thyme herb, etc.
   — Hop strobile
   — Medicinal herbs used primarily in perfumery and pharmacy (e.g. psyllium)
   — Seaweeds and other algae
   — Lac, natural gums, resins, gum-resins and oleoresins (e.g., balsams)
   — Vegetable saps and extracts (including extracts of aloe, ginseng, hops and licorice)
   — Ground-nut oil and its fractions
   — Coconut (copra), palm kernel or babassu oil and fractions
   — Other fixed vegetable fats and oils (e.g. jojoba oil, flaxseed oil, castor oil)
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<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ABC</td>
<td>American Botanical Council</td>
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<tr>
<td>AHPA</td>
<td>American Herbal Products Association</td>
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<td>AHP</td>
<td>American Herbal Pharmacopoeia</td>
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<tr>
<td>ATPA</td>
<td>Andean Trade Preference Act</td>
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<tr>
<td>Botanical Preparations:</td>
<td>Plantae medicinales praeparatore (Ph.Eur.) are obtained by subjecting botanical raw materials to treatments such as extraction, distillation, expression, fractionation, purification, concentration or fermentation. These include powdered herbs, tinctures, extracts, essential oils, expressed juices and processed exudates.</td>
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<tr>
<td>Botanical Raw Materials:</td>
<td>Plantae medicinales (Ph.Eur.) are mainly whole, fragmented or cut, plants, parts of plants, algae, fungi, lichen in an unprocessed state, usually in dried form but sometimes fresh. Certain exudates that have not been subjected to a specific treatment are also considered to be botanical raw materials</td>
</tr>
<tr>
<td>CBD</td>
<td>Convention on Biodiversity</td>
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<td>CIF</td>
<td>Cost Insurance and Freight</td>
</tr>
<tr>
<td>CITES</td>
<td>Convention on International Trade in Endangered Flora and Fauna</td>
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<tr>
<td>DSHEA</td>
<td>Dietary Supplement Health and Education Act (DSHEA) of 1994</td>
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<td>EU</td>
<td>European Union</td>
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<tr>
<td>Extract:</td>
<td>Concentrated preparation of liquid (fluidextracts &amp; tinctures), dry (dry extracts) or semi-solid (soft extracts) consistency obtained from botanical raw materials, prepared by maceration, percolation or other methods using solvents (e.g. water, ethanol, methanol) or by supercritical fluid (CO\textsubscript{2}) technology</td>
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<tr>
<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
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<td>FAS/USDA</td>
<td>Foreign Agriculture Service United States Department of Agriculture</td>
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<td>FAS Value:</td>
<td>Value of exports at the US seaport, airport, or border port of exportation, based on the transaction price including inland freight, insurance, and other charges incurred in placing the merchandise alongside the carrier at the US port of export</td>
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<tr>
<td>FDA</td>
<td>United States Food and Drug Administration</td>
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<tr>
<td>FD &amp; C</td>
<td>A prefix designating that a certified color can be used in foods, drugs or cosmetics</td>
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<tr>
<td>FOB</td>
<td>Free on board</td>
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<tr>
<td>FTC</td>
<td>United States Federal Trade Commission</td>
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<tr>
<td>GAP</td>
<td>Good Agricultural Practice</td>
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<tr>
<td>GMP</td>
<td>Good Manufacturing Practice</td>
</tr>
<tr>
<td>Herbal Teas:</td>
<td>Plantae ad ptisanam (Ph.Eur.) consist exclusively of one or more botanical raw materials intended for oral aqueous preparations by means of decoction, infusion or maceration.</td>
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<tr>
<td>HS</td>
<td>Harmonized System Nomenclature</td>
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<td>HTF</td>
<td>Harmonized Tariff Schedule of the United States</td>
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<tr>
<td>ISO</td>
<td>International Standards Organization</td>
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<tr>
<td>ITA</td>
<td>International Trade Administration (US Department of Commerce)</td>
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<tr>
<td>ITC</td>
<td>International Trade Centre UNCTAD/WTO</td>
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<tr>
<td>KG</td>
<td>Kilograms</td>
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<tr>
<td>MFN</td>
<td>Most Favored Nation</td>
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<td>MT</td>
<td>Metric tons</td>
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<tr>
<td>NAFTA</td>
<td>North America Free Trade Agreement</td>
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<tr>
<td>NAICS</td>
<td>North American Industry Classification System</td>
</tr>
<tr>
<td>NASS</td>
<td>National Agricultural Statistics Service</td>
</tr>
<tr>
<td>NESOI</td>
<td>Not elsewhere specified or included</td>
</tr>
<tr>
<td>Ph.Eur.</td>
<td>European Pharmacopoeia</td>
</tr>
<tr>
<td>SITC3:</td>
<td>Standard International Trade Classification Revision 3</td>
</tr>
<tr>
<td>UNSD</td>
<td>United Nations Statistics Division</td>
</tr>
<tr>
<td>UpS</td>
<td>United Plant Savers</td>
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<tr>
<td>US</td>
<td>United States of America</td>
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<tr>
<td>USDA</td>
<td>United States Department of Agriculture</td>
</tr>
<tr>
<td>USITC</td>
<td>United States International Trade Commission</td>
</tr>
<tr>
<td>USNF</td>
<td>United States National Formulary</td>
</tr>
<tr>
<td>USP</td>
<td>United States Pharmacopoeia</td>
</tr>
<tr>
<td>VAT</td>
<td>Value Added Tax</td>
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EXECUTIVE SUMMARY

This Market Brief profiles the US market for natural ingredients that are used in the cosmetic and/or dietary supplement industries, respectively, with highlights on selected Andean natural ingredients that have potential for capturing a larger share of the US market.

In this Market Brief, the US market for natural ingredients that are utilized in both cosmetics and dietary supplements are examined together. The reasons for joining the two sectors into one report is due, primarily, to the fact that many, or most, of the natural ingredient manufacturers and distributors operating in the US have positioned themselves as suppliers to manufacturers of both cosmetic and dietary supplement products, as well as to manufacturers of functional or health-food products. Some natural cosmetic ingredients are marketed as “cosmeceuticals” while some dietary supplement ingredients are marketed as “nutraceuticals.”

The range of natural ingredients covered in this report includes medicinal and aromatic herbs, medicinal herbal extracts and vegetable saps, pectic substances, vegetable mucilages and thickeners, ground-nut oils, fixed oils including castor oil, flaxseed oil, jojoba oil and hemp oil, vegetable waxes and insect waxes such as beeswax, cocoa butter, plant-based colorants such as annato seed, essential oils, resinsoids, and oleoresins such as capsicu oleoresin.

Although the dietary supplement industry experienced dramatic double-digit growth throughout most of the 1990’s, for the past three years the market has been almost flat. And while the sector may appear to be stagnant on the surface, there has been interesting and erratic movement within certain sub-sectors which has important implications for producers to consider for future raw material production planning purposes. Some product types have been rapidly spiraling down the charts while others are growing exponentially, making up the difference. There are clear indications, however, that the overall market is starting to pick up again, and certain sub-sectors appear to be driving the entire natural products category forward, for example certified organic natural products.

In general, demand for certified organic cosmetics, dietary supplements and natural foods is increasing, while the growth of non-organic natural products is slowing down. 100% organic products are up nearly 20%, and 95%+ organic products have seen nearly 30% growth over last year. Herbal teas are the second largest category within the National Organic Program (NOP)-coded product classifications, showing an approximate 9% growth rate in 2003. While the affluent baby boomer generation (40-60 year olds) has been the main driving force behind the natural products market, the organic sub-sector is being co-driven by a health-conscious and socially-conscious younger generation.

Aside from organic, demand is also increasing for certain age-related, condition-specific natural products, for example herbal products that have been clinically tested to alleviate conditions related to menopause. The serious medical risks of conventional hormone replacement therapy (HRT), which became highly publicized in mid 2002, became a boon for the dietary supplement industry as large numbers of American women switched to natural herbal alternatives to HRT. New products promising anti-aging benefits such as cosmeceuticals are also increasing in demand.

The size of the US dietary supplement market is presently estimated at between US $4 to $5 billion at retail level, depending on the product inclusion criteria and the method of analysis used. The size of the US natural personal care and cosmetic products market is estimated at just under US $4 billion at retail, while the newly emerging market for cosmeceutical products, which also accounts for some
natural ingredients, is estimated at about $3 billion. All together, the three categories amount to nearly $12 billion at retail. On the supply side, for the bulk natural ingredients covered in this Market Brief, the US imported over $1.7 billion in 2002 and exported over $1.3 billion.

Great care must be exercised, however, when applying the data provided in this report towards a determination of the total quantity and value of natural ingredients that are dedicated exclusively to an end-use in natural cosmetic and/or dietary supplement products in the US. While a significant portion of these natural ingredients are used in the cosmetic and/or dietary supplement trades, an unknown portion of the same ingredients is also used in several other product categories including conventional- health- and/or functional- food products, alcoholic- and/or non-alcoholic beverages, conventional- and/or homeopathic- over-the-counter (OTC) or prescription drug products, pet products and tobacco products, among others product groups.

Future trends
In the past, the natural products market was driven largely by a series of “superstar” ingredients that were catapulted into the mainstream due, in part, to positive clinical research, often from European studies, for example echinacea herb & root for stimulating the immune system, St. John’s wort herb for mild to moderate depression, black cohosh rhizome for menopausal conditions, kava rhizome for anxiety and stress, saw palmetto fruit for benign prostatic hyperplasia, ephedra herb for weight loss, and ginkgo leaf for cerebral insufficiency.

In the meantime, numerous reports of negative herb/drug interactions, adverse event reports and highly publicized quality control problems, among other issues, have had a serious negative impact on consumer confidence in the natural products sector. Some natural ingredients that were top-sellers only two years ago have plummeted, ephedra and kava in particular, as product companies quickly reformulate their products to remove these ingredients in an effort to reduce liability and avoid punitive regulatory actions.

The trend now appears to be towards natural ingredients and products that meet certain social criteria rather than towards the next superstar botanical, for example ingredients that not only have sufficiently documented evidence of safety and efficacy for conditions associated with aging (e.g. enlarged prostate, hair loss, memory loss, menopause, sexual dysfunction), but also those that are produced in an ecologically and economically sustainable manner, preferably certified organic or ethically wildcrafted, are documented to be free of genetically engineered components, are “cruelty free” or “not tested on animals,” and are produced by companies that actively support cultural and environmental sustainability through investing some percentage of their profits in organic farms, reserves, or community outreach. There is also growing awareness among natural products consumers of labor conditions in developing countries evidenced by the fact that demand is also growing for “Fair Trade®” certified natural products as well as for clothing produced by “No Sweat Shop” accredited manufacturers, both logos providing some assurance to consumers that workers throughout the chain have been paid a living wage.

US natural product companies that promote the concept of conscious consumerism and that have also developed reciprocally beneficial relationships with their ingredient suppliers in the developing countries are finding that they can effectively market the story behind the product, especially if it involves successful, sustainable support for an indigenous community. A number of successful natural cosmetic and dietary supplement companies now promote their relationships with indigenous communities as a key selling point, and indeed they dedicate pages of their website content to tell the story.
Additional evidence of this trend is provided by a new market research group and journal (LOHAS JOURNAL) that defines the new natural marketplace under the acronym “LOHAS,” which stands for Lifestyles of Health and Sustainability. The LOHAS marketplace is defined to include products and services that improve health, safeguard eco-systems, develop human potential in a sustainable manner, reduce the use of natural resources, and are created or conducted in a socially just manner.

Another example is provided by a new non-profit organization called “Living Libraries” that is promoting the concept of “Brands that Matter” by providing American consumers with information and recommendations on “green” herbal product companies that support economic and cultural sustainability in ways that concretely help indigenous communities to maintain their culture. Other social and environmental groups are also publishing consumer product guides including Greenpeace, which publishes a guide to products that are free of genetically engineered components, as well as numerous other organizations that are publishing various “cruelty free” consumer shopping guides and/or “certified vegan” shopping guides, both for listings of products that do not contain animal products and that have not been tested on animals.

Taking these trends into consideration, natural ingredients and products that meet one or more of the aforementioned health, quality and sustainability criteria have a good chance of future success in the US natural products market.
INTRODUCTION TO THE US MARKET

The market and the regulatory framework in the United States (US) for natural ingredients, particularly medicinal herbs and extracts, and the natural consumer products that are made from them, is unique by comparison to most of the US’ top trading partners. Whereas countries such as Australia, Canada, and those of the European Union (EU) consider these products to be drugs, the US exist as an anomaly, having classified many natural health products as dietary supplements, which are therefore regulated as a subset of food regulations, or as non-drug cosmetics. Many of the very same natural cosmetic and dietary supplement products in the US market are, in contrast, licensed over-the-counter (OTC) drugs in Australia, Canada, EU countries, as well as non-EU European countries like Switzerland.

FDA COSMETICS DEFINITION
The Food, Drug, and Cosmetic Act (FD&C Act) defines cosmetics by their intended use, as “articles intended to be rubbed, poured, sprinkled, or sprayed on, introduced into, or otherwise applied to the human body...for cleansing, beautifying, promoting attractiveness, or altering the appearance.” Among the products included in this definition are skin moisturizers, perfumes, lipsticks, fingernail polishes, eye and facial makeup preparations, shampoos, permanent waves, hair colors, toothpastes, and deodorants, as well as any material intended for use as a component of a cosmetic product. Some products meet the definitions of both cosmetics and drugs. This may happen when a product has two intended uses. For example, a shampoo is a cosmetic because its intended use is to cleanse the hair. An anti-dandruff treatment is a drug because its intended use is to treat dandruff. Consequently, an antidandruff shampoo is both a cosmetic and a drug. Among other cosmetic/drug combinations are toothpastes that contain fluoride, deodorants that are also anti-perspirants, and moisturizers and makeup marketed with sun-protection claims. Such products must comply with the requirements for both cosmetics and drugs.

COSMECEUTICALS
While the FD&C Act does not recognize the term “cosmeceutical,” the cosmetic industry uses this word to refer to cosmetic products that have medicinal or drug-like benefits. A product can be a drug, a cosmetic, or a combination of both, but the term 'cosmeceutical' has no meaning under the law.  

FDA DIETARY SUPPLEMENT DEFINITION
FDA regulates dietary supplements under a different set of regulations than those covering “conventional” foods and drug products (OTC and prescription). The US Congress defined the term “dietary supplement” in the Dietary Supplement Health and Education Act (DSHEA) of 1994. A dietary supplement is a product taken orally that contains a "dietary ingredient" intended to supplement the diet. The “dietary ingredients” in these products may include: vitamins, minerals, herbs or other botanicals, amino acids, and substances such as enzymes, organ tissues, glandulars, and metabolites. Dietary supplements can also be extracts or concentrates, and may be found in many forms such as tablets, capsules, softgels, gelcaps, liquids (fluidextracts, juices, syrups, teas, tinctures), or powders. Whatever their form may be, DSHEA places dietary supplements in a special category under the general umbrella of “foods,” not drugs, and requires that every supplement be labeled a dietary supplement.

NUTRACEUTICALS
The term “nutraceutical” has no legal definition in the US. According to the Nutraceutical Institute, nutraceuticals (often referred to as phytochemicals or functional foods) are natural, bioactive chemical compounds that have health promoting, disease preventing or medicinal properties. According to Health Canada, a nutraceutical is a product isolated or purified from foods that is generally sold in medicinal forms not usually associated with food, demonstrated to have a physiological
benefit or provide protection against chronic disease.

**NATURAL INGREDIENTS TRADE**

The US is one of the world’s leading producers, exporters and importers of natural ingredients that are used in natural cosmetics and dietary supplements, consistently ranking within the world’s top five importers and exporters. US domestic production statistics for most natural ingredients is not available with the exception of certain high-demand natural ingredients that are considered to be commodities such as flaxseed oil and peppermint oil.

The US imports, however, a larger quantity of natural ingredients than it exports. For the natural ingredient groups covered in this Market Brief, the total 2002 US import volume was 1,336,681,829 kg with a Customs Value of US $1,715,634,000 (See Table 2.2), while the total 2002 US export volume was 917,787,828 kg with a total FAS Value of US $1,323,451,000 (See Table 2.10). The leading suppliers of botanical raw materials are India and China, followed by Turkey, Mexico, Spain, Canada, Egypt, and Germany, among many others. The leading suppliers of essential oils and oleoresins are France, India, Argentina, China, Brazil and Mexico, among others.

**CONSUMPTION AND TRENDS AT RETAIL**

By the end of the 1990’s, total retail sales of herbal products in the US were estimated at US $4.0 billion annual showing a 1.2% increase up to US $4.12 billion for year 2000. According to a report by *Nutrition Business Journal*, the retail sales of finished herbal products in the US grew to US $4.18 billion during 2001, up from US $4.12 billion the previous year. Some estimates for 2002 have been placed at about US $4.2 billion. The FDA, however, has recently placed a much higher nominal market value total for herbal dietary supplement retail sales in CY 2000 at US $5.52 billion (See Table 2.11).

Retail sales of natural products, however, have actually been declining in the mainstream markets (grocery, drug, and mass market retailers) for three consecutive years, while, at the same time, sales have been increasing in the natural foods supermarkets (9% growth 2000 to 2001). These products have also entered a relatively new channel of trade, the newly emerging natural medicine or integrative retail pharmacies, and some are also sold in clinic dispensaries by natural healthcare providers such as licensed acupuncturists (L.Ac.), naturopathic doctors (N.D.), and chiropractic doctors (D.C.), but also by an increasing number of medical doctors (M.D.). Although medical professionals currently represent only a small part of the total US market for natural products, it is one of the fastest growing and most dynamic segments of the markets. Finally, natural cosmetics and dietary supplements are also sold via international, direct marketing, multi-level companies such as Amway Corp., Herbalife, Nature’s Sunshine Products, Shaklee Corp. as well as through a multitude of internet marketers.

Estimates of the US retail natural, consumer product industry size are often based on the analysis of “scan data” obtained from cooperating retail outlets. For example, Spence Information Services (SPINS) and ACNielsen Corporation jointly provide a service to industry on a subscription basis, called “ACNielsen SCANTRACK®: SPINS NaturalTrack,” that tracks sales of natural and organic products (including various herbal product subcategories) in mainstream markets (food, drug and mass channels of distribution). The service combines point-of-sale purchase information from ACNielsen’s SCANTRACK database, a statistically representative sample of markets across the US. SPINS also tracks sales of natural products through natural product supermarkets. Another market research firm, Information Resources Inc. (IRI) also provides analysis of top-selling herbal products in the food, drug, and mass market retail outlets on a subscription basis. One of the largest mass merchandisers, Wal-Mart, however, does not provide sales scan data to market research companies.
It is difficult, however, to track the total size of the US natural products market based only on the aforementioned scan data analysis because the data is generally focused on a single product category, e.g. cosmetics, herbal dietary supplements, non-herbal dietary supplements, over-the-counter (OTC) drugs, or foods (including functional foods, health foods, nutritional beverages, etc.). One would therefore need to combine and analyze the natural products sales data from all relevant product categories in order to arrive at a more complete picture of the US natural products market at the retail level. For example, flaxseed (*Linum usitatissimum* L.), a.k.a. linseed, and flaxseed oil products are among the top-selling herbal products in the US, however IRI data categorizes flaxseed in its “non-herbal” supplement category, presumably considering flaxseed oil to be a nutritional food supplement rather than as an herbal product.

Tracking the total annual sales of consumer products containing certain natural ingredients, for example cayenne fruit (*Capsicum annuum* L.), a.k.a. capiscum or paprika, is also complicated because this herb, in its various commercial forms (powdered fruit, dry- or fluid extracts, or oleoresin), crosses over into most product categories, including cosmetics (e.g. Weleda Frost Cream), multi-herb dietary supplements (e.g. Nature’s Way Ex-Stress Formula), health foods and nutraceuticals (e.g. various healthy drink mixes and snack foods), OTC homeopathic drugs (e.g. B&T® Indigestion Chewable Tablets), as well as in OTC topical preparations (e.g. Absorbine Jr.® Pain Relieving Liquid; Tiger Balm Warm Medicated Patches), and even in self defense products (e.g. Mace™ Pepper Gard® Pepper Spray).

Additionally, some of the top-selling herbal products are not (yet) represented in the aforementioned herbal or natural product scan data reports. This is especially the case for natural products that contain certain botanical raw materials or extracts that have official monographs published in the United States Pharmacopeia (USP), that may be used as active ingredients of either dietary supplement or OTC drug products (e.g. Plantago Seed USP, Psyllium Husk USP, Senna USP, Senna Fluidextract USP, Senna Syrup USP, Sennosides USP).

In the case of natural ingredients like Psyllium Husk USP (*Plantago ovata* FORSKAL, *P. psyllium* L., or *P. indica* L.), a bulk-forming laxative, and Senna USP (*Cassia acutifolia* DELILE or *C. angustifolia* VAHL), a stimulant laxative, the FDA allows these natural ingredients to be used as laxative active ingredients in either dietary supplement products or in OTC drug products, which can appear to be a confusing regulatory framework. For example, top-selling senna-based stimulant laxative products like Senokot® and X-PREP® Bowel Evacuant (both are products of Purdue Pharma L.P.) and ExLax® (a product of Novartis) are classified as OTC drugs, while other senna-based stimulant laxative products are regulated as dietary supplements (e.g. Bekunis® Senna Tea; NatureWorks® Swedish Bitters®, and Traditional Medicinals® Smooth Move®). Some of the top-selling bulk-forming laxative OTC drug products in the US contain psyllium husk and/or seed (e.g. Metamucil®, a product of Procter & Gamble Co.), but some of the leading US dietary supplement manufacturers also market psyllium-based bulk-forming laxative dietary supplement products (e.g. Nature’s Sunshine; Nature’s Way; Solgar, etc.). In these cases, both dietary supplement and OTC drug sales data need to be considered in order to arrive at total US sales of natural products that contain high-demand natural ingredients such as senna and/or psyllium.

**NATURAL COSMETIC INGREDIENTS**

The US is not yet a strong player in the global natural cosmetics ingredients market, and is still a net importer of essential oils used in cosmetics. On the other hand, US production of other natural cosmetics ingredients such as aloe vera, grown in southern Texas, and jojoba, grown in the Sonoran Desert in Arizona, has increased significantly in recent years. According to the Foreign Agricultural
Service (FAS), the export market for aloe vera, which is used in skin care products (aloe vera gel) as well as in dietary supplements (in the form of juice), is estimated to be somewhere in the hundreds of millions of US Dollars, and is expected to soon hit US $1 billion. About 90% of US-grown jojoba, which is used as a moisturizing ingredient in cosmetics and shampoos, is exported, mainly to cosmetic companies in Europe and Japan. Total US jojoba exports doubled between 1999 and 2000.12

SUPPLIERS OF NATURAL INGREDIENTS FOR COSMETICS AND DIETARY SUPPLEMENTS

Many, or most, of the natural ingredient manufacturers and distributors, operating in the US, sell to manufacturers of both cosmetic and dietary supplement products, as well as to manufacturers of functional- or health- food products. The product ranges offered by many consumer product manufacturers and marketers also include both cosmetic and dietary supplement products often under the same brand name. For example, leading international brands such as Weleda Inc., market not only herbal dietary supplement products, but also a broad range of natural personal care cosmetic products, as well as anthroposophic- and homeopathic- drug products.

Natural cosmetic products and ingredients are exhibited alongside dietary supplement products and ingredients (and homeopathic medicines) at the same trade show events in the US, e.g. natural ingredient supplier trade shows such as Supply Side East/West and consumer product trade shows such as Natural Products Expo East/West. The exhibitor profile at the Natural Products Expo includes leading manufacturers and marketers of personal care products (baby care, bath products, cosmetics and beauty aids, essential oils and fragrances, hair care, massage products, skin care, soaps, etc.), dietary supplements (including Indian Ayurvedic, traditional Chinese and Japanese herbal medicines, vitamins and minerals), homeopathic drugs, and natural and organic foods.13

To further illustrate the connection between the two sectors, with regard to natural ingredients that are common to both, many ingredient manufacturers and distributors in the US divide their list of offerings into sub-categories depending on the end-use. For example, one US extract manufacturer, Bio-Botanica®, advertises that it offers over 100 botanical extracts for use in cosmetic and beauty products, and over 100 botanical extracts in various forms (dry extracts, fluid extracts, soft extracts, tinctures) for use in food and beverage products, as well as over 300 botanical extracts for use in the dietary supplement, nutraceutical, and pharmaceutical products.14

Another US natural ingredient manufacturer, the A.M. Todd Company, describes itself as one of world’s leading suppliers of botanical extracts and natural mint oils for the food, beverage, flavor, fragrance, cosmetic, dietary supplement and nutraceutical industries.15 Avoca, Inc., a subsidiary of Pharmachem Laboratories, Inc. claims to be the largest botanical extraction facility in North America and produces extract ingredients for the fragrance, pharmaceutical and dietary supplement industries.16 Pure World Botanicals manufactures and markets solid-, fluid-, and powdered- extracts for the dietary supplement, food, beverage, and confection industries, respectively, and also offers an extensive line of specialty glycolic extracts for use as cosmetic ingredients.17

One of the world’s leading manufacturers and marketers of natural ingredients, Indena S.p.A. of Milan, Italy (with a reported 170 million Euro in consolidated turnover in 2000), which has sales and marketing operations in the US, offers standardized dry-, oily- and soft- extracts, as well as pure molecules isolated from medicinal plants, and complexes of active principles and phospholipids, for use in cosmetic, dietary supplement, health food, and pharmaceutical products.18 Aloecorp, one of the world’s leading suppliers of aloe vera ingredients, advertises itself as a supplier to finished goods manufacturers in
the nutritional and dietary supplement, functional food, cosmeceutical, personal care and pharmaceutical industries.\textsuperscript{19}

**OPPORTUNITIES FOR EXPORTERS**

Natural ingredients from South America, particularly Andean botanical raw materials and extracts, which have a unique opportunity for placement and growth in the US natural products market are discussed in this Market Brief (See: Market Prospects).

The strongest opportunities for natural ingredients from developing countries are those that are unique to a specific region and climate (e.g. cat’s claw stem bark or maca root) and, therefore, cannot be easily or feasibly produced by the US, or, for that matter, by other leading world producers such as China and India. Additionally, the fastest growing natural ingredient sub-sectors include ingredients that are certified organic and/or certified Biodynamic\textsuperscript{®}, which addresses the growing demand among natural products consumers for “green products” or “environmentally responsible products” that also promote sustainable agriculture, and for natural ingredients with other related certifications, such as FairTrade\textsuperscript{®} certification, which addresses the growing concern that laborers throughout the chain should earn a sustainable living wage.

The US natural product consumer is also increasingly interested in “cruelty-free” ingredients, meaning that the ingredients have not been laboratory tested on animals and comply with criteria established by such animal protection organizations as People for the Ethical Treatment of Animals (PETA) and the National Anti-Vivisection Society (NAVS), as well as ingredients that are certified to be free of genetically engineered (GE) components. Organizations such as Greenpeace publish consumer guides listing non-GE products.
1. PRODUCT DESCRIPTION

This Market Brief covers natural ingredients that are used in the US cosmetics and/or dietary supplement industries, respectively, with highlights on selected Andean products, classified under the Harmonized System (HS) Codes listed in Table 1 below.

1.1 Customs and Trade Statistics Classification

The Harmonized Commodity Description and Coding System, generally referred to as "Harmonized System" or simply "HS", is a multipurpose international product nomenclature developed by the World Customs Organization (WCO). It comprises about 5,000 commodity groups, each identified by a six-digit code, arranged in a legal and logical structure and is supported by well-defined rules to achieve uniform classification. The system is used by more than 190 countries and economies as a basis for their Customs tariffs and for the collection of international trade statistics. Over 98% of the merchandise in international trade is classified in terms of the HS.²⁰

For this Market Brief, the COMTRADE database, United Nations Statistics Division, was referenced to for 1997-2001 trade statistics. For 2002 trade data, the database of the US Department of Commerce, US Census Bureau was utilized. In the trade data of the US Census Bureau, up to 10 digits are used. Most of the natural ingredients that are used in the US cosmetics and dietary supplement industries, respectively, are not commodities and do not have their own exclusive HS Code. Therefore, most are grouped within a general product code.

The US Census Bureau merchandise trade statistics measure goods traded between the US and other countries. They are the official source of information about US imports, exports and balance of merchandise trade. As a leading economic indicator and a major component of the Gross Domestic Product (GDP), the statistics provide critical information to a wide and varied group of users in the public and private sectors. Sources for import statistics include 1) the U.S. Customs Service (Customs) Automated Broker Interface (ABI), 2) paper import entry summaries (Appendix A), and 3) paper or electronic applications for foreign trade zone admission. Sources for export statistics include 1) the Automated Export System (AES), 2) paper Shipper's Export Declarations (SEDs), and 3) Canadian data provided by Statistics Canada. Export declarations, either paper or electronic, are required for shipments to all countries except Canada, and are completed by exporters (US principal parties in interest) or their duly authorized agents who submit them to the exporting carrier who has the responsibility to submit them to Customs at the time of exportation.²¹
<table>
<thead>
<tr>
<th>HS Code</th>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0902</td>
<td>Tea leaf (green and black)</td>
</tr>
<tr>
<td>0903</td>
<td>Maté leaf</td>
</tr>
<tr>
<td>0904.20</td>
<td>Fruits of the genus Capsicum (cayenne pepper or paprika)</td>
</tr>
<tr>
<td>0909</td>
<td>Seeds of anise, caraway, coriander, cumin, fennel, etc....:</td>
</tr>
<tr>
<td>0909.10.0000</td>
<td>Anise seed</td>
</tr>
<tr>
<td>0909.20.0000</td>
<td>Coriander seed</td>
</tr>
<tr>
<td>0909.30.0000</td>
<td>Cumin seed</td>
</tr>
<tr>
<td>0909.40.0000</td>
<td>Caraway seed</td>
</tr>
<tr>
<td>0909.50.0000</td>
<td>Fennel seed and Juniper berries</td>
</tr>
<tr>
<td>0910</td>
<td>Ginger rhizome, turmeric rhizome, thyme herb, etc.:</td>
</tr>
<tr>
<td>0910.10.2000</td>
<td>Ginger rhizome, not ground</td>
</tr>
<tr>
<td>0910.10.4000</td>
<td>Ginger rhizome, ground</td>
</tr>
<tr>
<td>0910.30.0000</td>
<td>Turmeric rhizome</td>
</tr>
<tr>
<td>0910.40.2000</td>
<td>Thyme herb and bay leaf</td>
</tr>
<tr>
<td>1210</td>
<td>Hop strobile</td>
</tr>
<tr>
<td>1211</td>
<td>Plants and parts of plants (including seeds and fruits), of a kind used primarily in perfumery, in pharmacy or for insecticidal, fungicidal or similar purposes, fresh or dried, whether or not cut, crushed or powdered:</td>
</tr>
<tr>
<td>1211.10.0000</td>
<td>Licorice roots</td>
</tr>
<tr>
<td>1211.20.0020</td>
<td>Ginseng roots (American and Asian), cultivated</td>
</tr>
<tr>
<td>1211.20.0040</td>
<td>Ginseng roots (American and Asian), wild</td>
</tr>
<tr>
<td>1211.90.2000</td>
<td>Mint leaves (peppermint and spearmint), crude or not manufactured</td>
</tr>
<tr>
<td>1211.90.4020</td>
<td>Mint leaves (peppermint and spearmint) used as herbal teas</td>
</tr>
<tr>
<td>1211.90.4040</td>
<td>Mint leaves (peppermint and spearmint), cut, crushed or powdered</td>
</tr>
<tr>
<td>1211.90.9020</td>
<td>Psyllium seed husks, fresh or dried</td>
</tr>
<tr>
<td>1211.90.9031</td>
<td>Substances having anesthetic, prophylactic or therapeutic properties and principally used as medicaments or ingredients thereof</td>
</tr>
<tr>
<td>1211.90.9040</td>
<td>Basil leaf</td>
</tr>
<tr>
<td>1211.90.9050</td>
<td>Sage leaf</td>
</tr>
<tr>
<td>1211.90.9080</td>
<td>Plants and parts of plants, other than mint leaves, used as herbal teas</td>
</tr>
<tr>
<td>1211.90.9090</td>
<td>Other plants and parts of plants, used primarily in perfumery, in pharmacy (including cat's claw bark, dragon's blood croton, maca root, neem, senna)</td>
</tr>
<tr>
<td>1212.20.0000</td>
<td>Seaweeds and other algae</td>
</tr>
<tr>
<td>1301</td>
<td>Lac; natural gums, resins, gum-resins and oleoresins (for example, balsams)</td>
</tr>
<tr>
<td>1302</td>
<td>Vegetable saps and extracts; pectic substances, pectinates and pectates; agar-agar and other mucilages and thickeners, whether or not modified, derived from vegetable products:</td>
</tr>
<tr>
<td>1302.12.0000</td>
<td>Licorice root extract</td>
</tr>
<tr>
<td>1302.13.0000</td>
<td>Hop strobile extract</td>
</tr>
<tr>
<td>1302.19.4020</td>
<td>Crude ginseng extract</td>
</tr>
<tr>
<td>1302.19.4040</td>
<td>Other substances having anesthetic, prophylactic or therapeutic properties</td>
</tr>
<tr>
<td>1302.19.9020</td>
<td>Cashew nut shell liquid</td>
</tr>
<tr>
<td>1302.19.9040</td>
<td>Other vegetable saps and extracts, NESOI</td>
</tr>
<tr>
<td>1302.20.0000</td>
<td>Pectic substances, pectinates and pectates</td>
</tr>
<tr>
<td>1302.31.0000</td>
<td>Agar-agar</td>
</tr>
<tr>
<td>1302.32.0020</td>
<td>Guar seed mucilage</td>
</tr>
<tr>
<td>1302.32.0040</td>
<td>Locust bean mucilage</td>
</tr>
<tr>
<td>1302.39.0010</td>
<td>Carrageenan</td>
</tr>
<tr>
<td>1302.39.0090</td>
<td>Other mucilages and thickeners</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1508</td>
<td>Ground-nut oil and its fractions, whether or not refined, but not chemically modified</td>
</tr>
<tr>
<td>1513</td>
<td>Coconut (copra), palm kernel or babassu oil and fractions thereof, whether or not refined, but not chemically modified</td>
</tr>
<tr>
<td>1515</td>
<td>Other fixed vegetable fats and oils and their fractions, whether or not refined, but not chemically modified:</td>
</tr>
<tr>
<td>1515.11.0000</td>
<td>Linseed (flaxseed) oil, crude</td>
</tr>
<tr>
<td>1515.19.0000</td>
<td>Linseed (flaxseed) oil, refined</td>
</tr>
<tr>
<td>1515.21.0000</td>
<td>Corn oil, crude</td>
</tr>
<tr>
<td>1515.29.0020</td>
<td>Corn oil, once-refined</td>
</tr>
<tr>
<td>1515.29.0040</td>
<td>Corn oil, fully-refined</td>
</tr>
<tr>
<td>1515.30.0000</td>
<td>Castor oil</td>
</tr>
<tr>
<td>1515.50.0000</td>
<td>Sesame oil</td>
</tr>
<tr>
<td>1515.90.2000</td>
<td>Nut oils, NESOI</td>
</tr>
<tr>
<td>1515.90.6000</td>
<td>Jojoba oil</td>
</tr>
<tr>
<td>1515.90.8010</td>
<td>Hemp oil</td>
</tr>
<tr>
<td>1515.90.8090</td>
<td>Fixed vegetable fats and their fractions, NESOI</td>
</tr>
<tr>
<td>1516.20</td>
<td>Vegetable fats and oils and their fractions, partly or wholly hydrogenated, inter-esterified, re-esterified or elaidinised, whether or not refined, but not further prepared</td>
</tr>
<tr>
<td>1521</td>
<td>Vegetable waxes (other than triglycerides), beeswax, other insect waxes and spermaceti, whether or not refined or coloured:</td>
</tr>
<tr>
<td>1521.10.0010</td>
<td>Candelilla wax</td>
</tr>
<tr>
<td>1521.10.0040</td>
<td>Carnauba wax</td>
</tr>
<tr>
<td>1521.10.0060</td>
<td>Vegetable waxes (other than triglycerides) NESOI</td>
</tr>
<tr>
<td>1521.90.2000</td>
<td>Beeswax, bleached</td>
</tr>
<tr>
<td>1521.90.4000</td>
<td>Beeswax, unbleached and other insect waxes and spermaceti</td>
</tr>
<tr>
<td>1804.00</td>
<td>Cocoa butter, fat and oil</td>
</tr>
<tr>
<td>2101.20.2000</td>
<td>Tea leaf and maté leaf extracts, essences and concentrates</td>
</tr>
<tr>
<td>3203.00</td>
<td>Colouring matter of vegetable or animal origin (including dyeing extracts but excluding animal black), whether or not chemically defined; preparations as specified in Note 3 to this Chapter based on colouring matter of vegetable or animal origin</td>
</tr>
<tr>
<td>3301</td>
<td>Essential oils (terpeneless or not), including concretes and absolutes; resinoids; extracted oleoresins; concentrates of essential oils in fats, in fixed oils, in waxes or the like, obtained by enfleurage or maceration; terpenic by-products of the deterpenation of essential oils; aqueous distillates and aqueous solutions of essential oils</td>
</tr>
</tbody>
</table>
1.2 Expanded definitions of selected high-demand natural ingredients

American ginseng root (Panax quinquefolius L.) is a perennial plant, native to cool and shady hardwood forests of central-, eastern-, and northern North America. Harvested in the fall, the root is separated from the rhizome, and dried at low temperature. According to the Pharmacopoeia of the People's Republic of China, the dried root must contain not less than 1.0% of ginsenoside Rb$_1$ and according to the United States National Formulary, not less than 4.0% of total ginsenosides. The supply is produced mainly in Canada (Ontario & British Columbia), followed by the US (Wisconsin) and also China. It is used mainly as a dietary supplement in the form of herbal teas, chewing chips, fluidextracts, and powdered root or extract in capsules or tablets. Ginseng oil and extracts are used in a range of cosmetic products including bath oils, facial cleansers, hair care products (conditioners and shampoos), moisturizing creams, perfumes, skin lotions, soaps, and sunscreens.

Asian ginseng root (Panax ginseng C.A. MEYER) is a perennial plant, native to the montane forests of central eastern Asia. Cultivated mainly in in China, Korea, and Japan, the supply is imported mainly from China and Korea. According to the United States National Formulary, the dried roots must contain not less than 0.2% of ginsenoside R$_8$ and not less than 0.1% of ginsenoside Rb$_1$. Its uses as a component of dietary supplement and cosmetics products are comparable to those of American ginseng root. See above.

Cat's claw bark (Uncaria tomentosa (WILLD.) DC), also known by its Peruvian names uña de gato and garabato amarillo, and by its indigenous Asháninka name savéntaro, is a woody vine native to Peru and other tropical areas of Central and South America. The plant is usually cut at the base and the vine is pulled down from the canopy to harvest the stem bark. Extracts of cat’s claw bark are used mainly as dietary supplements for supporting or improving immune system function as well as for arthritic conditions, and to a lesser extent as components of liquid preparations for topical application, sometimes in combination with other Andean botanicals such as dragon’s blood croton (Croton lechleri MÜLL. ARG.).

Cayenne fruit (Capsicum annuum L. var. minimum (MILLER) HEISER and small fruited varieties of Capsicum frutescens L.), also known as capsicum, chilies, chili pepper, and paprika, is an annual (perennial in the tropics), native to tropical South America, now cultivated in tropical zones worldwide. According to the European Pharmacopoeia, the dried ripe fruits must contain minimum 0.4% of total capsaicinoids. The supply is cultivated in the southwestern US, and is also imported from Mexico, China, India and tropical African countries. Capsicum oleoresin and purified capsaicin are both used as components of analgesic creams and lotions. Cayenne tincture as well as preparations containing the tincture are also used. Capsicum extracts are used as components of cosmetics including dry hair care, dry skin care, insect repellent, sunscreen, and varicose vein products. The powdered fruit (in capsules or tablets), oleoresin, and tincture forms are used in dietary supplement products.

Ginger rhizome (Zingiber officinale ROSCOE) is a perennial, cultivated plant, native to tropical southeastern Asia (no longer found in the wild). The main suppliers are India, China, Nigeria, Indonesia, but some of the supply also comes from the US (Hawaii), Costa Rica, Dominican Republic, and Jamaica. According to the United States National Formulary, the dried rhizome (scraped or unscraped) must contain not more than 0.18% shogaols and not less than 0.8% gingerols and gingerdiones. Ginger Tincture NF must contain not more than 0.034% 6-shogaol and not less than 0.10% of gingerols. Ginger is widely used in dietary supplement products in the form of juice (in syrup base), herbal tea, oleoresin, and powdered rhizome or extract (in capsules or tablets), for promoting healthy
digestion, preventing morning sickness and motion sickness, for joint health (arthritic conditions). Ginger is also used as a secondary component in a wide range of categories including laxatives and liver tonics. Ginger essential oil and ginger aqueous infusions are used as components of cosmetics including creams, detergents, lotions, perfumes and soaps.

**Green tea leaf** (*Camellia sinensis* (L.) O. KUNTZ), a cultivated shrub, presumably native to China. The supply is imported mainly from China, India, Japan and other tropical or subtropical regions. Green tea leaf is widely used in dietary supplement products (e.g. herbal teas, dry extracts in tablets or capsules) and as a component of cosmetics including deodorant sticks, eye gels, facial masks, facial moisturizers, hand and body lotions, shampoos, conditioners and hair rinses, soaps, sunscreens, and toothpastes.

**Licorice root** (*Glycyrrhiza glabra* L. *G. inflata* BÁTALIN, and *G. uralensis* FISCHER ex DC) is a perennial collected in the wild and cultivated. The world supply is produced mainly in China, Afghanistan, Azerbaijan, Iran, Pakistan, Syria, Turkey, Turkmenistan, Uzbekistan, as well as in Europe (Albania, Bulgaria, Italy). According to the United States National Formulary, dried licorice (roots, rhizomes, and stolons) must contain not less than 2.5% of glycyrrhizic acid (according to Ph.Eur., not less than 4.0%). Powdered Licorice Extract NF must contain not less than 6.0% of glycyrrhizic acid, and Licorice Fluidextract NF has no minimum requirement. Licorice is widely used in dietary supplement products, particularly as a component of tonic formulas (liver, stomach), digestive- aids, laxatives, and especially upper respiratory tract, cough and sore throat formulas, in the form of teas, tinctures, fluidextracts, and powdered root or dry extract in capsules or tablets. Licorice extract is also used as a component of cosmetics including bath mixtures, douches, hand creams, hair care products (shampoo and conditioner), skin creams and gels, lotions, moisturizers, ointments, and skin-lightening creams.

**Linseed (Flaxseed)** oil is obtained by cold expression from ripe seeds of *Linum usitatissimum* L. Canada is the world’s leading producer of flaxseed accounting for 80% of world trade. Other major producers include China, the US and India. Flaxseed oil is widely used in dietary supplement products as a source of essential fatty acids (EFAs). Flaxseed extracts and/or oil are also used as components of cosmetics including body milks, facial creams, moisturizing and emollient hand creams, softening massage oils, and it can be used in most any cosmetic product as an active principle or as a carrier in the oily phase.

**Maca root** (*Lepidium meyenii* WALP), is an herbaceous, perennial, cultivated crop, found only on the Andean central sierra of Peru (in Junín and Pasco), in the puna agro-ecological zone about 4,000 m. Powdered maca root, maca root dry extract (in capsules or tablets), maca fluidextracts, and roasted maca (powder or granules for making coffee- or tea-like drinks) are marketed as herbal dietary supplements, mainly for enhancing fertility or treating sexual dysfunction.

**Maté leaf** (*Ilex paraguariensis* ST.- HIL.), also known as Paraguay tea or yerba maté, is an evergreen tree or shrub, cultivated between latitudes 30° and 20° south. The supply is imported from Brazil, Argentina, Paraguay, Uruguay, Antigua and Barbuda, and Peru. Maté leaf contains 0.3–2.4% caffeine, according to the German Drug Codex (DAC), not less than 0.6% (green maté) and 0.4% (roasted maté). Maté is mainly used in herbal dietary supplement products for fatigue, but also as a diuretic component of weight loss programs, in herbal tea, fluidextract or tincture forms. Maté extract is also used to some extent as a component of cosmetic skin care preparations.

**Neem leaf / seed oil** (*Azadirachta indica* J. JUSS.), is presumed to be native to Burma and NE India, and is now cultivated in many semi-arid and sub-humid areas of Asia, Africa, Australia, South America, and the southern United States. The dried leaf or
extract are used as components of herbal dietary supplements taken orally (in capsules, tablets, and teas) to improve skin conditions (e.g. acne, hemorrhoids, psoriasis) and for lowering blood sugar levels (glycemic control). Neem seed oil is used as a component of cosmetics applied topically for acne, athlete’s foot, candida, dandruff, eczema, fungus, headlice, herpes, psoriasis, etc., and as a component of hand and body lotions, face creams, oral hygiene products (mouth freshener, mouthwash, toothpaste), and soaps.

**Psyllium husk** is the cleaned, dried seed coat, separated by winnowing and thrashing, from the seeds of *Plantago ovata* FÖRSKAL, *Plantago psyllium* L., or from *Plantago indica* L.40 Psyllium is widely used as a dietary fiber supplement, as a bulk-forming laxative, and as a supplement taken to reduce the risk of coronary heart disease as part of a diet low in saturated fat and cholesterol.
2. PRODUCTION, FOREIGN TRADE AND CONSUMPTION

The International Research Institute (IRI) has estimated the farm-level value of herbs produced in the North America to be more than US $1 billion, with the market growing at least 10 percent annually.\(^1\) One of the high-demand medicinal plants cultivated and wild collected in the US (and Canada) is echinacea (various species), which has been estimated to account for about 10% of the US dietary supplement market.\(^2\)

Some of the most important medicinal and aromatic plants cultivated on a relatively large-scale in the US, that are used both domestically as natural ingredients in dietary supplement and/or cosmetic products, and are also produced for the export market, include:

- Aloe vera (Aloe vera (L.) BURM. f.)
- American ginseng root (Panax quinquefolius L.)
- Cayenne fruit (Capsicum annuum L.)
- Echinacea purpurea flowering tops and root (Echinacea purpurea (L.) MOENCH)
- Feverfew leaf (Tanacetum parthenium (L.) SCHECHTER)
- Flaxseed, a.k.a. linseed (Linum usitatissimum L.)
- Garlic bulb (Allium sativum L.)
- Hop strobile (Humulus lupulus L.)
- Jojoba seed (Simmondsia chinensis (LINK) C.K. SCHNEID.)
- Peppermint leaf (Mentha x piperita L.)
- Red clover blossom (Trifolium repens L.), and
- Soybean (Glycine max MERR.).

Some of the most economically important wild-collected medicinal plants in the US, that are used as natural ingredients in dietary supplement and/or cosmetic products (some are also used in drug products, e.g. slippery elm bark and witch hazel), include:

- Black cohosh rhizome (Actaea racemosa L.)
- Cascara sagrada bark (Frangula purshiana (DC.) J.G. COOPER)
- Echinacea angustifolia root (Echinacea angustifolia DC)
- Echinacea pallida root (Echinacea pallida (NUTT.) NUTT.)
- Goldenseal root (Hydrastis canadensis L.)
- Passionflower herb (Passiflora incarnata L.)
- Slippery elm bark (Ulmus rubra MUHL.)
- Saw palmetto fruit (Serenoa repens (W. BARTRAIB) SMALL), and
- Witch hazel (Hamamelis virginiana L.).

The economic importance of the above listed cultivated and wild-collected medicinal and aromatic plants has been determined through cross-reference and analysis of various data sources including:

- Retail product sales scan data (e.g. Information Resources Inc. (IRI) and Spence Information Services (SPINS)),\(^3\,4\) and other independent market reviews (e.g. Nicholas Hall’s Insight, among others)\(^5\)
- Crop production, price, and import/export statistics published by the National Agricultural Statistics Service (NASS) of the United States Department of Agriculture (USDA), as well as data from farmer trade associations.
- U.S. Trade Quick-Reference Tables published by the Office of Trade and Economic Analysis (OTEA), International Trade Administration, U.S. Department of Commerce
- COMTRADE Database, United Nations Statistics Division
- Current botanical monographs published in the United States Pharmacopeia, the United States National Formulary,\(^6\) the American Herbal Pharmacopoeia,\(^7\) and/or
Admission criteria for most herbal monographs published in the American Botanical Council Clinical Guide to Herbs is based on consistently high rankings in sales, in most channels of US retail trade (e.g. food, drug, mass market, and natural foods outlets) as reported by Information Resources Inc. (IRI), Spence Information Services (SPINS), and/or Nutrition Business Journal (NBJ).\textsuperscript{49} Selection and prioritization of “dietary supplements” (including botanical raw materials and extracts) for admission to the United States Pharmacopeia (USP) — National Formulary (USNF)\textsuperscript{50} is based upon several factors including:

1. Extent of use, based upon market sales or other factors
2. Historical use
3. Knowledge of chemical composition
4. Existence of other pharmacopoeial standards
5. Evidence of benefit
6. Interest from a governmental body
7. Absence of significant safety risk associated with its use.

Official monographs published in the USP designate that the article has an FDA-approved or USP-accepted use.\textsuperscript{51} USP and USNF botanical monographs are FDA-enforceable and include descriptions, requirements, tests, analytical procedures, and acceptance criteria. USP is recognized in the Dietary Supplement Health and Education Act (DSHEA) amendments to the Federal Food, Drug and Cosmetic Act as the nation’s official compendia for dietary supplement standards.

See Table 2 for an outline of top-selling monographed botanicals that are used in the US dietary supplement and cosmetic markets. Please refer to the section on Quality Requirements (Section 3.3) for a complete list of botanical raw materials and extracts that have official monographs published in either the USP or the USNF.
Table 2: TOP SELLING BOTANICALS IN THE US MARKET WITH MONOGRAPHS

<table>
<thead>
<tr>
<th>HERB</th>
<th>ABC MONOGRAPH</th>
<th>AHP MONOGRAPH</th>
<th>Ph.Eur. MONOGRAPH</th>
<th>USP or USNF MONOGRAPH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aloe leaf latex</td>
<td></td>
<td></td>
<td>Ph.Eur.</td>
<td>USP</td>
</tr>
<tr>
<td>American ginseng root</td>
<td>ABC</td>
<td></td>
<td></td>
<td>USF</td>
</tr>
<tr>
<td>Asian ginseng root</td>
<td>ABC</td>
<td></td>
<td>Ph.Eur.</td>
<td>USF</td>
</tr>
<tr>
<td>Bilberry fruit</td>
<td>ABC</td>
<td>AHP</td>
<td>Ph.Eur.</td>
<td></td>
</tr>
<tr>
<td>Black cohosh rhizome</td>
<td>ABC</td>
<td></td>
<td></td>
<td>USNF*</td>
</tr>
<tr>
<td>Cascara sagrada bark</td>
<td></td>
<td></td>
<td>Ph.Eur.</td>
<td>USP</td>
</tr>
<tr>
<td>Cat’s claw bark</td>
<td>ABC</td>
<td></td>
<td></td>
<td>USNF*</td>
</tr>
<tr>
<td>Cayenne (Capsicum)</td>
<td>ABC</td>
<td></td>
<td>Ph.Eur.</td>
<td>USF</td>
</tr>
<tr>
<td>Chamomile (Matricaria)</td>
<td>ABC</td>
<td></td>
<td>Ph.Eur.</td>
<td>USF</td>
</tr>
<tr>
<td>Chaste tree fruit</td>
<td>ABC</td>
<td>AHP</td>
<td></td>
<td>USNF*</td>
</tr>
<tr>
<td>Cranberry fruit</td>
<td>ABC</td>
<td></td>
<td></td>
<td>USF</td>
</tr>
<tr>
<td>Echinacea root</td>
<td>ABC</td>
<td>AHP*</td>
<td>Ph.Eur.</td>
<td>USF</td>
</tr>
<tr>
<td>Eleuthero root</td>
<td>ABC</td>
<td></td>
<td></td>
<td>USF</td>
</tr>
<tr>
<td>Feverfew leaf</td>
<td>ABC</td>
<td>AHP</td>
<td>Ph.Eur.</td>
<td>USF</td>
</tr>
<tr>
<td>Flaxseed (Linseed)</td>
<td>ABC</td>
<td></td>
<td>Ph.Eur.</td>
<td></td>
</tr>
<tr>
<td>Garlic bulb</td>
<td>ABC</td>
<td>AHP</td>
<td>Ph.Eur.</td>
<td>USF</td>
</tr>
<tr>
<td>Ginger rhizome</td>
<td>ABC</td>
<td>AHP</td>
<td>Ph.Eur.</td>
<td>USF</td>
</tr>
<tr>
<td>Ginkgo leaf</td>
<td>ABC</td>
<td></td>
<td></td>
<td>USF</td>
</tr>
<tr>
<td>Goldenenseal root</td>
<td>ABC</td>
<td>AHP</td>
<td></td>
<td>USF</td>
</tr>
<tr>
<td>Green tea leaf</td>
<td>ABC</td>
<td>AHP</td>
<td></td>
<td>USF</td>
</tr>
<tr>
<td>Hawthorn leaf &amp; flower</td>
<td>ABC</td>
<td></td>
<td></td>
<td>USF</td>
</tr>
<tr>
<td>Hop stroibile</td>
<td>ABC</td>
<td></td>
<td>Ph.Eur.</td>
<td></td>
</tr>
<tr>
<td>Horse chestnut seed</td>
<td>ABC</td>
<td></td>
<td></td>
<td>USNF</td>
</tr>
<tr>
<td>Kava-kava rhizome</td>
<td>ABC</td>
<td>AHP*</td>
<td>Ph.Eur.</td>
<td>USNF*</td>
</tr>
<tr>
<td>Licorice root</td>
<td>ABC</td>
<td></td>
<td>Ph.Eur.</td>
<td>USF</td>
</tr>
<tr>
<td>Milk thistle seed</td>
<td>ABC</td>
<td></td>
<td>Ph.Eur.</td>
<td>USF</td>
</tr>
<tr>
<td>Nettle root</td>
<td>ABC</td>
<td></td>
<td></td>
<td>USNF</td>
</tr>
<tr>
<td>Peppermint leaf</td>
<td>ABC</td>
<td></td>
<td>Ph.Eur.</td>
<td>USF</td>
</tr>
<tr>
<td>Psyllium seed/husk</td>
<td>ABC</td>
<td></td>
<td>Ph.Eur.</td>
<td>USP</td>
</tr>
<tr>
<td>Pygeum bark</td>
<td>ABC</td>
<td></td>
<td>Ph.Eur.</td>
<td>USNF</td>
</tr>
<tr>
<td>Red clover inflorescence</td>
<td>ABC</td>
<td></td>
<td></td>
<td>USF</td>
</tr>
<tr>
<td>Saw palmetto fruit</td>
<td>ABC</td>
<td></td>
<td>Ph.Eur.</td>
<td>USF</td>
</tr>
<tr>
<td>Senna leaf</td>
<td>ABC</td>
<td></td>
<td>Ph.Eur.</td>
<td>USP</td>
</tr>
<tr>
<td>Slippery elm bark</td>
<td>ABC</td>
<td>AHP</td>
<td></td>
<td>USP</td>
</tr>
<tr>
<td>St. John’s wort herb</td>
<td>ABC</td>
<td>AHP</td>
<td>Ph.Eur.</td>
<td>USF</td>
</tr>
<tr>
<td>Valerian root</td>
<td>ABC</td>
<td>AHP</td>
<td>Ph.Eur.</td>
<td>USF</td>
</tr>
<tr>
<td>Willow bark</td>
<td>ABC</td>
<td>AHP</td>
<td>Ph.Eur.</td>
<td></td>
</tr>
</tbody>
</table>

* Monograph in development

ABC: American Botanical Council Clinic Guide To Herbs
AHP: American Herbal Pharmacopoeia
Ph.Eur.: European Pharmacopoeia
USNF: United States National Formulary
USP: United States Pharmacopoeia
2.1 Production data

Natural ingredients used in the cosmetic and dietary supplement industries are, for the most part, produced from medicinal and aromatic plants as starting materials. Worldwide, most medicinal plants are still collected in the wild but cultivation has increased significantly in recent years, and in the US, cultivation has increased particularly on certified organic and/or certified Biodynamic® herb farms. Some food crops are also categorized as medicinal herbs and/or natural ingredients, i.e. cayenne fruit, cranberry fruit, flaxseed, garlic bulb, among others.

In the US, there are 2,048 separate botanical species listed in the American Herbal Products Association’s Herbs of Commerce, 2nd edition, including 25 fungi and 23 seaweeds. The Herbs of Commerce is an FDA-recognized compendium, and dietary supplement law requires product ingredients labeling to be consistent with the Standard Common Names (SCN) as defined in the Herbs of Commerce.52 Cosmetic ingredients must use nomenclature found in the International Cosmetic Ingredient Dictionary and Handbook published by the Cosmetic Toiletries and Fragrance Association (CTFA).53

Of the ten top-selling herbal dietary supplement products in US food and drug channels during 2002,54 five are native North American plants; (#3) echinacea herb and/or root (Echinacea spp.), (#5) saw palmetto fruit (Serenoa repens (W. Bartram) Small), (#8) cranberry fruit (Vaccinium macrocarpon Aiton), and (#9) black cohosh rhizome (Actaea racemosa L.). Ginseng root is also listed in the top ten (#6), although this includes combined sales for both American ginseng (Panax quinquefolius L.) and Asian ginseng (Panax ginseng C.A. Meyer). The remaining five herbs in the top ten-selling list are non-native herbs that are, however, cultivated in the US, (#1) ginkgo leaf (Ginkgo biloba L.), (#2) garlic bulb (Allium sativum L.), (#4) soy bean (Glycine max Merr.), (7) St. John’s wort herb (Hypericum perforatum L.), and (#10) valerian root (Valeriana officinalis L.). Single herbal products showing significant increases in demand include extracts of black cohosh rhizome, cranberry fruit, and milk thistle seed, respectively.

During the 1990’s, the US ranked as the world’s Nr. 3 country of import of medicinal plants categorized under HS 1211 with an average annual import volume of 56,000 tons valued at US $133,350,000. Conversely, the US ranked as the Nr. 4 country of export of HS 1211 medicinal plants with an average annual export volume of 11,950 tons valued at US $114,450,000.55 This Marketing Brief, however, attempts to capture a wider range of natural ingredients that are used in the US cosmetics and dietary supplements industries, and therefore, several other HS Codes in addition to HS 1211 are included.

With certain obvious exceptions (e.g. herbs that have a single, specific use, i.e. stimulant laxatives like senna leaf), neither the exporter in the country of origin nor the importer and/or distributor in the US can easily predict the end-use of the natural ingredients that they market. For example, capsicum or cayenne fruit (HS 0904.20.2000) and/or its oleoresin (HS 3301.90.1010) cross over into most finished product categories. Another example to illustrate the difficulty of applying the total quantity and value of an HS Code to a specific sector is hop strobile (HS 1210) and extracts thereof (HS 1302.13). While hops is, in fact, mainly used for the production of beer, some amount of the supply is dedicated for use as a component of aromatherapy products (e.g. dream pillows), bath products (e.g. Kneipp® Hops Herbal Bath), cosmetics (e.g. Nature’s Gate® Rainwater Herbal Shampoos; Weleda Iris Intensive Treatment Masque), herbal dietary supplements (e.g. GlaxoSmithKline Alluna™ Sleep; Traditional Medicinals® Nighty Night®), homeopathic drugs (e.g. B&T® Insomnia Chewables), and it is also used as a flavor component in nonalcoholic
beverages, candies, desserts, and baked goods.

Domestic production data is not available for the vast majority of natural ingredients covered in this Market Brief. The National Agricultural Statistics Service (NASS) of the United States Department of Agriculture (USDA) maintains area, yield, production, price and value of production data for some of the high-demand natural ingredients used in cosmetics and dietary supplements, for example capsicum fruit, cranberry fruit, flaxseed oil, garlic bulb, ginger rhizome, hop strobile, kava rhizome, soybean, spearmint leaf oil, and peppermint leaf oil.

Some domestic production data can also be obtained from various regional departments such as the Washington Agricultural Statistics Service (WASS), or market order boards (e.g. Market Orders Ginseng Board of Wisconsin), and some amount of data can be obtained from farmer trade associations (e.g. Hop Growers of America) or from tonnage surveys produced by the American Herbal Products Association, among other trade or governmental trade support organizations.

While some amount of natural ingredient production takes place in most of the 50 US States, the bulk of medicinal and aromatic plant cultivation is concentrated in a few specific regions. Relatively large-scale cultivation of catnip herb, cranberry fruit, echinacea herb & root, hop strobile, spearmint leaf, and peppermint leaf occurs in the Pacific Northwest, particularly in the States of Washington and Oregon, but also Idaho. Aloe vera is cultivated mainly in Texas, American ginseng root almost exclusively in Wisconsin, capsicum fruit mainly in New Mexico and Texas, cranberry fruit mainly in Wisconsin and Massachusetts, but also in the Pacific Northwest, flaxseed mainly in North Dakota, garlic bulb mainly in California, both ginger rhizome and kava rhizome in Hawaii, both ginkgo leaf and tea leaf in South Carolina, and jojoba bean in Arizona. Black cohosh rhizome is wild collected almost entirely in Florida.

The US Census Bureau is also beginning to compile some general industry data on establishments primarily engaged in growing crops, including, specifically, the following botanical raw materials categorized under the North American Industry Classification System (NAICS) sector codes:

**NAICS SUB-SECTOR 111419**
- Garlic bulb, grown under cover
- Ginger rhizome, grown under cover
- Ginseng root, grown under cover
- Herb farming, grown under cover
- Spice farming, grown under cover

**NAICS SUB-SECTOR 111998**
- Algae farming
- Aloe farming
- Chicory farming
- Herb farming, open field
- Hop farming
- Jojoba farming
- Mint farming
- Seaweed farming
- Spice farming
- Tea leaf farming

The USDA Economic Research Service estimates that certified organic herbs (cultivated and wildcrafted), flowers, mushrooms, and other nursery and greenhouse crops were grown organically in the US on about 15,000 acres in 2001. Certified organic medicinal and culinary herbs were grown in 39 States, with Washington State being the largest producer, accounting for 2,644 certified organic herb acres. Other leading organic herb producer States include California, Oregon, Missouri, Wisconsin, Idaho, Ohio and New Mexico. Nearly 8,500 acres of forests, scrublands, and other natural areas in seven States were also certified in 2001 for the harvesting of organic herbs and other wild crops, i.e. mushrooms.
2.1.1 Aloe vera

The NASS does not yet maintain annual production data on this relatively high-demand medicinal herb crop that is utilized in both the cosmetics and dietary supplement industries. The US Census Bureau groups aloe farming under the NAICS sub-sector 111998 (All Other Miscellaneous Crop Farming). The Texas Department of Agriculture Organic Certification Program presently has six certified growers of aloe vera leaf listed; Benson’s Aloe Farms, Good Earth Organic Farm, LODC Inc., M2 Organic Farm, Millberg Farms, and Thoeni Aloe Vera. Aloecorp, which states that it is the world’s largest aloe vera grower and processor, operates aloe plantations in both southern Texas and in the State of Tamaulipas, Mexico. According to the Texas Cooperative Extension, little data is available on annual production or sales value of Texas-grown aloe because the growers do not disclose production figures or discuss acreage.\textsuperscript{58} It is estimated, however, that 2,000 acres of aloe vera are being harvested in the Rio Grande Valley, which accounts for 95% of all aloe grown in the US. An acre yields about 2,268 to 3,175 kg monthly, and growers net about US $500-700 for each acre harvested.\textsuperscript{59} One of Japan’s largest pharmaceutical chains, Harmony Green Corp., recently began aloe production in a 40,000 sq ft processing plant in Harlingen, Texas.\textsuperscript{60} According to the Foreign Agricultural Service (FAS), the export market for aloe vera is estimated to be in the hundreds of millions and is expected to soon reach US $1 billion. Only a few US aloe vera producers export directly, and most sell their crops to wholesale distribution companies.\textsuperscript{61}

2.1.2 American ginseng root

The NASS does not yet maintain annual production data on this relatively high-demand medicinal herb crop. The US Census Bureau groups ginseng farming under the NAICS sub-sector 111419 (Other Food Crops Grown Under Cover). The US is the world’s second largest producer (about 25% of world supply) of American ginseng root (Panax quinquefolius L.). Canada is the largest producer, accounting for over 60% of world production, and the balance (about 15%) is now cultivated in China.\textsuperscript{62} There are an estimated 18,000 acres of ginseng under cultivation in North America (Canada & US).\textsuperscript{63} Wisconsin is the number one producer in the US, accounting for about 90-95% of all ginseng produced in the US.\textsuperscript{64} Cultivated ginseng generates up to $20 million annually in gross income for the State of Wisconsin. In 2001, Wisconsin had 890 ginseng dealers, including 485 licensed ginseng growers, accounting for 1,835 acres of seedling, two, three, and four-year-old gardens. About 85% of the crop is exported to Asia (mainly Hong Kong and Mainland China), and about 12% is sold to US buyers (7% New York, 5% California).\textsuperscript{65} Yields can range anywhere from 900-1,800 kg per acre.

In the twelve-month period ending December 2002, the US exported 320,609 kg of cultivated American ginseng root with an FAS Value of US $11,360,000 (= $35.43/kg). Approximately 44.4% of the total was exported to Hong Kong, 39.2% to Mainland China, 6.2% to Canada, 4.1% to South Africa, 2.1% to Taiwan, 1.6% to Singapore, and 1.0% to Germany. According to a February 2003 report by the Market Analysis Division of Agriculture and Agri-Food Canada, “China’s accession into the WTO has provided greater market access for Canadian ginseng exporters. The tariff rate for ginseng in 2003 will be 10.7%, down from 11.8% in 2002 and 36% in 2001. For the years 2004-2006, the tariff rate will be reduced to 9.7%, 8.6%, and 7.5% respectively. A value-added tax of 13% will continue to be applied. The reduction in the tariff rates should help to make Canadian grown ginseng more competitive with North American ginseng produced in China.”\textsuperscript{66}
2.1.3 Black cohosh rhizome

The NASS does not yet maintain production data for this, mostly wild collected, economically important native North American medicinal plant. At retail, black cohosh is among the ten top-selling herbal dietary supplements, with sales increasing significantly, even while the sale of most other single-herb dietary supplements have been declining or are flat compared to 2001 sales. The supply is collected mainly in the States of Kentucky and Tennessee, followed by Georgia, Ohio, North Carolina, Michigan, South Carolina, Virginia, West Virginia, and Wisconsin. In 1998, an estimated 272,000 to 318,000 kg was harvested, of which about 95% was wild collected. About 60% was exported, mainly to Germany, where it is processed for re-export back to the US. The top-selling black cohosh product in the US, Remifemin®, is manufactured by Schaper & Brümmer GmbH & Co. KG (Salzgitter, Germany), and is distributed in the US by a pharmaceutical company GlaxoSmithKline (Philadelphia, PA). Schaper & Brümmer has also begun cultivating black cohosh in Germany, where it has about 8 acres planted at various stages of growth. In 2000, an estimated 136,079 to 226,798 kg was wild collected. In 2002, the United States Fish and Wildlife Service (USFWS) reported that the average annual harvest from the wild is estimated to impact tens of millions of individual plants per year. Unauthorized collection of black cohosh on National Forests is reported to be extensive and incidents of poaching from National Parks has also been documented in recent years. In 2003, the United States Forest Service is continuing to census and appraise sustainable harvest levels. Meanwhile, cultivation experiments are also continuing as demand increases.

2.1.4 Cayenne fruit

The NASS maintains production data for cayenne fruit (a.k.a. capsicum, chili pepper and/or paprika). In 2002, cayenne fruit was among the top-selling herbal dietary supplements in food, drug, and mass market retail outlets. In a 1999 herb sales survey, 23% of natural food store consumers purchased cayenne at least once during the first half of 1999. Capsicum extracts or oleoresins are produced from cayenne fruit, and are used as components of cosmetics including dry hair care, dry skin care, sun care, and varicose vein products. The main cayenne producing State is New Mexico, followed by Texas, Arizona, and California, as shown in the table below. In 2002, the US imported 12,405,921 kg of cayenne fruit with a Customs Value of US$ 20,819,000 and exported 6,295,808 kg with an FAS Value of $11,796,000.

<table>
<thead>
<tr>
<th>Year</th>
<th>Commodity</th>
<th>State</th>
<th>Unit</th>
<th>Area, Yield, Production, Price per Unit, and Value of Production</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Planted, Harvested,</td>
<td>Yield, Production, Price per Unit, Value of production</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acres, Acres, Unit/Acres, Acres, Acres, Unit, Dollars/Unit, 1000 Dollars</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>Chile Peppers</td>
<td>AZ</td>
<td>1000 hundredweight</td>
<td>2,000, 3,000, 69, 190, 14.5, 2759</td>
</tr>
<tr>
<td>2002</td>
<td>Chile Peppers</td>
<td>CA</td>
<td>1000 hundredweight</td>
<td>2,000, 2,800, 230, 644, 27.8, 17914</td>
</tr>
<tr>
<td>2002</td>
<td>Chile Peppers</td>
<td>NM</td>
<td>1000 hundredweight</td>
<td>1,800, 1,000, 70, 180, 29.2, 2480</td>
</tr>
<tr>
<td>2002</td>
<td>Chile Peppers</td>
<td>TX</td>
<td>1000 hundredweight</td>
<td>600, 550, 50, 77, 40, 11000</td>
</tr>
<tr>
<td>2002</td>
<td>Chile Peppers</td>
<td>US</td>
<td>1000 hundredweight</td>
<td>30000, 28300, 103, 2909, 28.9, 84153</td>
</tr>
</tbody>
</table>

SOURCE: USDA NASS Agricultural Statistics Data Base
2.1.5 Cranberry fruit

The NASS maintains production data for cultivated cranberry fruit (*Vaccinium macrocarpon* Aiton). See table below. The commercial supply comes entirely from cultivated material and the major producers are Wisconsin, Massachusetts, Canada, New Jersey, Oregon, and Washington.\(^7\) Wisconsin, with its 220 licensed cranberry producers, accounts about 48% of all cranberries grown in the US.\(^7\)

At retail, cranberry fruit, in various forms (juice, spray-dried juice powder and dry concentrate in capsules, tablets, or teas) is among the ten top-selling herbal dietary supplement products and cranberry juice is a popular food/beverage product; producer prices have been depressed and growers only broke even or lost money in 2002. The United States Department of Agriculture (USDA) initially forecast the 2002 cranberry crop at 5.72 million 100-pound barrels (up 7 percent from 2001 and less than 1 percent above 2000) but actual yields were below average in Wisconsin, while New Jersey farmers decreased production from a year ago, and drought conditions adversely affected crops in Massachusetts. The 2002 yield has now been estimated at about 5.3 million barrels, which will effectively reduce surpluses and possibly boost prices up to $35 a barrel next year. The cost of production ranges between $30- to $35-per-barrel and, up to this point, growers were anticipating receiving $21- to $23-per-barrel, well below the cost of production.

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**Cranberries: Production by State and United States, 2000-01 and Forecasted 2002 1/**

<table>
<thead>
<tr>
<th>State</th>
<th>Total Production</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2000</td>
</tr>
<tr>
<td>MA</td>
<td>1,953,000</td>
</tr>
<tr>
<td>NJ</td>
<td>489,000</td>
</tr>
<tr>
<td>OR</td>
<td>398,000</td>
</tr>
<tr>
<td>WA</td>
<td>180,000</td>
</tr>
<tr>
<td>WI</td>
<td>2,692,000</td>
</tr>
<tr>
<td>US</td>
<td>5,712,000</td>
</tr>
</tbody>
</table>

1/ A barrel weighs 100 lbs.

**SOURCE:** USDA NASS Agricultural Statistics Data Base
2.1.6 Echinacea

The NASS does not yet maintain production data for this, both cultivated and wild collected, economically important native North American medicinal plant. At retail, echinacea has consistently ranked among the five top-selling herbal dietary supplements for several years, although sales decreased significantly during 2002.\(^\text{28}\)

Up to this point, echinacea products have been estimated to account for about 10% of the total US dietary supplement market.\(^\text{29}\)

In the cosmetics sector, echinacea is also used as a component of topical use creams, ointments, and tinctures, particularly first-aid products for wound healing. It is also used as a component of skin care and hair care products such as creams, shampoos and conditioners, and soaps.

In 2000, there were an estimated 10,000 acres of echinacea under cultivation in North America (Canada & US) as well as an estimated 20,000 wildcrafted acres.\(^\text{30}\)

2.1.7 Essential oils

2002 was another record year for US exports of essential oils. Both exports and imports increased significantly compared to the same period in 2001. The categories in the total with the sharpest rises were mixtures of odoriferous substances, peppermint oil, and spearmint oil, rising approximately 20, 24, and 29 percent (value in dollars), respectively. Total 2002 US production of peppermint oil was 3,092,624 kg, of which 2,565,400 kg was exported, and 1,942,000 kg of spearmint was produced, of which 813,900 kg were exported.

Echinacea is cultivated on a relatively large scale in the Pacific Northwest. For example, over the past decade, it has been one of the major crops produced by Trout Lake Farm, a 1,200 acre farm with two locations in Washington State. It is also an important crop at somewhat smaller farms in the Pacific Northwest including Pacific Botanicals, a 114 acre certified organic farm in Grants Pass, Oregon and Herb Pharm Farm, an 85 acre certified organic farm in Williams, Oregon. Echinacea is also cultivated within its native range, the Great Plains States, and on the East Coast at the 250 acre Gaia Herb Farm in Brevard, South Carolina, among other farms. Growers in Kansas have estimated, for cultivated *Echinacea pallida* root, a yield of 100 grams per plant after the third year of growth, which is equivalent to about 862 kg per acre, and amounts to a value of about US $26,000 per acre not including production expenses.\(^\text{31}\)
2.1.8 Flaxseed (Linseed) and oil

Canada is the world’s largest producer and exporter of flaxseed, accounting for 80% of the world supply. China, the US, and India are the other major producers. In the US, flaxseed is cultivated mainly in North Dakota, and to a much lesser extent in South Dakota, Montana, Minnesota, and other states. Production of flaxseed in 2002 totaled 12.6 million bushels, up 10 percent from the previous year. 704,000 acres were harvested in 2002, which is a 22 percent increase from 2001. In both 2000 and 2001, total US production of flaxseed oil was about 106.1 million kg.\(^2\)

Retail sales of flaxseed-based dietary supplement products increased by 49.2% in 2002 compared to the same period in 2001 in food, drug and mass market retail outlets.\(^3\) Ground flaxseed is used as a component of dietary supplements like Alena\(^a\) Energy Drink (ENRECO\(^b\), Inc., Manitowoc, Wisconsin), and whole flaxseed is used in low glycemic & dietary fiber health foods like Uncle Sam\(^c\) Cereal (U.S. Mills, Inc., Needham, MA). Flaxseed oil is a component of herbal dietary supplements such as Alphea\(^d\) soft-gel capsules (Bioriginal Food & Science Corp, Saskatchewan, Canada) and Lifestyle Lipids FLAX RELAX\(^e\) (Spectrum Essentials, Petaluma, CA). Flaxseed oil is also a popular single-ingredient dietary supplement marketed by several leading brands including Health From The Sun (Bedford, MA), Nature’s Way (Springville, UT), and Spectrum Essentials\(^f\) (Petaluma, CA).

Flaxseed extracts and/or oil are also used as components of cosmetics including body milks, facial creams, moisturizing and emollient hand creams, softening massage oils, and it can be used in most any cosmetic product as an active principle or as a carrier in the oily phase.

### Crop Summary

<table>
<thead>
<tr>
<th>Flaxseed: Value of Production, United States, 2000-2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value of Production: 1,000 Dollars</td>
</tr>
<tr>
<td><strong>Crop</strong></td>
</tr>
<tr>
<td>Flaxseed</td>
</tr>
</tbody>
</table>

**SOURCE:** USDA - National Agricultural Statistics Service

### Commodity Summary

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Year</th>
<th>State</th>
<th>Acres Planted</th>
<th>Acres Harvested</th>
<th>Yield (bushel)</th>
<th>Production (1000 bushels)</th>
<th>Price per Unit (dols / bu)</th>
<th>Value of Production (1000 dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flaxseed</td>
<td>2002</td>
<td>MN</td>
<td>6</td>
<td>5</td>
<td>18</td>
<td>90</td>
<td>5.7</td>
<td>513</td>
</tr>
<tr>
<td>Flaxseed</td>
<td>2002</td>
<td>MI</td>
<td>17</td>
<td>15</td>
<td>15</td>
<td>195</td>
<td>6.15</td>
<td>1199</td>
</tr>
<tr>
<td>Flaxseed</td>
<td>2002</td>
<td>ND</td>
<td>750</td>
<td>680</td>
<td>18</td>
<td>12240</td>
<td>5.8</td>
<td>70992</td>
</tr>
<tr>
<td>Flaxseed</td>
<td>2002</td>
<td>SD</td>
<td>12</td>
<td>4</td>
<td>11</td>
<td>44</td>
<td>5.45</td>
<td>240</td>
</tr>
<tr>
<td>Flaxseed</td>
<td>2002</td>
<td>US</td>
<td>785</td>
<td>704</td>
<td>17.9</td>
<td>12569</td>
<td>5.8</td>
<td>72944</td>
</tr>
</tbody>
</table>

**SOURCE:** USDA NASS Agricultural Statistics Data Base.
2.1.9 Ginger rhizome

The Hawaii Department of Agriculture maintains production statistics for ginger rhizome, and the US Census Bureau groups ginger farming under the NAICS sub-sector 111419 (Other Food Crops Grown Under Cover). Hawaii’s ginger rhizome farmers harvested 6,531,797 kg during the 2001/02 season, down 20% from the previous season’s revised estimate of 8,164,746 kg. Farm prices declined 33% to an average of US $0.66 kg during the 2001/2002 season, which is the lowest average price since the 1970/71 harvest, and total farm revenues were pegged at $4.3 million, down 47% from the 2000/2001 season. 

An influx of low cost Chinese ginger into the US market (50% of imports) has been blamed for a drop in local farm prices, so low that some farmers believe it may be uneconomical to harvest. Hawaii ginger growers were expected to plant 260 acres for harvest during the 2002/03 season, down 19% from the 320 acres harvested during the 2001/02 season. Based on the most recent 3-year average yield of 21,908 kg per harvested acre, the 2002/2003 crop would result in 7,030,754 kg, up 8% from the 2001/2002 harvest.

In 2002, ginger was among the 20 top-selling dietary supplements in food, drug and mass-market retail outlets. Popular, clinically tested ginger-based dietary supplement products in the US market include Ginger Wonder Syrup (New Chapter, Brattleboro, VT), Zintona® capsules (Dalidar Pharma Ltd., Yavne, Israel), and Zinaxin® capsules (Eurovita A/S, Karlslund, Denmark). Ginger essential oil and ginger aqueous infusions are used as components of cosmetics including creams, detergents, lotions, perfumes, shampoos, and soaps.

<table>
<thead>
<tr>
<th>Year 1/</th>
<th>Acres harvested</th>
<th>Yield per harvested acre</th>
<th>Production</th>
<th>Average farm price</th>
<th>Farm value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1,000 pounds</td>
<td>Cents per pound</td>
<td>$1,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>270</td>
<td>50.0</td>
<td>13,500</td>
<td>66.0</td>
<td>8,910</td>
</tr>
<tr>
<td>2001</td>
<td>360</td>
<td>50.0</td>
<td>18,000</td>
<td>45.0</td>
<td>8,100</td>
</tr>
<tr>
<td>2002</td>
<td>320</td>
<td>45.0</td>
<td>14,400</td>
<td>30.0</td>
<td>4,320</td>
</tr>
</tbody>
</table>

1/ Harvesting normally begins in December and continues into the year shown.

**Hawaii Fresh Ginger Root Statistics**

Acres harvested, yield per harvested acre, production, average farm price, and farm value
State of Hawaii, 2000-2002

**SOURCE:** Hawaii Agricultural Statistics Service, Hawaii Department of Agriculture
2.1.10 Ginkgo leaf

The NASS does not yet maintain production data for this high demand medicinal herb crop. In 2002, ginkgo leaf extract products were the number one top-selling herbal dietary supplement in US food, drug, and mass-market retail outlets.86 According to SPINS and AC Nielsen, sales of ginkgo products in the US equaled US $47 million in 2002.87 US ginkgo leaf production, in the State of South Carolina, is second only to China, where the ginkgo tree is native. Garnay, Inc. operates a 1,200 acre ginkgo plantation in Sumter, South Carolina with 12 million ginkgo trees.

2.1.11 Hop strobile

According to the USDA National Hop Report, hops production in 2002 totaled 26.4 million kg, down 13% from the 2001 crop of 30.3 million kg, and 14% below the 2000 production of 30.7 million kg. The NASS table below, however, shows total 2002 production at 56.4 million lbs (= 25.6 million kg). All three hop-producing States (Washington, Oregon, Idaho) reduced their acreage in 2002. There was a 6,000 acre drop in Washington due to a grower sponsored, voluntary, acreage reduction program. Washington growers produced 74% of the US hops crop for 2002. The US is the world’s second largest producer of hops. Germany is number one and China is number three. The Hop Growers Association is calling on growers in both Europe and America to not grow any hops that are not already sold and not to speculate by growing hops for the spot market in 2003. Surplus inventories need to be brought down in order for a significant correction to occur in 2003.

Popular, clinically tested hop—containing dietary supplements in the US include Alluna™ Sleep (GlaxoSmithKline, Pittsburgh, PA) and Bioforce® St. John’s Wort Complex (Bioforce AG, Roggwil, Switzerland). Hops are also used in aromatherapy products (e.g. dream pillows), bath products (e.g. Kneipp® Hops Herbal Bath), cosmetics (e.g. Nature’s Gate® Rainwater Herbal Shampoos; Weleda Iris Intensive Treatment Masque), and homeopathic drugs (e.g. B&T® Insomnia Chewables).

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Year</th>
<th>State</th>
<th>Area, Yield, Production, Price per Unit, and Value of Production</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Harvested</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>acre</td>
</tr>
<tr>
<td>Hops</td>
<td>2002</td>
<td>ID</td>
<td>3385</td>
</tr>
<tr>
<td>Hops</td>
<td>2002</td>
<td>OR</td>
<td>5577</td>
</tr>
<tr>
<td>Hops</td>
<td>2002</td>
<td>WA</td>
<td>20320</td>
</tr>
<tr>
<td>Hops</td>
<td>2002</td>
<td>US</td>
<td>29282</td>
</tr>
</tbody>
</table>

SOURCE: USDA NASS Agricultural Statistics Data Base
2.1.12 Jojoba

Jojoba seed (*Simmondsia chinensis* (LINK) C.K. SCHNEID.) is a native plant of the Sonoran Desert in Arizona, California and Mexico, and US production occurs mainly in the State of Arizona, and to a much lesser extent in Southern California. Jojoba is cultivated on plantations but smaller amounts are also harvested as a by-product of desert fruit orchards (e.g. apricots, figs, grapes). There are about 40 jojoba growers in the US. Commercial jojoba plantations are also operating in Argentina (1,200 acres), Chile (18 acres), and Peru (140 acres), among other countries.

According to the Agricultural Research Service (ARS) of the USDA, about 1.46 million kg of jojoba seeds are harvested annually, from which jojoba oil is produced, representing a market value of US $30 million.

The Arizona Agricultural Statistics Service maintains production data for jojoba oil and the USDA Foreign Agricultural Service maintains export and import data. See both Tables below). The US Census Bureau groups jojoba farming under the NAICS sub-sector 111998 (All Other Miscellaneous Crop Farming).

About 80% of jojoba is used by the cosmetic industry (color cosmetics, hair and skin care formulations and other personal care product formulations). The Desert Whale Jojoba Company of Tucson, Arizona states that it operates the largest commercial jojoba plantation in the US. The Purcell Jojoba Company has 1,200 acres under cultivation in Bouse, Arizona and the Boston Jojoba Company also operates a 940 acre jojoba farm in Arizona (See Appendix II). About 90% of US-grown jojoba, which is used as a moisturizing ingredient in cosmetics and shampoos, is exported, mainly to cosmetic companies in Europe and Japan.

### Jojoba: Arizona Acreage and Production

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Jojoba</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harvested (Acres)</td>
<td>6,000</td>
<td>6,000</td>
<td>6,000</td>
<td>6,000</td>
<td>4,800</td>
<td>3,800</td>
<td>3,000</td>
</tr>
<tr>
<td>Production (1,000 Lbs)</td>
<td>1,800</td>
<td>1,800</td>
<td>1,800</td>
<td>1,800</td>
<td>1,525</td>
<td>1,140</td>
<td>900</td>
</tr>
</tbody>
</table>

**SOURCE:** Arizona Agricultural Statistics Service

### JANUARY - DECEMBER AND JANUARY - MARCH

<table>
<thead>
<tr>
<th>AREA/COUNTRIES OF DESTINATION</th>
<th>JANUARY - DECEMBER QUANTITIES</th>
<th>JANUARY - MARCH QUANTITIES</th>
<th>COMPARISONS</th>
<th>%CHNG</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WORLD TOTAL</strong></td>
<td>JOJOBA OIL MT</td>
<td>377.2</td>
<td>391.6</td>
<td>354.6</td>
</tr>
<tr>
<td>Total</td>
<td>MT</td>
<td>377.2</td>
<td>391.6</td>
<td>354.6</td>
</tr>
</tbody>
</table>

**SOURCE:** Department of Commerce, U.S. Census Bureau, Foreign Trade Statistics
2.1.13 Kava rhizome

In 2002, kava products were among the 15 top-selling herbal dietary supplements in US food, drug, and mass market retail outlets.\(^9\)

US production of kava rhizome (\textit{Piper methysticum} G. FORST.) occurs only in the State of Hawaii, where, as of December 2001, there were 65 farms cultivating kava. The Hawaii Agricultural Statistics Service (HASS) maintains production data on cultivated kava, and estimated farm revenues from the sale of kava at US $585,000 in 2001 were nearly five times the farm value recorded in 2000. According to the HASS, the boost in farm revenues was the result of a similar increase in farm production which totaled 204,119 kg (fresh weight basis) in 2001. Average farm prices declined 7\% to $2.87 per kg (average for fresh sales). An estimated 84,000 kava plants were in the ground as of December 31, 2001. Hawaii’s main competitors in the world kava market are the Pacific Island nations of Vanuatu and Fiji.\(^9\)

During 2002, however, bans on the use of kava took place in several countries around the world including Germany (formerly the largest kava importer), France, Japan, Canada, and Australia, among others, which has significantly impacted the world market for kava. Kava remains legal in the US, however, for use in dietary supplement products. The situation has been severe for producers and traders in Hawaii, whose kava exports to Europe had previously averaged about US $200,000 per month in 2001.\(^9\)

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of farms</th>
<th>Acreage (^1)</th>
<th>Total sales (^3)</th>
<th>Average farm price (^4)</th>
<th>Farm value (^5)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total (^2)</td>
<td>Harvested</td>
<td>1,000 pounds</td>
<td>Dollars per pound</td>
</tr>
<tr>
<td>2000</td>
<td>50</td>
<td>80</td>
<td>5</td>
<td>85</td>
<td>1.40</td>
</tr>
<tr>
<td>2001</td>
<td>65</td>
<td>70</td>
<td>35</td>
<td>450</td>
<td>1.30</td>
</tr>
</tbody>
</table>

\(^1\) Includes kava inter-planted with another crop. \(^2\) As of December 31. \(^3\) Fresh weight basis. Dried kava ('awa) sales were converted to a fresh-weight basis by multiplying by five. Includes all types of sales, including organic. \(^4\) Represents average farm price for fresh sales.

\textbf{SOURCE:} Hawaii Agricultural Statistics Service, Hawaii Department of Agriculture
2.1.14 Peppermint leaf and oil

The NASS maintains production data for peppermint leaf essential oil (see Table below). Over 90% of US peppermint leaf cultivation occurs in the Pacific Northwest States of Washington, Oregon and Idaho, followed by Indiana, Wisconsin, and Minnesota. Producing States have Market Orders Mint Boards, for example, the Wisconsin Mint Board represents nearly 50 licensed mint growers. The US produces more than 70% of the world’s mint supply.

In 2002, a total of 80,200 acres were harvested in the US, producing a total of 3,092,624 kg of peppermint oil, of which 2,565,400 kg were exported.

97–98% of peppermint leaf acreage is dedicated to the production of essential oil, which is used extensively in toothpaste and mouthwash products, as well as in candy, chewing gum, dietary supplement, liqueur, and OTC drug products. Only an estimated 2,000-2,500 acres of peppermint, or about 2-3% of US total acreage, is dedicated to dried leaf production for end use in herbal teas and other herbal dietary supplement products. Peppermint oil is marketed by 6 to 7 dealers (brokers) in the US, who act as middlemen, purchasing the oil from the growers, and selling to both domestic and international end users. Examples of major end users include Warner Lambert Company and the Colgate-Palmolive Company.

Popular, clinically tested, peppermint-containing dietary supplement products in the US include PhytoPharmaca Iberogast™ Tincture (manufactured by Steigerwald Arzneimittelwerk, Germany). Peppermint oil is also a component of a top-selling dietary supplement product marketed by GlaxoSmithKline, Remifemin® Menopause (Schaper and Brümmer GmbH & Co. KG, Germany). Three of the ten top-selling single-herb teas in the US are peppermint leaf teas marketed by various brands including Celestial Seasonings® (Boulder, CO) and Traditional Medicinals® (Sebastopol, CA). Peppermint oil is used in a wide range of natural cosmetic and beauty products, for example Burt's Bees Coconut Foot Creme (Burt's Bees, Inc., Durham, NC), Crudoleum® Shampoo (Edgar Cayce Products, Virginia Beach, VA), Dr. Bronner's PEPPERMINT Pure-Castile Soap (Dr. Bronner’s Magic Soaps, Escondido, CA), Nature’s Gate® Herbal Peppermint Toothpaste (Nature’s Gate, Chatsworth, CA), and Olbas® Massage Oil (Synpharma AG, Switzerland). Peppermint oil is also widely used in herbal OTC drug products such as Olbas® Cough Syrup and Ricola® Natural Herb Cough Drops (Ricola Ltd., Switzerland).

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Year</th>
<th>State</th>
<th>Area, Yield, Production, Price per Unit, and Value of Production</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Harvested</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>acres - thousand</td>
</tr>
<tr>
<td>Peppermint</td>
<td>2002</td>
<td>ID</td>
<td>17</td>
</tr>
<tr>
<td>Peppermint</td>
<td>2002</td>
<td>IN</td>
<td>9</td>
</tr>
<tr>
<td>Peppermint</td>
<td>2002</td>
<td>MI</td>
<td>1</td>
</tr>
<tr>
<td>Peppermint</td>
<td>2002</td>
<td>OR</td>
<td>24</td>
</tr>
<tr>
<td>Peppermint</td>
<td>2002</td>
<td>WA</td>
<td>24</td>
</tr>
<tr>
<td>Peppermint</td>
<td>2002</td>
<td>WI</td>
<td>5.2</td>
</tr>
<tr>
<td>Peppermint</td>
<td>2002</td>
<td>US</td>
<td>80.2</td>
</tr>
</tbody>
</table>

SOURCE: USDA NASS Agricultural Statistics Data Base
2.1.15 Saw palmetto fruit

Saw palmetto (**Serenoa repens** (W. BARTRAM) SMALL) is native to the Southeastern US, from South Carolina, Georgia, and Florida to southern Mississippi. Florida is the main producing State. In 2002, saw palmetto products were among the five top-selling herbal dietary supplements in US food, drug, and mass-market retail outlets.\(^9\)

The NASS does not yet maintain annual production data for saw palmetto fruit. In 2000, about 7,000 acres of wild-crafted saw palmetto fruit were certified organic, however, in 2001, no organic certification of wild saw palmetto acreage was renewed.\(^10\) The lack of organic certification for wild collected material in 2001 and 2002, however, is not an indicator of the total amount produced. A typical yield has been estimated at about 450 kg per acre, however yields can vary considerably.\(^11\)

The Florida Department of Agriculture and Consumer Services, Bureau of License and Bond, is responsible for the licensing of dealers in saw palmetto in the State of Florida. As of May 2003, there were eight bonded dealers of saw palmetto fruit licensed in Florida, accounting for a total amount of just over 200,000 kg; Bravo Greens, Inc. (De Leon Spring, FL), Earth Balance (North Port, FL), Four C’s Nursery (Palm Bay, FL), Gene McMillan Enterprises, Inc. (North Ft. Myers, FL), Native Technologies, Inc. (Fort Lauderdale, FL), North American Natural Resources, Inc. (Felda, FL), Plantation Medicinals, Inc. (Felda, FL), U.S. Nutraceuticals, L.L.C. (Eustis, FL).\(^12\)

Popular, clinically tested, saw palmetto fruit extract products in the US include Elusan® Prostate (Plantes & Médecines, a division of Pierre Fabre Medicament, Toulouse, France), ProstActive™ (Nature’s Way, Springville, UT) and Solaray® Guaranteed Potency Saw Palmetto (Nutraceutical Corp., Park City, Utah). Saw palmetto fruit extract is also used as a component of hair and skin care cosmetic products including topical hair solutions and transdermal body creams.
2.1.16 Tea leaf

In 2002, green tea leaf (*Camellia sinensis* (L.) KUNTZE) products were among the 20 top-selling herbal dietary supplements in US food, drug, and mass market retail outlets.

The NASS does not maintain production data for tea leaf cultivated in the US. The US Census Bureau groups tea leaf farming under the NAICS sub-sector 111998 (All Other Miscellaneous Crop Farming).

The only commercial tea plantation in the US is the 127-acre Charleston Tea Plantation in South Carolina, which has recently been purchased by the R.C. Bigelow Tea Company, one of the leading herbal tea companies in the US. In recent years, there have also been efforts to develop tea leaf cultivation in both Hawaii and Oregon.

Green tea leaf is widely used in dietary supplement products (e.g. herbal teas, dry extracts in tablets or capsules). Black tea and green tea products are offered by most of the leading herbal tea brands including Celestial Seasonings® (Boulder, CO), R.C. Bigelow Tea Company (Fairfield, CT), Traditional Medicinals® (Sebastopol, CA), Tazo Tea (Portland, OR), and Yogi Tea (Eugene, OR), among others. Popular, clinically tested tea leaf products include Exolise® Caps (Health From The Sun, Bedford, MA). Tea leaf and extract are also used as components of cosmetics including deodorant sticks, eye gels, facial masks, facial moisturizers, hand and body lotions, shampoos, conditioners and hair rinses, soaps, sunscreens, and toothpastes.
2.2 IMPORTS

2.2.1 Total imports

Table 2.1 shows the quantity and value of total US imports of natural ingredients that are used in cosmetics and dietary supplements covered in this Market Brief, sorted by HS Code, for the period 1997-2001. Please refer to the Product Description section of this Market Brief for a detailed listing of the specific natural ingredients that fall under these general HS Code headings. Table 2.2 shows the quantity and value of total US imports of natural ingredients in more detail for year 2002. For example, data is provided for each individual essential oil rather than a single total for all essential oils grouped under heading HS 3301.

It is important to note, however, that the statistics for 2001 and 2002 were obtained from two different database sources, and therefore, due to certain inconsistencies regarding which sub-headings were included under the general heading code (in only a few cases, for example HS 1211 and HS 1302), calculating a percentage change from 2001 to 2002 is somewhat confounded. For that reason, it may be more instructive to assess the previous five-year data, 1997 through 2001, for the purpose of trend analysis.

Additionally, two significant events took place in the US that had a negative impact on imports during 2002 (as well as late 2001), thus making comparisons between 2001 and 2002 skewed for the purpose of trend analysis. Following the terrorist attacks on 11 September 2002, port security was tightened up and new emergency regulations were enacted that made exporting to the US more complicated, and lead-times for getting materials released by customs at the ports of entry also increased due to new requirements. Also, during 2002, there was an extended shutdown of all West Coast US ports (Los Angeles, San Francisco, Oakland, Seattle), by the employers due to a labor dispute with the Unions, which caused imports of all goods to be held up, in some cases, for months.

The pre-2002 import data contained in this Market Brief was obtained from the COMTRADE database, which had not yet made available its 2002 data at the time this report was prepared. Therefore, 2002 import data was extrapolated from the US Department of Commerce database (for which only Jan-Dec 2002 and 1st quarter of 2003 data was available).

In some cases, referring to the COMTRADE database, it was difficult or not possible to break out quantities and values for certain sub-headings that are not relevant to the US cosmetics and/or dietary supplement ingredients trade (e.g. coca leaf and opium). Therefore the pre-2002 statistics may include some ingredients that are not relevant to the US cosmetics and/or dietary supplement ingredient trade. However, in the 2002 import data that was extrapolated from the US Department of Commerce database, it was possible to subtract out certain non-relevant sub-headings. For example, the 2002 import data for heading HS 0910 does not include bay leaf, curry, spice mixes or other spices, whereas the 2001 data includes these natural ingredients that are not, however, relevant to the cosmetics and/or dietary supplement ingredient trade. Also, the 2002 import data for HS 1211 does not include coca leaf or poppy straw, while the 2001 data does include these natural ingredients that are, however, only used in prescription drug products. Finally, the 2002 import data for HS 1302 does not include opium or pyrethrum, while the 2001 import data includes these natural ingredients that are not, however, used in cosmetics or dietary supplement products, but rather in prescription drugs and insecticides, respectively.

**Botanical raw materials**

During the late 1990’s, the US ranked as the world’s Nr. 3 country of import of medicinal herbs categorized under the HS
Code 1211, and ranked as the Nr. 4 country of export. During the five-year period 1997–2001, the top five suppliers of HS 1211 medicinal herbs to the US were China, India, Germany, Hong Kong, and Mexico. The HS trade classifications, however, place many high-demand medicinal herbs outside of HS 1211, for example ginger rhizome is grouped under HS 0910.

In 2002, the US imported 200,688,262 kg of botanical raw materials categorized separately under various HS Codes including HS 0902 (e.g. green tea leaf), HS 0903 (e.g. maté leaf), HS 0904.20 (e.g. capsicum fruit), HS 0909 (e.g. anise fruit, fennel fruit), HS 0910 (e.g. ginger rhizome, turmeric rhizome), HS 1210 (e.g. hop strobile), and HS 1211 (e.g. ginseng root, licorice root, peppermint leaf, psyllium husk, senna leaf), with a total value of US $331,813,000. When HS 1212.20 is added (seaweeds and other algae), the total quantity of botanical raw materials imported into the US in 2002 increases to 244,584,730 kg with a total value of US $373,453,000.

The top suppliers of botanical raw materials in 2002 were predominantly India and China, followed by Turkey, Mexico, Spain, Canada, Egypt, and Germany, among many others.

Value-added natural ingredients
Other natural ingredients categories imported for natural cosmetic and/or dietary supplement products, however, include such value-added forms as natural gums (HS 1301), mucilages, saps and herbal extracts (HS 1302), ground-nut oils (HS 1508), fixed vegetable oils (e.g. flaxseed oil, hemp oil and jojoba oil (HS 1515), beeswax and vegetable waxes (HS 1521), plant colorants like annatto seed (HS 3203), cocoa butter (HS 1804), as well as essential oils, resinoids and oleoresins including capsicum oleoresin (HS 3301).

In 2002, the US imported 32,205,814 kg of natural ingredients grouped under HS 3301 (essential oils, resinoids and/or oleoresins), up from 29,757,240 kg in 2001, with a total value of US $290,204,000, up from US $273,961,888 in 2001.

The top suppliers for essential oils and oleoresins in 2002 were France, India, Argentina, China, Brazil and Mexico, among others. Similarly, during the previous five-year period 1997–2001, the top five suppliers of essential oils and oleoresins to the US were France, India, Indonesia, China and Argentina.

Taking all of the relevant natural ingredient HS Codes into consideration, the total 2002 US import volume was 1,336,681,829 kg with a Customs Value of US $1,715,634,000 (See Table 2.2). The 2002 natural ingredients import quantity and value is somewhat lower than for the previous five-year totals, however, the possible reasons for the drop have been discussed earlier in this section.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>QUANTITY (kg)</th>
<th>VALUE (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>1,563,471,927</td>
<td>2,741,172,069</td>
</tr>
<tr>
<td>1998</td>
<td>1,597,555,195</td>
<td>2,940,862,198</td>
</tr>
<tr>
<td>1999</td>
<td>1,395,050,744</td>
<td>2,666,451,525</td>
</tr>
<tr>
<td>2000</td>
<td>1,516,773,266</td>
<td>2,575,584,951</td>
</tr>
<tr>
<td>2001</td>
<td>1,570,595,986</td>
<td>2,297,793,910</td>
</tr>
<tr>
<td>2002</td>
<td>1,336,681,829</td>
<td>1,715,634,000</td>
</tr>
</tbody>
</table>

Caution must be exercised, however, when applying this data towards any determination of the total quantity and value of imported natural ingredients that are dedicated solely to an end-use in natural cosmetics and/or dietary supplements. While some portion of these natural ingredients are used in the cosmetic and/or dietary supplement trade, an unknown portion is also used in several other product categories including conventional-, health- and/or functional-food products, alcoholic- and/or non-alcoholic beverages, conventional- and/or homeopathic- over-the-counter (OTC) or prescription drug products, and tobacco products, among others.
### TABLE 2.1 US IMPORTS OF NATURAL INGREDIENTS, 1997–2001, BY HS CODE

(Q: kilograms – V: USD $)

<table>
<thead>
<tr>
<th></th>
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</thead>
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<td>Q</td>
<td>V</td>
<td>Q</td>
<td>V</td>
<td>Q</td>
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<tr>
<td>TOTAL</td>
<td>1,563,471,927</td>
<td>2,741,172,066</td>
<td>1,597,555,195</td>
<td>2,940,862,198</td>
<td>1,395,050,744</td>
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<td>350,966</td>
<td>704,230</td>
<td>431,280</td>
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<tr>
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<td>29,688,356</td>
<td>62,651,148</td>
<td>31,383,148</td>
<td>64,331,032</td>
<td>34,355,040</td>
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<tr>
<td>HS 1210</td>
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<td>33,455,090</td>
<td>5,004,604</td>
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<td>30,081,690</td>
<td>9,633,005</td>
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<td>83,313,168</td>
<td>111,174,080</td>
<td>89,104,288</td>
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<tr>
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<td>80,929,000</td>
<td>117,481,016</td>
<td>101,053,808</td>
<td>98,576,432</td>
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<td>30,204,536</td>
<td>6,187,993</td>
<td>23,122,652</td>
<td>7,445,923</td>
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<tr>
<td>HS 1804</td>
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<td>65,307,016</td>
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<td>80,475,568</td>
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<tr>
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<td>54,460,772</td>
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<td>48,622,328</td>
<td>6,166,268</td>
<td>53,911,500</td>
<td>7,240,298</td>
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<td>277,589,632</td>
<td>31,098,568</td>
<td>300,917,568</td>
<td>27,029,204</td>
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</table>

Source: COMTRADE Database, United Nations Statistics Division
<table>
<thead>
<tr>
<th>HS Code</th>
<th>Natural Ingredient Name</th>
<th>Q</th>
<th>V</th>
</tr>
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<tbody>
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<td>Green tea leaf</td>
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<td>Maté leaf</td>
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<td>Paprika fruit (Capsicum)</td>
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<tr>
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<td>Anise fruit or badian</td>
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<td>Coriander fruit</td>
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<td>Cumin seed</td>
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<tr>
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<td>Caraway fruit</td>
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<td>Turmeric rhizome (Curcuma)</td>
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<td>Mint leaf, crushed or powdered</td>
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<td>Ground-nut oil, refined</td>
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<td></td>
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<tr>
<td>3301.29.5019</td>
<td>Lemongrass leaf essential oil</td>
<td>40,436</td>
<td>604</td>
</tr>
<tr>
<td>3301.29.5021</td>
<td>Linaloe or Bois de Rose essential oil</td>
<td>16,140</td>
<td>363</td>
</tr>
<tr>
<td>3301.29.5025</td>
<td>Nutmeg essential oil</td>
<td>281,219</td>
<td>12,490</td>
</tr>
<tr>
<td>3301.29.5028</td>
<td>Onion essential oil</td>
<td>28,636</td>
<td>938</td>
</tr>
<tr>
<td>3301.29.5029</td>
<td>Patchouli essential oil</td>
<td>240,778</td>
<td>6,102</td>
</tr>
<tr>
<td>3301.29.5033</td>
<td>Petitgrain essential oil</td>
<td>65,329</td>
<td>1,772</td>
</tr>
<tr>
<td>3301.29.5035</td>
<td>Rose flower essential oil</td>
<td>3,931,134</td>
<td>3,526</td>
</tr>
<tr>
<td>3301.29.5037</td>
<td>Rosemary leaf essential oil</td>
<td>99,319</td>
<td>1,635</td>
</tr>
<tr>
<td>3301.29.5039</td>
<td>Sandalwood essential oil</td>
<td>30,981</td>
<td>7,852</td>
</tr>
<tr>
<td>3301.29.5041</td>
<td>Sassafras essential oil</td>
<td>87,120</td>
<td>542</td>
</tr>
<tr>
<td>3301.29.5043</td>
<td>Ylang ylang or cananga essential oil</td>
<td>35,969</td>
<td>1,359</td>
</tr>
<tr>
<td>3301.29.5050</td>
<td>Other essential oils (except Citrus), NESOI</td>
<td>3,049,601</td>
<td>57,739</td>
</tr>
<tr>
<td>3301.30.0000</td>
<td>Resinous</td>
<td>231,909</td>
<td>4,627</td>
</tr>
<tr>
<td>3301.90.1010</td>
<td>Capsicum (paprika) oleoresin</td>
<td>374,956</td>
<td>6,772</td>
</tr>
<tr>
<td>3301.90.1020</td>
<td>Black pepper oleoresin</td>
<td>393,361</td>
<td>5,112</td>
</tr>
<tr>
<td>3301.90.1050</td>
<td>Other extracted oleoresins, NESOI</td>
<td>758,730</td>
<td>9,997</td>
</tr>
<tr>
<td>3301.90.5000</td>
<td>Other concretes &amp; absolutes; concentrates,</td>
<td>1,755,984</td>
<td>9,446</td>
</tr>
<tr>
<td></td>
<td>terpenic by-products, aqueous distillates and</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>aqueous solutions of essential oils, NESOI</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TOTAL 1,336,681,829 kg $1,715,634,000
2.2.2 Imports by product group

Table 2.3 provides an overview of US imports of selected natural ingredients that are used in the manufacture of cosmetic and/or dietary supplement products, with an emphasis on ingredients that are presently supplied, in part, by producers in the Andean nations. See Appendix I for more detailed import/export data 1998-2002 for these product groups.

Table 2.3 Imports by US of selected natural ingredients used in cosmetics and/or dietary supplements, with a focus on suppliers in South America, 2002, US$ / Kilograms / Top Suppliers

<table>
<thead>
<tr>
<th>Natural Ingredient</th>
<th>Value US$</th>
<th>Volume (kg)</th>
<th>Top Suppliers to US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agar-agar</td>
<td>$15,139,000</td>
<td>982,817</td>
<td>Chile, Morocco, Spain, China, Mexico</td>
</tr>
<tr>
<td>Capsicum fruit</td>
<td>$20,819,000</td>
<td>12,405,921</td>
<td>Spain, Peru, South Africa, Chile</td>
</tr>
<tr>
<td>Cocoa butter, fat and oil</td>
<td>$136,561,000</td>
<td>54,788,302</td>
<td>Indonesia, Malaysia, Brazil, China, Mexico, Singapore, Ghana, Thailand, Peru,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Dominican Republic, Philippines, Colombia, Ecuador</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ivory Coast, Venezuela</td>
</tr>
<tr>
<td>Coloring matter</td>
<td>$44,022,000</td>
<td>48,037,778</td>
<td>Mexico, Ivory Coast, Ghana, Peru, Brazil</td>
</tr>
<tr>
<td>Garlic oil</td>
<td>$1,012,000</td>
<td>63,332</td>
<td>China, Colombia, Mexico</td>
</tr>
<tr>
<td>Ginger rhizome</td>
<td>$12,840,000</td>
<td>21,224,952</td>
<td>China, Brazil, Thailand, Costa Rica, India, Nicaragua, Australia, Hong Kong, Ecuador</td>
</tr>
<tr>
<td>Jojoba oil</td>
<td>$1,906,000</td>
<td>288,017</td>
<td>Mexico, Peru, Argentina, Israel</td>
</tr>
<tr>
<td>Lemon oil</td>
<td>$46,077,000</td>
<td>3,417,642</td>
<td>Argentina, Mexico, Ireland, Canada, Brazil</td>
</tr>
<tr>
<td>Lime oil</td>
<td>$14,858,000</td>
<td>998,996</td>
<td>Mexico, Peru, UK, Brazil</td>
</tr>
<tr>
<td>Maté leaf</td>
<td>$1,456,000</td>
<td>1,050,604</td>
<td>Argentina, Brazil, Antigua and Barbuda, Paraguay, Uruguay, Peru</td>
</tr>
<tr>
<td>Petitgrain oil</td>
<td>$1,772,000</td>
<td>65,329</td>
<td>Paraguay, France, Spain, Egypt, Uruguay</td>
</tr>
<tr>
<td>Sassafras oil</td>
<td>$542,000</td>
<td>87,120</td>
<td>China, Colombia, Vietnam</td>
</tr>
</tbody>
</table>

Botanical raw materials

Table 2.4 shows the leading suppliers to the US in 2002 of selected botanical raw materials that are used in cosmetics and/or dietary supplement products. See Appendix I for more detailed import/export data 1998-2002 for these product groups.

Table 2.4 US Imports of selected botanical raw materials used in cosmetics and/or dietary supplements, 2002, Top Suppliers / Volume (kg)

<table>
<thead>
<tr>
<th>Natural Ingredient</th>
<th>Top Suppliers</th>
<th>Volume (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cayenne fruit</td>
<td>Spain</td>
<td>5,100,796</td>
</tr>
<tr>
<td></td>
<td>Peru</td>
<td>3,465,830</td>
</tr>
<tr>
<td></td>
<td>South Africa</td>
<td>1,540,011</td>
</tr>
<tr>
<td></td>
<td>Chile</td>
<td>734,880</td>
</tr>
<tr>
<td>Ginger rhizome</td>
<td>China</td>
<td>13,138,936</td>
</tr>
<tr>
<td></td>
<td>Brazil</td>
<td>2,366,639</td>
</tr>
<tr>
<td></td>
<td>Thailand</td>
<td>2,178,923</td>
</tr>
<tr>
<td></td>
<td>Costa Rica</td>
<td>1,287,528</td>
</tr>
<tr>
<td>Ginseng root, Asian</td>
<td>China</td>
<td>67,123</td>
</tr>
<tr>
<td></td>
<td>Hong Kong</td>
<td>12,460</td>
</tr>
<tr>
<td>Green tea leaf</td>
<td>China</td>
<td>5,889,989</td>
</tr>
<tr>
<td></td>
<td>India</td>
<td>350,018</td>
</tr>
<tr>
<td></td>
<td>Taiwan</td>
<td>190,999</td>
</tr>
<tr>
<td></td>
<td>Brazil</td>
<td>169,807</td>
</tr>
<tr>
<td>Hop strobile</td>
<td>Germany</td>
<td>2,107,165</td>
</tr>
<tr>
<td></td>
<td>France</td>
<td>762,299</td>
</tr>
<tr>
<td></td>
<td>Australia</td>
<td>229,185</td>
</tr>
<tr>
<td>Licorice root</td>
<td>Turkmenistan</td>
<td>5,301,068</td>
</tr>
<tr>
<td></td>
<td>Azerbaijan</td>
<td>4,300,033</td>
</tr>
<tr>
<td></td>
<td>Uzbekistan</td>
<td>1,125,363</td>
</tr>
<tr>
<td></td>
<td>Afghanistan</td>
<td>425,909</td>
</tr>
<tr>
<td>Maté leaf</td>
<td>Argentina</td>
<td>567,475</td>
</tr>
<tr>
<td></td>
<td>Brazil</td>
<td>312,480</td>
</tr>
<tr>
<td></td>
<td>Antigua and Barbuda</td>
<td>67,999</td>
</tr>
<tr>
<td></td>
<td>Paraguay</td>
<td>59,849</td>
</tr>
<tr>
<td>Mint leaf (Peppermint &amp; Spearmint)</td>
<td>Egypt</td>
<td>98,361</td>
</tr>
<tr>
<td></td>
<td>China</td>
<td>63,336</td>
</tr>
<tr>
<td></td>
<td>Mexico</td>
<td>50,288</td>
</tr>
<tr>
<td></td>
<td>Germany</td>
<td>30,795</td>
</tr>
<tr>
<td>Psyllium seed husks</td>
<td>India</td>
<td>11,464,991</td>
</tr>
<tr>
<td></td>
<td>Albania</td>
<td>18,054</td>
</tr>
<tr>
<td></td>
<td>New Zealand</td>
<td>14,968</td>
</tr>
<tr>
<td>Other medicinal herbs used mainly in herbal teas (other than mint)</td>
<td>China</td>
<td>1,555,688</td>
</tr>
<tr>
<td></td>
<td>Germany</td>
<td>1,175,115</td>
</tr>
<tr>
<td></td>
<td>Mexico</td>
<td>725,768</td>
</tr>
<tr>
<td></td>
<td>Brazil</td>
<td>438,467</td>
</tr>
<tr>
<td></td>
<td>Chile</td>
<td>424,536</td>
</tr>
<tr>
<td>Other medicinal herbs used mainly in perfumery and pharmacy</td>
<td>China</td>
<td>4,511,198</td>
</tr>
<tr>
<td></td>
<td>India</td>
<td>2,210,015</td>
</tr>
<tr>
<td></td>
<td>Mexico</td>
<td>1,539,833</td>
</tr>
<tr>
<td></td>
<td>Morocco</td>
<td>622,769</td>
</tr>
<tr>
<td></td>
<td>Thailand</td>
<td>502,254</td>
</tr>
</tbody>
</table>

Seaweeds and other algae

In 2002, the US imported seaweeds and other algae mainly from Mexico (22,374,153 kg), Tanzania (4,889,814 kg), Canada (4,304,909 kg), the Philippines (3,111,303 kg), Chile (2,528,952 kg), Indonesia (1,951,111 kg), China (1,377,955 kg), Japan (930,810 kg), South Korea (906,117 kg), Norway (375,720 kg), the UK (361,377 kg), Peru (287,300 kg), Ireland (221,840 kg), and smaller amounts from many other countries. See Appendix I for more detailed import/export quantity and value data 1998-2002 for these product groups.

Lac, natural gums, resins, gum-resins and oleoresins (balsams)

Table 2.5 shows the leading suppliers to the US in 2002 of selected lacs, natural gums and resins that are used in cosmetics and/or dietary supplement products. See Appendix I for more detailed import/export quantity and value data 1998-2002 for these product groups.

Table 2.5 US Imports of selected lacs, natural gums and resins that are used in cosmetics and/or dietary supplements, 2002, Top Suppliers / Volume (kg)

<table>
<thead>
<tr>
<th>Natural Ingredient</th>
<th>Top Suppliers</th>
<th>Volume (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balsams</td>
<td>France</td>
<td>140,314</td>
</tr>
<tr>
<td></td>
<td>Brazil</td>
<td>32,992</td>
</tr>
<tr>
<td></td>
<td>India</td>
<td>30,503</td>
</tr>
<tr>
<td>Gum arabic</td>
<td>Chad</td>
<td>6,173,764</td>
</tr>
<tr>
<td></td>
<td>France</td>
<td>5,993,081</td>
</tr>
<tr>
<td></td>
<td>Sudan</td>
<td>1,170,000</td>
</tr>
<tr>
<td></td>
<td>UK</td>
<td>920,764</td>
</tr>
<tr>
<td>Karaya natural gum</td>
<td>UK</td>
<td>164,845</td>
</tr>
<tr>
<td></td>
<td>India</td>
<td>131,475</td>
</tr>
<tr>
<td>Seed lac</td>
<td>Thailand</td>
<td>1,104,436</td>
</tr>
<tr>
<td></td>
<td>India</td>
<td>196,625</td>
</tr>
<tr>
<td></td>
<td>UK</td>
<td>41,551</td>
</tr>
<tr>
<td></td>
<td>Cyprus</td>
<td>37,506</td>
</tr>
<tr>
<td>Tragacanth natural gum</td>
<td>UK</td>
<td>33,369</td>
</tr>
<tr>
<td>Other natural gums, resins and gum resins</td>
<td>India</td>
<td>2,801,415</td>
</tr>
<tr>
<td></td>
<td>China</td>
<td>76,686</td>
</tr>
<tr>
<td></td>
<td>Spain</td>
<td>65,616</td>
</tr>
<tr>
<td></td>
<td>Indonesia</td>
<td>58,901</td>
</tr>
</tbody>
</table>

Vegetable saps, herbal extracts, pectic substances, mucilages & thickeners

Table 2.6 shows the leading suppliers to the US in 2002 of selected vegetable saps, herbal extracts, pectic substances, mucilages & thickeners that are used in cosmetics and/or dietary supplement products. See Appendix I for more detailed import/export quantity and value data 1998-2002 for these product groups.

<table>
<thead>
<tr>
<th>Natural Ingredient</th>
<th>Top Suppliers</th>
<th>Volume (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agar-agar</td>
<td>Chile</td>
<td>390,246</td>
</tr>
<tr>
<td></td>
<td>Morocco</td>
<td>175,400</td>
</tr>
<tr>
<td></td>
<td>Spain</td>
<td>129,551</td>
</tr>
<tr>
<td></td>
<td>China</td>
<td>99,625</td>
</tr>
<tr>
<td>Carrageenan</td>
<td>Philippines</td>
<td>2,743,197</td>
</tr>
<tr>
<td></td>
<td>Denmark</td>
<td>1,464,468</td>
</tr>
<tr>
<td></td>
<td>Canada</td>
<td>928,890</td>
</tr>
<tr>
<td></td>
<td>France</td>
<td>797,622</td>
</tr>
<tr>
<td>Cashew nut shell liquid</td>
<td>India</td>
<td>5,000,000</td>
</tr>
<tr>
<td></td>
<td>Brazil</td>
<td>2,420,467</td>
</tr>
<tr>
<td>Ginseng root extract</td>
<td>China</td>
<td>678,230</td>
</tr>
<tr>
<td></td>
<td>Hong Kong</td>
<td>63,729</td>
</tr>
<tr>
<td></td>
<td>South Korea</td>
<td>29,858</td>
</tr>
<tr>
<td>Guar seed mucilage</td>
<td>India</td>
<td>28,478,209</td>
</tr>
<tr>
<td></td>
<td>Pakistan</td>
<td>6,788,196</td>
</tr>
<tr>
<td></td>
<td>China</td>
<td>503,928</td>
</tr>
<tr>
<td>Hop strobile extract</td>
<td>Australia</td>
<td>10,750</td>
</tr>
<tr>
<td></td>
<td>Germany</td>
<td>8,793</td>
</tr>
<tr>
<td>Licorice root extract</td>
<td>China</td>
<td>3,411,715</td>
</tr>
<tr>
<td></td>
<td>Uzbekistan</td>
<td>699,500</td>
</tr>
<tr>
<td></td>
<td>Israel</td>
<td>276,671</td>
</tr>
<tr>
<td></td>
<td>Turkmenistan</td>
<td>240,433</td>
</tr>
<tr>
<td>Locust bean mucilage</td>
<td>Spain</td>
<td>1,457,838</td>
</tr>
<tr>
<td></td>
<td>Italy</td>
<td>471,145</td>
</tr>
<tr>
<td></td>
<td>Morocco</td>
<td>185,914</td>
</tr>
<tr>
<td>Other vegetable saps and herbal</td>
<td>Mexico</td>
<td>4,704,206</td>
</tr>
<tr>
<td>extracts</td>
<td>China</td>
<td>886,855</td>
</tr>
<tr>
<td></td>
<td>France</td>
<td>477,697</td>
</tr>
<tr>
<td></td>
<td>India</td>
<td>330,951</td>
</tr>
<tr>
<td>Other vegetable mucilages and</td>
<td>Ireland</td>
<td>117,572</td>
</tr>
<tr>
<td>thickeners</td>
<td>UK</td>
<td>108,392</td>
</tr>
<tr>
<td></td>
<td>India</td>
<td>54,636</td>
</tr>
<tr>
<td></td>
<td>Peru</td>
<td>42,000</td>
</tr>
<tr>
<td>Pectic substances</td>
<td>Denmark</td>
<td>1,666,755</td>
</tr>
<tr>
<td></td>
<td>Mexico</td>
<td>1,642,279</td>
</tr>
<tr>
<td></td>
<td>Germany</td>
<td>1,114,349</td>
</tr>
<tr>
<td></td>
<td>France</td>
<td>414,976</td>
</tr>
</tbody>
</table>

Ground-nut oil

In 2002, the US imported crude ground-nut oil mainly from Argentina (24,361,915 kg), Nicaragua (3,559,101 kg), Canada (1,820,215 kg), and refined ground-nut oil mainly from Germany (1,048,489 kg). See Appendix I for more detailed import/export quantity and value data 1998-2002 for these product groups.

Coconut oil, palm kernel or babassu oil

In 2002, crude coconut oil was imported mainly from the Philippines (257,092,803 kg), Indonesia (52,563,551 kg), and Malaysia (6,313,966 kg) and refined coconut oil also mainly from the Philippines (135,907,769 kg), Indonesia (27,087,047 kg), and Malaysia (4,498,926 kg). Crude palm kernel oil or babassu oil were imported mainly from Malaysia (19,481,397 kg) and Indonesia (5,012,008 kg), and refined palm kernel oil or babassu oil were imported mainly from Malaysia (138,349,662 kg), Indonesia (8,492,100 kg), and the Philippines (1,490,231 kg). See Appendix I for more detailed import/export quantity and value data 1998-2002 for these product groups.

Other fixed vegetable fats and oils and their fractions (including castor oil, flaxseed oil, jojoba oil, and hemp oil)

Table 2.7 shows the leading suppliers to the US in 2002 of selected fixed vegetable fats and oils that are used in cosmetics and/or dietary supplement products. See Appendix I for more detailed import/export quantity and value data 1998-2002 for these product groups.

Table 2.7    US Imports of selected fixed vegetable fats and oils that are used in cosmetics and/or dietary supplements, 2002, Top Suppliers / Volume (kg)

<table>
<thead>
<tr>
<th>Natural Ingredient</th>
<th>Top Suppliers</th>
<th>Volume (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Castor oil</strong></td>
<td>India</td>
<td>27,524,914</td>
</tr>
<tr>
<td></td>
<td>Brazil</td>
<td>4,747,785</td>
</tr>
<tr>
<td><strong>Flaxseed oil (crude &amp; refined)</strong></td>
<td>Canada</td>
<td>5,580,075</td>
</tr>
<tr>
<td></td>
<td>Australia</td>
<td>92,943</td>
</tr>
<tr>
<td></td>
<td>UK</td>
<td>65,260</td>
</tr>
<tr>
<td></td>
<td>Netherlands</td>
<td>50,350</td>
</tr>
<tr>
<td><strong>Hemp oil</strong></td>
<td>Switzerland</td>
<td>164,436</td>
</tr>
<tr>
<td></td>
<td>UK</td>
<td>21,965</td>
</tr>
<tr>
<td></td>
<td>South Africa</td>
<td>15,280</td>
</tr>
<tr>
<td></td>
<td>Canada</td>
<td>12,852</td>
</tr>
<tr>
<td><strong>Jojoba oil</strong></td>
<td>Mexico</td>
<td>102,151</td>
</tr>
<tr>
<td></td>
<td>Peru</td>
<td>63,404</td>
</tr>
<tr>
<td></td>
<td>Argentina</td>
<td>62,126</td>
</tr>
<tr>
<td></td>
<td>Israel</td>
<td>48,005</td>
</tr>
</tbody>
</table>

Hydrogenated vegetable fats and oils and their fractions

In 2002, the US imported canola oil mainly from Canada (72,835,066 kg). Vegetable fats and oils (other than canola) were also imported mainly from Canada (18,275,049 kg), as well as from India (2,704,483 kg) and Brazil (2,388,275 kg), and smaller amounts from many other countries. See Appendix I for more detailed import/export quantity and value data 1998-2002 for these product groups.

Vegetable waxes and insect waxes (beeswax)

In 2002, the US imported candelilla wax mainly from Mexico (456,267 kg), carnauba wax mainly from Brazil (4,016,550 kg), and other vegetable waxes mainly from China (96,030 kg), Japan (21,705 kg), Malaysia (16,000 kg), and Indonesia (10,000 kg). Bleached beeswax was imported mainly from Germany (86,180 kg) and Canada (25,602 kg) and unbleached beeswax (and other insect waxes) was imported mainly from China (299,282 kg), Canada (293,963 kg), Argentina (234,566 kg), Australia (107,336 kg), and smaller amounts from many other countries. See Appendix I for more detailed import/export quantity and value data 1998-2002 for these product groups.

Cocoa butter, fat and oil

In 2002, the US imported cocoa butter, fat and oil mainly from Indonesia (14,612,200 kg), Malaysia (10,835,405 kg), Brazil (8,230,491 kg), China (4,099,700 kg), Mexico (2,840,155 kg), Singapore (2,547,813 kg), Ghana (2,207,204 kg), Thailand (1,840,000 kg), Peru (1,240,000 kg), Dominican Republic (988,039 kg), the Philippines (939,940 kg), Colombia (939,850 kg), the Netherlands (851,050 kg), Ecuador (640,000 kg), Ivory Coast (580,819 kg), Venezuela (360,000 kg), Costa Rica (345,877 kg), Honduras (340,000 kg), and smaller amounts from many other countries. See Appendix I for more detailed import/export quantity and value data 1998-2002 for these product groups.

Tea leaf and maté leaf extracts, essences and concentrates

In 2002, the US imported tea leaf and/or maté leaf extracts, essences and concentrates mainly from India (1,594,331 kg), Japan (864,605 kg), Chile (604,293 kg), Kenya (530,366 kg), China (274,049 kg), Sri Lanka (114,912 kg), Brazil (107,862 kg), and smaller amounts from many other countries. See Appendix I for more detailed import/export quantity and value data 1998-2002 for these product groups.

Colouring matter of vegetable (annato) or animal (cochineal) origin

In 2002, the US imported colouring matter of vegetable or animal origin (annato, archil, cochineal, cudbear, litmus, logwood and marigold meal) mainly from the Ivory Coast (827,083 kg), Ghana (453,453 kg), Peru (291,024 kg), Guatemala (164,105 kg), Dominican Republic (105,082 kg), Brazil (92,653 kg), and smaller amounts from many other countries.

Other colouring matter of vegetable or animal origin (NESOI) were imported mainly from Mexico (1,062,603 kg), the Netherlands (266,572 kg), France (194,007 kg), Brazil (187,217 kg), Spain (174,466 kg), Italy (146,080 kg), Australia (131,850 kg), and smaller amounts from many other countries. See Appendix I for more detailed import/export quantity and value data 1998-2002 for these product groups.
Essential oils (terpeneless or not), including concretes and absolutes; resinoids; extracted oleoresins; concentrates of essential oils

Table 2.8 shows the leading suppliers to the US in 2002 of selected essential oils and oleoresins that are used in cosmetics and/or dietary supplement products. Table 2.9 show US imports of essential oils from the 35 leading suppliers 1998-2002. About two-thirds of total essential oil imports to the US come from just eight countries; France, India, Argentina, China, Brazil, Mexico, Indonesia, and Canada. See Appendix I for more detailed import/export quantity and value data 1998-2002 for these product groups.

<table>
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<tr>
<th>Natural Ingredient</th>
<th>Top Suppliers</th>
<th>Volume (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capsicum oleoresin</td>
<td>India, Spain, Morocco, South Africa</td>
<td>174,453, 160,482, 26,176, 8,000</td>
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<tr>
<td>Eucalyptus oil</td>
<td>China, Brazil, Taiwan, Germany</td>
<td>631,689, 51,300, 50,210, 39,223</td>
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<tr>
<td>Lavender oil</td>
<td>France, Spain, Belgium, Bulgaria</td>
<td>414,024, 6,399, 5,900, 5,729</td>
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<tr>
<td>Lemon oil</td>
<td>Argentina, Mexico, Ireland, Canada</td>
<td>2,301,879, 173,839, 134,400, 120,352</td>
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<tr>
<td>Lime oil</td>
<td>Mexico, Peru, UK, Brazil</td>
<td>677,356, 117,951, 84,820, 72,115</td>
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<tr>
<td>Orange oil</td>
<td>Brazil, Costa Rica, Mexico, Canada</td>
<td>7,791,989, 822,775, 758,477, 429,872</td>
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<td>Other citrus oils</td>
<td>Italy, China, Mexico, Brazil</td>
<td>183,325, 150,441, 63,000, 33,020</td>
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<tr>
<td>Peppermint oil</td>
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<td>395,863, 54,062, 25,684, 14,388</td>
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<td>Rose oil</td>
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<td>Spearmint oil</td>
<td>China, India, Canada, Italy</td>
<td>308,917, 144,940, 106,995, 4,368</td>
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<td>10,846</td>
<td>11,978</td>
<td>10,287</td>
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</tbody>
</table>

IMPORT CONCENTRATION RATIOS (% OF TOTAL)

| TOP MARKET | 14 | 14 | 14 | 13 | 13 |
| TOP 4 MARKETS | 39 | 41 | 39 | 40 |
| TOP 8 MARKETS | 65 | 64 | 65 | 64 |
2.3 Exports

Table 2.10 shows total US exports of natural ingredients for 2001 and 2002, sorted by HS Code. Please refer to the Product Description section of this Market Brief for a listing of the specific natural ingredients that fall under these general HS Code headings. For the natural ingredients covered in this Market Brief, in 2002, the US exported a total of 917,787,828 kg with a total FAS Value of US $1,323,451,000, up just over 1% in value from total 2001 exports, which were valued at US$ 1,309,094,879, representing 836,520,004 kg of natural ingredients.

It is important to note, however, that the statistics for 2001 and 2002 were obtained from two different database sources, and therefore, due to certain inconsistencies (in only a few cases, e.g. HS 1211 and HS 1302), regarding which sub-headings were included under the general heading code, the growth percentage is likely to be slightly greater than 1%.

The pre-2002 export data contained in this Market Brief was obtained from the COMTRADE database, which had not yet made available its 2002 data at the time this report was prepared. Therefore, 2002 export data was extrapolated from the US Department of Commerce database. In some cases, referring to the COMTRADE database, it was difficult or not possible to break out quantities and values for certain sub-headings that are not relevant to the US cosmetics and/or dietary supplement ingredients trade (e.g. coca leaf and opium). Therefore the pre-2002 statistics may include some ingredients that are not relevant to the US cosmetics and/or dietary supplement ingredient trade. Also, the 2002 export data for HS 1211 does not include coca leaf or poppy straw, while the 2001 data does include these natural ingredients that are only used in prescription drug products. Finally, the 2002 export data for HS 1302 does not include opium or pyrethrum, while the 2001 export data includes these natural ingredients that are not, however, used in cosmetics or dietary supplement products, but rather in prescription drugs and insecticides, respectively.

Worth noting is that exports of category HS 1515, which includes castor oil, corn oil, flaxseed oil, jojoba oil, and nut oils, etc., increased significantly from a 2001 FAS Value of US $307,503,456 to a 2002 FAS value of US $402,597,000. Significant increases in exports for category HS 1516.20, which includes canola oil and other hydrogenated vegetable fats and oil, also took place increasing from a 2001 FAS Value of US $87,347,120, up to a 2002 FAS value of US $105,065,000.

Exports of natural ingredients grouped under heading HS 1211, the category that includes many medicinal herbs that are used primarily in perfumery and pharmacy (e.g. ginseng, licorice, peppermint), appears to have dropped from a 2001 value of US $78,890,752 to a 2002 value of US $69,888,000. However, the actual drop in this category is confounded by the fact that the 2002 data had certain drug materials such as coca and poppy subtracted out. Highlights under HS 1211 include exports of American ginseng root (cultivated and wild), which was exported mainly to Hong Kong (242,574 kg), China (171,781 kg), Canada (19,964 kg), the UK (16,820 kg), South Africa (13,136 kg), and smaller amounts to many other countries. Licorice root was mainly re-exported to the UK (92,538 kg), Hong Kong (75,342 kg), Canada (64,729 kg), Japan (28,744 kg), and smaller amounts to other countries (Note: There is no commercial cultivation of licorice root in the US, so these are apparently re-exports). Miscellaneous medicinal herbs
(other than mint leaf) that are used primarily as herbal teas were exported mainly to Ireland (782,520 kg), Canada (497,184 kg), Hong Kong (146,369 kg), Mexico (118,394 kg), Japan (63,350 kg), Sweden (46,422 kg), Germany (37,490 kg), Israel (31,753 kg), the UK (29,043 kg), and smaller amounts to many other countries. And, miscellaneous medicinal herbs that are used primarily in perfumery and pharmacy were exported mainly to Germany (2,107,204 kg), Canada (1,274,521 kg), Japan (752,335 kg), Italy (368,744 kg), Mexico (352,694 kg), the Netherlands (248,229 kg), the UK (183,005 kg), Australia (110,012 kg), Turks and Caicos Islands (90,720 kg), and smaller amounts to many other countries.

Exports of natural ingredients under heading HS 1302, which includes herbal extracts, mucilages, pectic substances, and saps, also dropped considerably from a 2001 value of US$ 260,477,376, down to a 2002 value of US$ 236,833,000.

Total US exports of essential oils and oleoresins (including capsicum oleoresin), grouped under heading HS 3301, stayed about the same with a 2001 value of US $298,770,016, down slightly to a 2002 value of US $297,161,000.
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Total exports</td>
<td>836,520,004</td>
<td>1,309,094,879</td>
<td>917,787,828</td>
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**Notes:** 2002 export data for the following headings have had certain natural ingredients, those that are not relevant to the US cosmetics and/or dietary supplement ingredient trade, subtracted out; HS 0910 (bay leaf, curry, and spices mixes are not included in the 2002 data); HS 1211 (coca leaf and poppy straw are not included in the 2002 data); HS 1302 (opium and pyrethrum are not included in the 2002 data).
2.4 Consumption

2.4.1 Market size

The market size for natural ingredients that are used exclusively in the US natural cosmetics and dietary supplement industries is difficult to ascertain largely because many of the same ingredients are also widely used in other sectors, for example by manufacturers of functional- and/or health- foods, alcoholic- and non-alcoholic beverages, conventional- and homeopathic- drugs, pet products, and even tobacco products, among other sectors. Many, or most, natural ingredient suppliers in the US, however, service both cosmetics and dietary supplement consumer product manufacturers.

The US Department of Commerce, Bureau of the Census, International Trade Administration (ITA) provides some sector analysis data using the North American Industry Classification System (NAICS), which employs 6-digit codes to identify and analyze industry sectors in the US, Canada, and Mexico. According to ITA data, the US Medicinal and Botanical Manufacturing Sub-sector (NAICS 325411) employed about 21,600 workers in 2000, of which 11,400 were production workers. This data is only partially useful for this report because it involves bulk natural and synthetic ingredients that are generally for use by pharmaceutical preparation manufacturers as opposed to only non-drug cosmetic and/or dietary supplement product manufacturers. NAICS 325411, as shown in the table below, includes not only bulk medicinal herbal products such as ginseng root extract but also some synthetic organic medicinal chemicals, as well as hormones, glands, organs, tissues and naturally occurring vitamins.

<table>
<thead>
<tr>
<th>NAICS Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3254111</td>
<td>Synthetic organic medicinal chemicals, in bulk, synthetic organic antibiotics, including all uses (veterinary, food supplements, food preservation, etc.), except preparations</td>
</tr>
<tr>
<td>32541111</td>
<td>Synthetic organic medicinal chemicals, in bulk, synthetic organic antibiotics, including all uses (veterinary, food supplements, food preservation, etc.), except preparations</td>
</tr>
<tr>
<td>32541112</td>
<td>Other synthetic organic medicinal chemicals, except antibiotics</td>
</tr>
<tr>
<td>32541121</td>
<td>Other synthetic organic medicinal chemicals, except antibiotics</td>
</tr>
<tr>
<td>3254114</td>
<td>Other medicinal and botanical products, in bulk, nec, botanical alkaloid drugs, other botanical drugs, naturally occurring vitamins, drugs of animal origin, and artificial mixtures of two or more medical or botanical substances</td>
</tr>
<tr>
<td>32541141</td>
<td>Botanical drugs, alkaloids, including opium and nicotine</td>
</tr>
<tr>
<td>32541142</td>
<td>Botanical drugs, including glycosides and ginseng extract</td>
</tr>
<tr>
<td>32541143</td>
<td>Naturally occurring vitamin C</td>
</tr>
<tr>
<td>32541144</td>
<td>Naturally occurring vitamin E.</td>
</tr>
<tr>
<td>32541145</td>
<td>Medicinals and botanicals, other medicinal and botanical products, in bulk, nec, naturally occurring vitamins, other naturally occurring vitamins (from yeast, fish, liver, etc.)</td>
</tr>
<tr>
<td>32541146</td>
<td>Medicinals and botanicals, other medicinal and botanical products, in bulk, nec, drugs of animal origin, including hormones, dried glands, organs, and tissues and extractions thereof</td>
</tr>
<tr>
<td>32541147</td>
<td>Medicinals and botanicals, other medicinal and botanical products, in bulk, nec, artificial mixtures of two medicinal or botanical substances or more for therapeutic or prophylactic uses</td>
</tr>
<tr>
<td>32541148</td>
<td>Medicinals and botanicals, other medicinal and botanical products, in bulk, nec, other organic and inorganic medicinal chemicals, except diagnostics</td>
</tr>
<tr>
<td>32541149</td>
<td>Medicinals and botanicals, other medicinal and botanical products, in bulk, nec, other organic and inorganic medicinal chemicals, except diagnostics</td>
</tr>
</tbody>
</table>

Source: U.S. Department of Commerce: Bureau of the Census; International Trade Administration (ITA).
Natural cosmetics and cosmeceuticals
Determining the trade value of natural cosmetics ingredients in the US is extremely complicated due, in part, to a lack of precise definitions and a lack of regulatory oversight. Beauty care products are notoriously under-regulated in the US. For example, some ingredients are traded as “natural” that are not natural by some definitions. Other ingredients traded as “cosmeceuticals” may, or may not, be natural in composition. There are even some cosmetic products labeled as “organic” that contain mostly synthetic components with only a negligible quantity of certified organic natural ingredients.

Some European-made cosmetics in the US market display the “Certified Natural Cosmetic” seal, certified by the BDiH (Bundesverband deutscher Industrie- und Handelsunternehmen). Natural cosmetics with this seal are certified to contain natural raw materials such as plant oils, fats and waxes, herbal extracts and essential oils and aromatic materials from certified organic or wild harvested plants. They may not be tested on animals, contain animal by-products from vertebrates (e.g. mink oil), nor may they be sterilized by irradiation.

Leading natural ingredient manufacturers like Sabinsa Corporation define their catalogue of “natural cosmeceutical” ingredients to include certain essential oils (coriander seed oil), fine chemicals (aleuritic acid isolated from lac resin), herbal extracts (green tea leaf extract and licorice root extract) and derivatives (neem oil liminoids), as well as freeze-dried coconut water solids.

Depending on the definition applied, the size of the total US health and beauty category, at retail, ranges anywhere from US $25.2 to $52.9 billion, and is composed of three segments: mainstream health and beauty products, natural products, and cosmeceutical products. According to a Nutrition Business Journal survey, the size of the natural personal care and cosmetics products market in the US, at retail, was US $3.8 billion in 2000, a 5.8% increase over 1999, accounting for 10% of total health and beauty care spending. The number of product offerings in the natural category is also a growing part of the overall personal care segment, accounting for 7.6% in 2001, up from 6.3% in 2000.

Additionally, cosmeceutical product sales, which may also include products with natural ingredients, are estimated to range between US $2.7 billion to $3 billion, representing about 6%-7% of the total health and beauty industry. US demand for cosmeceutical products has been estimated to grow by 8% per year through 2007, when it is predicted to reach about US $5 billion. The global market for natural personal care and cosmeceutical products is estimated to be over US $13 billion, with growth in the US and the EU the highest worldwide.

There are an estimated 400 companies competing in the US cosmeceutical industry, of which about half are chemical suppliers (possibly also suppliers of some natural ingredients) and half are end-use product manufacturers.

Dietary supplements
The dietary supplement industry is one of the fastest growing product areas that FDA regulates. The FDA has recently estimated the number of US companies that manufacture, hold, or repack the dietary supplement products as well as the number of natural ingredient suppliers to the industry. FDA estimates that there are a total of 1,566 companies, of which 1,228 are manufacturers of dietary supplement consumer products (78.4%), 114 are holders of dietary supplement products (7.3%), 26 are repackers or relabelers of dietary supplement products (1.7%), and 92 establishments are not already classified (5.9%), and 106 are natural ingredient suppliers (6.7%). Most US dietary supplement companies are considered to be small or very small with total annual revenues less than US $20 million.

Natural ingredients trade value
The International Research Institute (IRI) has estimated the farm-level value of herbs
produced in the North America to be more than US $1 billion, with the market growing at least 10 percent annually. Cultivated herbs may be processed into various value-added forms for end-uses in cosmetics, dietary supplements, foods, drugs, or other types of products.

For the natural ingredients covered in this Market Brief, the US imported over $1.7 billion in 2002 (See Table 2.2) and exported over $1.3 billion (See Table 2.10). The entire quantity of these natural ingredients, however, cannot be attributed entirely to an end-use in cosmetic and/or dietary supplement products.

**Natural ingredient suppliers for cosmetics and dietary supplements**

Details on 22 of the leading extract manufacturers operating in the US are listed in Appendix II, of which 12 are US companies and 10 are foreign companies that operate sales, marketing and distribution facilities located in the US. Appendix II also provides details for nine US essential oil producers, 31 herb farms, and 47 leading natural ingredient wholesale distribution companies (many with some value-add processing capabilities). Please note that the Appendix II listing of companies is not exhaustive. There is also some crossover, for example, some of the farms listed are divisions or subsidiaries of parent companies listed under a separate heading.

Only a few of the leading US natural ingredient manufacturers are publicly traded and, therefore, their total annual revenues are published. For example, total revenues for Pure World, Inc. (NasdaqSC:PURW), a manufacturer and marketer of natural extract ingredients, for the most recent 12-month period were US $22.2 million. Total annual revenues for Hauser, Inc. (OTCBB:HAUS), another US manufacturer and marketer of natural ingredients, are over US $50 million, however, about 13% of Hauser’s total revenues are related to technical services such as contract research and development rather than ingredient sales. Hauser has, however, recently filed a voluntary petition for reorganization under Chapter 11 of the US Bankruptcy Code.

The A.M. Todd Group of Companies, which is privately held, has been estimated to be a US $300 million supplier of natural ingredients, although this estimate includes sales from their flavor ingredients division (SunPure Ltd.), and sales from their vanilla bean division (Zink & Triest Company, Inc.), as well as sales from their botanical extract and essential oil division (A.M. Todd Company; formerly East Earth Herb, Inc. and Folexco, Inc.). In 1999, the merging of the former East Earth Herb and Folexco companies was estimated to be a new US $50 million company, now part of the A.M. Todd Group of Companies.

European natural ingredient manufacturers lead the global market and also have a strong presence in the US market. One of the world’s leading manufacturers and marketers of natural ingredients, Indena S.p.A. of Milan, Italy, an estimated US $200 million supplier of natural ingredients for cosmetic, dietary supplement, health food, and pharmaceutical products, has sales, marketing, and distribution facilities at two US locations. One of the world’s leading suppliers of pharmacopoeial-grade botanical raw materials and herbal extracts is the German corporation MB-Holding (estimated annual revenues of US $250 million). MB-Holding is the parent company for a group of nearly 30 companies operating worldwide including Finzelberg GmbH & Co KG (medicinal herbal extracts for dietary supplements and phytopharmaceuticals), Martin Bauer GmbH & Co KG (medicinal and aromatic herbs and teas), and Plantextrakt GmbH & Co KG (herbal extracts for foods and cosmetics). MB-Holding has sales, marketing, and distribution facilities for its various divisions in several US locations, supplying plant-based natural ingredients to the cosmetics, dietary supplement, food, and pharmaceutical industries. Euromed S.A. (and its US subsidiary Euromed USA, Inc.) is a wholly owned subsidiary of the German pharmaceutical company Madaus Group (estimated annual revenues of US $400 million),
manufacturing standardized plant extracts and natural active principles for the pharmaceutical, cosmetic, dietary supplement, and food industries.

2.4.2 Market segmentation

The US market for natural ingredients for cosmetics and dietary supplements can be divided in the following main segments:

A. Processing industry
1. Commercial herbal extraction houses (extraction, evaporation, juicing, distillation, fermentation, purification, drying, blending, granulation, grinding)
2. Commercial milling operations (cutting, sifting, powdering, blending, packing)
3. Essential oil distillers (associated with an herb farm or mobile distillation units)
4. Farms (cultivation, drying, milling, sieving, density adjustment, and in some cases on-site distillation, extraction and/or juicing of fresh plant material)
5. Nut and seed oil producers; oil seeds: flax, hemp, jojoba; ground-nuts (cold pressing, expeller pressing, CO2 super critical extraction, de-fatting, esterification, hydrogenation, refining, transisomerization)
6. Wholesale distributors with value-add capabilities (blending, milling, sieving, density adjustment, formulation, granulation, particle engineering, trituration, contract manufacturing)

B. Consumer product manufacturers
1. Natural cosmetic and cosmeceutical
   a. Bath products
      i. Aromatherapy bath products
      ii. Bath milks and oils
      iii. Herbal baths (sacs, salts (with essential oils) or effervescent tablets)
      iv. Shower and bath gels
      v. Soaps
   b. Beauty and personal care product manufacturers
      i. Decorative (eye and facial makeup, nail polishes, lipsticks, tattoos)
      ii. Deodorants
      iii. Oral care (chewing sticks with essential oil, dental floss with essential oil, mouthwashes, herbal tooth gel and toothpastes)
      iv. Skin care (skin conditioners, gels, lotions and creams, masks, massage oils, moisturizers, toners)
      v. Shaving products (shaving cream, aftershave lotion)
      vi. Suntan and sunscreen products
   c. Hair care product manufacturers
      i. Hair coloring products
      ii. Hair growth products
      iii. Herbal shampoos, conditioners, oils, rinses
      iv. Styling gels
   d. Perfume and fragrance product manufacturers
   e. Wound healing, injury, pain relief drug cosmetic product manufacturers
      i. Herbal balms, distillates, gels, liniments, ointments, plasters, salves
2. Dietary supplement and nutraceutical
   a. Herbal dietary supplements
      i. Essential fatty acid product marketers (borage oil, evening primrose oil, flax oil)
      ii. Essential oil (e.g. peppermint oil in coated capsules) marketers
      iii. Herbal extract marketers (dry or soft extracts in capsules or tablets)
      iv. Liquid extract manufacturers (fluidextracts, glyceextracts, juices, syrups, tinctures)
      v. Medicinal and wellness herbal tea manufacturers
      vi. Powdered herb (in capsule or tablets) marketers
   b. Manufacturers of amino acids, enzymes, organ tissues, glandulars, metabolites, proteins
   c. Vitamin and mineral product manufacturers
2.4.3 Market characteristics

Natural cosmetics
North Americans spend $154 per year per capita on cosmetics. According to American Demographics magazine, Americans are spending more than ever on personal care, an average of $563 per household in 2000. Natural cosmetics account for an estimated 10% of the total market and cosmeceuticals account for an estimated 6-7%, however the boundaries between these two categories are presently unclear and there is likely to be some amount of overlap between them depending on the definitions used by different market analysts.

According to Natural Business Journal, the top-selling natural personal care products in US natural products retail outlets are skin care products, followed by hair care products, bath/toilet soap, oral hygiene, fragrances, cosmetics, deodorants and bath items, baby care items, shaving products, feminine hygiene and nail care products.

The American population is aging, and the so-called “baby boomer” generation, those born between 1946 and 1964, now between the ages of 40 and 60, making up the largest share of the US population and accounting for one-half of all expenditures. The aging US population is looking for natural cosmetic products that promise anti-aging benefits in particular. The cosmetic industry views “natural” and “organic” products as innovations that are driving the overall market. Baby boomers are also demanding products that meet their ecological and ethical concerns. For example, natural cosmetics that have growing appeal to the green consumer in the US are those that contain certified organic ingredients, that do not contain artificial colors or preservatives, that are not tested on animals, and those whereby some portion of the company’s profits are donated to non-profit environmental organizations or are invested in a way that supports local communities in the ingredient-producing regions of developing countries.

Dietary supplements
According to analysis provided in the Food and Drug Administration (FDA), the US dietary supplement industry experienced rapid growth from 1994 to 2000, as shown in Table 2.11, which shows annual sales of three general categories of dietary supplements, a measure of the market size of the supplement industry. Annual increases in sales of herbals and botanicals were the greatest, averaging 18% per year, while annual increases in sales of supplements that were neither vitamins and minerals nor herbals and botanicals increased less, averaging 11% per year. The lowest annual sales increases were for vitamins and minerals, averaging 8% per year. For all dietary supplements combined, sales increased an average of 12% a year since 1994 (not shown on the table). Panel C of the Table shows that the estimated per capita consumption of the different categories of dietary supplements has increased steadily since 1994. Since 2000, however, total sales of herbal dietary supplements have been flat.

Demographics of the main US audience for dietary supplement products are the same as those discussed for natural cosmetics and cosmeceuticals. It is mainly the relatively affluent, well-educated, baby-boomer generation, between the ages of 40 and 60.

Demographics of the organic consumer sub-sector show that 54% are from age 55+, skewing towards age 65+. 47% are from households with annual income of US $50,000+, and 30% from $70,000+. Health-conscious younger generations, however, are also beginning to co-drive the organic market. About 60% of the organic consumers are female.
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Panel A—Nominal Market (Millions of Current Dollars)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitamins</td>
<td>3,960</td>
<td>4,220</td>
<td>4,780</td>
<td>5,190</td>
<td>5,550</td>
<td>5,940</td>
<td>6,360</td>
</tr>
<tr>
<td>Growth rate (percent)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minerals</td>
<td>700</td>
<td>800</td>
<td>900</td>
<td>1,070</td>
<td>1,160</td>
<td>1,250</td>
<td>1,350</td>
</tr>
<tr>
<td>Growth rate (percent)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Herbs and Botanicals</td>
<td>2,070</td>
<td>2,530</td>
<td>2,990</td>
<td>3,530</td>
<td>4,170</td>
<td>4,840</td>
<td>5,520</td>
</tr>
<tr>
<td>Growth rate (percent)</td>
<td>22.22</td>
<td>18.18</td>
<td>18.06</td>
<td>18.13</td>
<td>18.13</td>
<td>18.06</td>
<td>18.06</td>
</tr>
<tr>
<td>Supplements other than vitamins/minerals and botanicals</td>
<td>2,070</td>
<td>2,290</td>
<td>2,620</td>
<td>2,890</td>
<td>3,180</td>
<td>3,490</td>
<td>3,840</td>
</tr>
<tr>
<td>Growth rate (percent)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>8,080</td>
<td>9,840</td>
<td>11,290</td>
<td>12,680</td>
<td>14,060</td>
<td>15,520</td>
<td>17,070</td>
</tr>
<tr>
<td>Growth rate (percent)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Panel B—Prices

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer price index-units (percent)</td>
<td>148.5</td>
<td>152.5</td>
<td>157.0</td>
<td>160.5</td>
<td>163.2</td>
<td>166.7</td>
<td></td>
</tr>
<tr>
<td>Inflation rate (percent)</td>
<td>2.56</td>
<td>2.76</td>
<td>2.957</td>
<td>2.23</td>
<td>1.68</td>
<td>2.14</td>
<td>2.39</td>
</tr>
<tr>
<td>Vitamins and minerals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average nominal price (IRI)</td>
<td>$6.20</td>
<td>$6.50</td>
<td>$6.87</td>
<td>$7.34</td>
<td>$7.54</td>
<td>$7.78</td>
<td>$8.05</td>
</tr>
<tr>
<td>Real price increase (percent)</td>
<td>5.25</td>
<td>2.08</td>
<td>2.74</td>
<td>4.61</td>
<td>1.04</td>
<td>1.04</td>
<td>1.04</td>
</tr>
</tbody>
</table>

Panel C—Per Capita Consumption (Number of Units Sold Per U.S. Resident)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin/mineral sales</td>
<td>2.45</td>
<td>2.47</td>
<td>2.62</td>
<td>2.64</td>
<td>2.72</td>
<td>2.80</td>
<td>2.87</td>
</tr>
<tr>
<td>Growth (percent)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Herbs sales</td>
<td>1.28</td>
<td>1.48</td>
<td>1.64</td>
<td>1.80</td>
<td>2.00</td>
<td>2.19</td>
<td>2.34</td>
</tr>
<tr>
<td>Growth (percent)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supplements other than vitamins and minerals and herbs</td>
<td>15.48</td>
<td>10.79</td>
<td>9.45</td>
<td>11.60</td>
<td>9.17</td>
<td>7.17</td>
<td>7.03</td>
</tr>
<tr>
<td>Growth (percent)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.4.4 Apparent consumption of selected natural ingredients

Because US domestic production data is not available for the vast majority of natural ingredients used in cosmetics and dietary supplements, the following tables cover selected high-demand natural ingredients for which some amount of domestic production, import and export data exists. It must also be kept in mind that many of the same ingredients are also used in beverages, foods and drugs.

**2.4.4.1 Cayenne (Capsicum) fruit**

Apparent Consumption of Cayenne (Capsicum) Fruit in the US  
(in Kilograms)

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>131,951,370 kg</td>
</tr>
<tr>
<td>Imports</td>
<td>12,405,921 kg</td>
</tr>
<tr>
<td>Exports</td>
<td>6,295,808 kg</td>
</tr>
<tr>
<td>Apparent consumption</td>
<td>138,061,483 kg</td>
</tr>
</tbody>
</table>


**2.4.4.2 Flaxseed (Linseed) oil**

Apparent Consumption of Flaxseed (Linseed) Oil in the US  
(in Kilograms)

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>106,141,700 kg</td>
<td>106,141,700 kg</td>
<td>106,141,700 kg</td>
</tr>
<tr>
<td>Imports (crude &amp; refined)</td>
<td>6,102,100 kg</td>
<td>4,478,100 kg</td>
<td>5,807,709 kg</td>
</tr>
<tr>
<td>Exports (crude &amp; refined)</td>
<td>33,389,500 kg</td>
<td>28,574,900 kg</td>
<td>44,444,846 kg</td>
</tr>
<tr>
<td>Apparent consumption</td>
<td>78,854,400 kg</td>
<td>82,044,900 kg</td>
<td>82,044,900 kg</td>
</tr>
</tbody>
</table>


**2.4.4.3 Ginger rhizome**

Apparent Consumption of Ginger Rhizome in the US  
(in Kilograms)

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>6,531,797 kg</td>
</tr>
<tr>
<td>Imports</td>
<td>21,114,952 kg</td>
</tr>
<tr>
<td>Exports</td>
<td>655,795 kg</td>
</tr>
<tr>
<td>Apparent consumption</td>
<td>26,990,954 kg</td>
</tr>
</tbody>
</table>


**NOTE:** The apparent consumption of ginger data must be viewed cautiously because the US production is based on fresh weight only. Fresh ginger contains up to 90% moisture, and dried ginger should not contain more than 10% moisture. It is not clear what amount of the imports and/or exports are fresh, partially dried, or fully dried, so a calculation in order to account for moisture content would be necessary.
2.4.4.4  Ginseng root

Apparent Consumption of Cultivated Ginseng Root (American & Asian) in the US
(in Kilograms)

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production (entirely American ginseng)</td>
<td>451,590 kg</td>
</tr>
<tr>
<td>Imports (mainly Asian ginseng)</td>
<td>76,800 kg</td>
</tr>
<tr>
<td>Exports (mainly American ginseng)</td>
<td>320,609 kg</td>
</tr>
<tr>
<td>Apparent consumption (both ginsengs)</td>
<td>207,781 kg</td>
</tr>
</tbody>
</table>


2.4.4.5  Hop strobile

Apparent Consumption of Hop Strobile in the US
(in Kilograms)

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>25,594,438 kg</td>
</tr>
<tr>
<td>Imports</td>
<td>3,334,883 kg</td>
</tr>
<tr>
<td>Exports</td>
<td>4,804,440 kg</td>
</tr>
<tr>
<td>Apparent consumption</td>
<td>24,124,881 kg</td>
</tr>
</tbody>
</table>


2.4.4.6  Jojoba oil

Apparent Consumption of Jojoba Oil in the US
(in Kilograms)

<table>
<thead>
<tr>
<th></th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>691,735 kg</td>
<td>517,100 kg</td>
<td>408,237 kg</td>
<td>288,000 kg</td>
<td>288,017 kg</td>
</tr>
<tr>
<td>Imports</td>
<td>501,900 kg</td>
<td>274,500 kg</td>
<td>343,500 kg</td>
<td>347,700 kg</td>
<td>193,754 kg</td>
</tr>
<tr>
<td>Exports</td>
<td>377,200 kg</td>
<td>391,200 kg</td>
<td>354,600 kg</td>
<td>347,700 kg</td>
<td>193,754 kg</td>
</tr>
<tr>
<td>Apparent consumption</td>
<td>816,435 kg</td>
<td>400,400 kg</td>
<td>397,137 kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


NOTE: A very small amount of jojoba is also produced in California, however statistical data is only available from Arizona State, which accounts for most US production.
### 2.4.4.7 Licorice root

Apparent Consumption of Licorice Root in the US  
(in Kilograms)

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>0 kg</td>
</tr>
<tr>
<td>Imports</td>
<td>12,115,516 kg</td>
</tr>
<tr>
<td>Exports</td>
<td>308,913 kg</td>
</tr>
<tr>
<td>Apparent consumption</td>
<td>11,806,603 kg</td>
</tr>
</tbody>
</table>

**Sources:** Production: N/A; Imports and Exports: Foreign Trade Division, U.S. Census Bureau. Presented by: Office of Trade and Economic Analysis (OTEA), International Trade Administration, U.S. Department of Commerce.

### 2.4.4.8 Maté leaf

Apparent Consumption of Maté Leaf in the US  
(in Kilograms)

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>0 kg</td>
</tr>
<tr>
<td>Imports</td>
<td>1,050,604 kg</td>
</tr>
<tr>
<td>Exports</td>
<td>31,781 kg</td>
</tr>
<tr>
<td>Apparent consumption</td>
<td>1,018,823 kg</td>
</tr>
</tbody>
</table>

**Sources:** Production: N/A; Imports and Exports: Foreign Trade Division, U.S. Census Bureau. Presented by: Office of Trade and Economic Analysis (OTEA), International Trade Administration, U.S. Department of Commerce.

### 2.4.4.9 Peppermint leaf oil

Apparent Consumption of Peppermint Leaf Oil in the US  
(in Kilograms)

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>3,092,624 kg</td>
</tr>
<tr>
<td>Imports</td>
<td>526,926 kg</td>
</tr>
<tr>
<td>Exports</td>
<td>2,565,400 kg</td>
</tr>
<tr>
<td>Apparent consumption</td>
<td>1,054,150 kg</td>
</tr>
</tbody>
</table>

**Sources:** Production: USDA NASS Agricultural Statistics Data Base; Imports and Exports: Foreign Trade Division, U.S. Census Bureau. Presented by: Office of Trade and Economic Analysis (OTEA), International Trade Administration, U.S. Department of Commerce.

### 2.4.4.10 Psyllium husk/seed

Apparent Consumption of Psyllium Husk/Seed in the US  
(in Kilograms)

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>0 kg</td>
</tr>
<tr>
<td>Imports</td>
<td>11,498,013 kg</td>
</tr>
<tr>
<td>Exports</td>
<td>0 kg</td>
</tr>
<tr>
<td>Apparent consumption</td>
<td>11,498,013 kg</td>
</tr>
</tbody>
</table>

**Sources:** Production: N/A; Imports and Exports: Foreign Trade Division, U.S. Census Bureau. Presented by: Office of Trade and Economic Analysis (OTEA), International Trade Administration, U.S. Department of Commerce.
3 MARKET ACCESS

3.1 Tariffs

The USITC (Office of Tariff Affairs and Trade Agreements) is responsible for publishing the Harmonized Tariff Schedule of the United States Annotated (HTSA). The HTSA provides the applicable tariff rates and statistical categories, based on the international Harmonized System, for all natural ingredients imported into the US. The US Customs Service is responsible for administering the tariff and for processing import entries.

For natural ingredients imported into the US, the most-favored-nation (MFN) rates of duty are as follows:

<table>
<thead>
<tr>
<th>HS Code</th>
<th>Description</th>
<th>Rate of Duty</th>
</tr>
</thead>
<tbody>
<tr>
<td>0902</td>
<td>Tea leaf (non-flavored only)</td>
<td>Free</td>
</tr>
<tr>
<td>0903</td>
<td>Mate leaf</td>
<td>Free</td>
</tr>
<tr>
<td>09042020</td>
<td>Cayenne fruit (Capsicum)</td>
<td>US$ 0.03/kg</td>
</tr>
<tr>
<td></td>
<td>WITH SPECIAL PROGRAM EXCEPTIONS: GSP, NAFTA for</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Canada, CBI, Israel Special Rate, ATPA, Jordan</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Special Rate, and NAFTA for Mexico</td>
<td></td>
</tr>
<tr>
<td>0909</td>
<td>Seeds of anise, badian, coriander, cumin,</td>
<td>Free</td>
</tr>
<tr>
<td></td>
<td>caraway and fennel</td>
<td></td>
</tr>
<tr>
<td>091010</td>
<td>Ginger rhizome (not ground)</td>
<td>Free</td>
</tr>
<tr>
<td></td>
<td>Ground ginger rhizome, however, has a US$ 0.01/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>rate of duty, with the following special program</td>
<td></td>
</tr>
<tr>
<td></td>
<td>exceptions: GSP, NAFTA for Canada, CBI, Israel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Special Rate, ATPA, Jordan Special Rate, and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NAFTA for Mexico</td>
<td></td>
</tr>
<tr>
<td>091020</td>
<td>Saffron stigma</td>
<td>Free</td>
</tr>
<tr>
<td>091030</td>
<td>Turmeric (Curcuma) rhizome</td>
<td>Free</td>
</tr>
<tr>
<td>091040</td>
<td>Thyme herb (crude or not manufactured)</td>
<td>Free</td>
</tr>
<tr>
<td>1210</td>
<td>Hop strobile</td>
<td>US$ 0.132/kg</td>
</tr>
<tr>
<td></td>
<td>WITH SPECIAL PROGRAM EXCEPTIONS: GSP, NAFTA for</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Canada, CBI, Israel Special Rate, ATPA, Jordan</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Special Rate, and NAFTA for Mexico</td>
<td></td>
</tr>
<tr>
<td>1211</td>
<td>Medicinal herbs used in perfumery and pharmacy</td>
<td>Free</td>
</tr>
<tr>
<td></td>
<td>(e.g. ginseng root, licorice root, peppermint</td>
<td></td>
</tr>
<tr>
<td></td>
<td>leaf, psyllium seed husks, sage leaf, senna</td>
<td></td>
</tr>
<tr>
<td></td>
<td>leaf/pod, etc...)</td>
<td></td>
</tr>
<tr>
<td>121220</td>
<td>Seaweeds and other algae</td>
<td>Free</td>
</tr>
<tr>
<td>1301</td>
<td>Seed lac, natural gums (e.g. gum arabic),</td>
<td>Free</td>
</tr>
<tr>
<td></td>
<td>resins, gum-resins and oleoresins</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(for example, balsams)</td>
<td></td>
</tr>
<tr>
<td>1302</td>
<td>Vegetable saps and extracts (e.g. extracts</td>
<td>Free</td>
</tr>
<tr>
<td></td>
<td>of aloe, ginseng, hops, and licorice)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>pectic substances, pectinates, pectates, agar-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>agar and other mucilages and thickeners (e.g.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>guar seed)</td>
<td></td>
</tr>
</tbody>
</table>

Licorice root extract (HS 1302.12) has a 3.8% rate of duty, with the following special program exceptions: GSP, NAFTA for Canada, CBI, Israel Special Rate, ATPA, Jordan Special Rate, and NAFTA for Mexico

Hop strobile extract (HS 1302.13) has a US$ 0.89 / kg rate of duty, with the following special program exceptions: Imports from least-developed beneficiary developing countries eligible for GSP under this subheading, NAFTA for Canada,
Africa Growth and Opportunity Act (AGOA), CBI, Israel Special Rate, ATPA, and NAFTA for Mexico

Ginseng root extract (HS 1302.19.4020) has a 1% rate of duty, with the following special program exceptions: GSP, NAFTA for Canada, CBI, Israel Special Rate, ATPA, Jordan Special Rate, and NAFTA for Mexico

Carrageenan (HS 1302.39.0010) and other vegetable mucilages, NESOI (HS 1302.39.0090) have a 3.2% rate of duty, with the following special program exceptions: Imports from least-developed beneficiary developing countries eligible for GSP under this subheading, NAFTA for Canada, AGOA, CBI, Israel Special Rate, ATPA, Jordan Special Rate, and NAFTA for Mexico

HS 1508

Ground-nut oil, crude (HS 1508.10) and refined (HS 1508.90) both have a US$ 0.075 / kg rate of duty, with the following special program exceptions: Imports from least-developed beneficiary developing countries eligible for GSP under this subheading, NAFTA for Canada, AGOA, CBI, Israel Special Rate, ATPA, Jordan Special Rate, and NAFTA for Mexico

HS 1513

Coconut (copra), palm kernel or babassu oil, and fractions thereof enter the US duty free

HS 1515

Flaxseed (Linseed) oil, crude (HS 1515.11) and refined (HS 1515.19) both have a US$ 0.063 / kg rate of duty, with the following special program exceptions: Imports from least-developed beneficiary developing countries eligible for GSP under this subheading, NAFTA for Canada, AGOA, CBI, Israel Special Rate, ATPA, Jordan Special Rate, and NAFTA for Mexico

Corn (Maize) oil, crude (HS 1515.21.000) and refined (HS 1515.29.0020 & 1515.29.0040) both have a 3.4% rate of duty, with the following special program exceptions: Imports from least-developed beneficiary developing countries eligible for GSP under this subheading, NAFTA for Canada, AGOA, CBI, Israel Special Rate, ATPA, Jordan Special Rate, and NAFTA for Mexico

Castor oil (HS 1515.30) enters the US duty free

Sesame oil (HS 1515.50) has a US$ 0.68 / kg rate of duty, with the following special program exceptions: GSP, NAFTA for Canada, CBI, Israel Special Rate, ATPA, Jordan Special Rate, and NAFTA for Mexico

Nut oils, NESOI (HS 1515.90.2000) enter the US duty free

Jojoba oil (HS 1515.90.6000) has a 2.3% rate of duty, with the following special program exceptions: GSP, NAFTA for Canada, CBI, Israel Special Rate, ATPA, Jordan Special Rate, and NAFTA for Mexico

Hemp oil (HS 1515.90.8010) and other fixed vegetable fats and oils (HS 1515.90.8090) have a 3.2% rate of duty, with the following special program exceptions: GSP, NAFTA for Canada, CBI, Israel Special Rate, ATPA, Jordan Special Rate, and NAFTA for Mexico

HS 1516

Canola (rapeseed) oil (HS 1516.20.1000) has a 7.7% rate of duty, with the following special program exceptions: Imports from least-developed beneficiary developing countries eligible for GSP under this subheading, NAFTA for Canada, AGOA, CBI, Israel Special Rate, ATPA, Jordan Special Rate, and NAFTA for Mexico

Other vegetable fats and oils, NESOI (HS 1516.20.9000) have a US$ 0.088 / kg rate of duty, with the following special program exceptions: Imports from least-developed beneficiary developing countries eligible for GSP under this subheading, NAFTA for Canada, AGOA, CBI, Israel Special Rate, ATPA, Jordan Special Rate, and NAFTA for Mexico

HS 1521

Vegetable waxes (other than triglycerides), beeswax, other insect waxes and spermaceti enter the US duty free, with the following one exception: Bleached beeswax (HS 1521.90.2000) has a 4.8% rate of duty, with the following special program exceptions: GSP, NAFTA for Canada, CBI, Israel Special Rate, ATPA, Jordan Special Rate, and NAFTA for Mexico
Cocoa butter, fat and oil (HS 1804.00) enters the US duty free

Extracts, essences and concentrates, of tea leaf or maté leaf (HS 2101.20.2000) enter the US duty free

Coloring matter of vegetable (e.g. annato) or animal (e.g. cochineal) origin (HS 3203.00.1000) enters the US duty free

Other colorants, NESOI (HS 3203.00.8000) have a 3.1% rate of duty, with the following special program exceptions: Imports from least-developed beneficiary developing countries eligible for GSP under this subheading, NAFTA for Canada, CBI, Israel Special Rate, ATPA, Jordan Special Rate, Agreement on Trade in Pharmaceutical Products, and NAFTA for Mexico

Essential oils, resinoids and extracted oleoresins enter the US duty free with the following specific exceptions:

Essential oil of orange (HS 3301.12) has a 2.7% rate of duty, with the following special program exceptions: Certain countries excluded from GSP eligibility for this HTS subheading, NAFTA for Canada, CBI, Israel Special Rate, ATPA, Jordan Special Rate, and NAFTA for Mexico

Essential oil of lemon (HS 3301.13) has a 3.8% rate of duty, with the following special program exceptions: Imports from least-developed beneficiary developing countries eligible for GSP under this subheading, NAFTA for Canada, AGOA, CBI, Israel Special Rate, ATPA, Jordan Special Rate, and NAFTA for Mexico

Essential oil of grapefruit (HS 3301.19.1000) has a 2.7% rate of duty, with the following special program exceptions: Certain countries excluded from GSP eligibility for this HTS subheading, NAFTA for Canada, CBI, Israel Special Rate, ATPA, Jordan Special Rate, and NAFTA for Mexico

Essential oil of peppermint leaf (HS 3301.24) has a 4.2% rate of duty, with the following special program exceptions: Certain countries excluded from GSP eligibility for this HTS subheading, NAFTA for Canada, CBI, Israel Special Rate, ATPA, Jordan Special Rate, and NAFTA for Mexico

Essential oil of eucalyptus leaf (HS 3301.29.1000) has a 1.8% rate of duty, with the following special program exceptions: Certain countries excluded from GSP eligibility for this HTS subheading, NAFTA for Canada, CBI, Israel Special Rate, ATPA, Jordan Special Rate, and NAFTA for Mexico

Essential oil of orris (HS 3301.29.2000) has a 1.1% rate of duty, with the following special program exceptions: Certain countries excluded from GSP eligibility for this HTS subheading, NAFTA for Canada, CBI, Israel Special Rate, ATPA, Jordan Special Rate, and NAFTA for Mexico

Extracted oleoresins, including Capsicum oleoresin (HS 3301.90.10), have a 3.8% rate of duty, with the following special program exceptions: Certain countries excluded from GSP eligibility for this HTS subheading, NAFTA for Canada, CBI, Israel Special Rate, ATPA, Jordan Special Rate, and NAFTA for Mexico
3.2 Sanitary and safety regulations

3.2.1 Good Agricultural and Collection Practices (GACPs)

As a prerequisite for the production of pharmacopoeial-quality natural ingredients that are made from medicinal herbs & extracts, Good Agricultural and Collection Practice’s (GACPs) specific to medicinal plants are advisable.

The Botanical Raw Materials Committee of the American Herbal Products Association (AHPA) is presently in the process of developing a “Good Agricultural Practices (GAPs) for Botanical Raw Materials” document, to eventually be used by member companies as a guideline for their own farming operations and/or for their suppliers who cultivate medicinal plants. The United States Pharmacopeia’s Advisory Panel on Botanicals has also recently formed a subgroup, the GAP Working Group, with a goal to develop a USP GAP document that, in combination with the official monographs published in the USP-NF, will facilitate quality assurance for the production of herbal dietary supplement products. Additionally, the World Health Organization (WHO) expects to complete its final draft of its “WHO Guideline on Good Agricultural and Field Collection (GACP) for Medicinal Plants” document by the end of 2003, which may become an international standard for producers of botanical raw materials.

In the meantime, until the AHPA, USP, and/or WHO guidelines are published, it is recommended that medicinal plant farmers and/or wild collectors obtain a copy of the recently published guidelines published by The European Agency for the Evaluation of Medicinal Products (EMEA) entitled “Points to Consider on Good Agricultural and Collection Practice for Starting Materials of Herbal Origin” and consider incorporating the EMEA guidelines into their farming operation’s written Standard Operating Procedures.

Following GAPs are especially relevant for conventionally grown as well as organically grown medicinal plants because there really are no acceptable decontamination methods for medicinal plants. There are practically no methods which reduce microbial counts without, at the same time, adversely affecting a medicinal herb’s active constituents. Pasteurization and autoclaving are not generally suitable; dry heat can only be used for a few select herbs; ethylene oxide (ETO) forms toxic reaction products such as ethylene chlorohydrin and ethylene glycol (and ETO has been banned in the EU since 1990); ionizing irradiation (banned in Germany) also causes measurable changes in the chemistry composition of the botanical. Additionally, the use of ozone also causes significant undesirable changes in composition and quality, particularly in the case of volatile oil herbs like chamomile flowerhead.

According to the European Pharmacopoeia general monograph for Herbal Drugs “If a decontaminating treatment has been used, it is necessary to demonstrate that the constituents of the plant are not affected and that no harmful residues remain. The use of ethylene oxide (ETO) is prohibited for the decontamination of herbal drugs.” Instead, the development and implementation of GAPs for the hygienic production and handling of botanical raw materials should be implemented in order to minimize the microbiological load during growing, harvesting, drying, packing and storage stages.
3.2.2 Good Manufacturing Practices (GMPs) for Cosmetics and Dietary Supplements

**Cosmetic GMPs**
There are no regulations setting forth specific GMP requirements for non-drug cosmetics. In contrast, the law requires strict adherence to GMP requirements for cosmetics that are classified as drugs, and there are regulations specifying minimum current GMP requirements for drugs [Title 21 of the Code of Federal Regulations (CFR), parts 210 and 211]. Failure to follow GMP requirements causes a cosmetic drug to be adulterated under the FD&C Act, sec. 501(a)(2)(B). Title 21 of the Code of Federal Regulations can be viewed at: [http://www.access.gpo.gov/cgi-bin/cfrassemble.cgi?title=200221](http://www.access.gpo.gov/cgi-bin/cfrassemble.cgi?title=200221)

FDA’s Cosmetic Good Manufacturing Practice Guidelines can be viewed at: [http://www.cfsan.fda.gov/~dms/cos-gmp.html](http://www.cfsan.fda.gov/~dms/cos-gmp.html)

**Dietary Supplement GMPs**
On March 13, 2003, the FDA published its proposed rule “Current Good Manufacturing Practice (CGMP) in Manufacturing, Packing, or Holding Dietary Ingredients and Dietary Supplements” in the Federal Register; Available at: [http://www.cfsan.fda.gov/~lrd/fr030313.html](http://www.cfsan.fda.gov/~lrd/fr030313.html)

The comment period for these proposed rules ends on August 11, 2003. For more information on how to submit comments, visit: [http://www.cfsan.fda.gov/~lrd/fr030519.html](http://www.cfsan.fda.gov/~lrd/fr030519.html)

The proposed rule would establish the minimum CGMPs necessary to ensure that, if a company engages in activities related to manufacturing, packaging, or holding natural ingredients or finished dietary supplement products, it will be done in a manner that will not adulterate and misbrand the natural ingredients or finished dietary supplements. The provisions would require manufacturers to evaluate the identity, purity, quality, strength, and composition of their natural ingredients and finished dietary supplement products.

The CGMPs are designed to ensure that every dietary supplement on the market has the safety, identity, purity, quality, and strength it purports in the label to possess. The CGMPs include requirements for ingredient identity testing and other testing, including testing for adulteration with toxic substances. Under this proposed rule, a manufacturer must establish written specifications for its natural ingredients, botanical raw materials and extracts in particular. The specifications must allow for confirming the identity, purity, quality, strength, and composition of components, natural ingredients, or dietary supplements. The manufacturer will be also required to confirm that their written specifications are met before the natural ingredient can be used in a product and/or before the finished product can be released for sale.

The proposed CGMPs require manufacturers to test natural ingredients, particularly imported botanicals, for heavy metals, pesticides, and industrial contaminants. The proposed rule would also require that foreign firms, that want to export natural ingredients and/or dietary supplements to the US, also operate in compliance with FDA’s dietary supplement GMPs. This would apply to foreign firms that manufacture, package, or hold natural ingredients or dietary supplements that are imported or offered for import into the US, unless imported for further processing and re-export under certain conditions.
3.2.3 Registration of Foreign Facilities Under the Bioterrorism Act


On 19 March 2003, the US FDA released guidance documents addressing food and cosmetic security preventive measures, including the registration of foreign suppliers of ingredients with the FDA. The FDA designed these guidance documents as a way to help US product manufacturers minimize the risk of tampering or other malicious, criminal or terrorist actions. In the US, natural ingredients, including medicinal herbs and extracts, and/or oral use natural products made from natural ingredients are, for the most part, regulated as “dietary supplements,” a subset of food regulations rather than drug regulations, and external use natural products are regulated as non-drug cosmetics or cosmetic drugs. Therefore, natural ingredients used in both cosmetics and/or dietary supplements are covered by the Bioterrorism Act and these new FDA guidelines.

The rule also requires importers to provide “prior notice” of imports to FDA and the Bureau of Customs and Border Protection that includes:

- Identification of the submitter, including name and firm
- Entry type and US Customs System (ACS) entry number, or other US Customs identification number for the import
- Identification of the articles, including complete FDA product code, the common or usual name or market name, the quantities, and the lot or code numbers
- Identification of the manufacturer
- Identification of the grower
- Country of origin
- Identification of the shipper
- Anticipated date, time and location of arrival
- US Customs entry process information
- Identification of the importer, owner, and consignee
- Identification of the carrier

In March 2003, the American Herbal Products Association (AHPA) offered a workshop for its members entitled “Workshop on the Impact of the Implementation of the Bioterrorism Act on Dietary Supplement Businesses.” AHPA’s Herbal Importation Working Group also met to discuss emerging issues confronting importers of herbal materials, specifically related to new US Customs rules and the Bioterrorism Act. For more information on the activities of AHPA, visit: http://www.ahpa.org/

Three relevant “Guidance for Industry” documents, concerning importers and exporters of natural ingredients, are available from the FDA to down at the following Internet addresses:

**Importers and Filers: Food Security Preventive Measures Guidance**  
Available to download at:  
http://www.cfsan.fda.gov/~dms/secguid7.html

**Cosmetics Processors and Transporters: Cosmetics Security Preventive Measures Guidance**  
Available to download at:  
http://www.cfsan.fda.gov/~dms/secguid4.html

**Food Producers, Processors, and Transporters: Food Security Preventive Measures Guidance**  
Available to download at:  
http://www.cfsan.fda.gov/~dms/secguid6.html

Additionally, other relevant information concerning the Agricultural Bioterrorism Protection Act of 2002 can be obtained at the Agricultural Bioterrorism web-page of the Animal and Plant Health Inspection Service (APHIS) of the USDA:  

APHIS also has a “Trade Support Team” which functions as the central office for tracking pending trade issues and initiatives, as well as working to ensure that APHIS’ concern for protecting US agriculture’s biosecurity is considered by other US government agencies as they develop and implement broader trade policies.
3.2.4 FDA Color Certification Program

FDA separates color additives into two categories. These are colors that the agency certifies (derived primarily from petroleum and known as coal-tar dyes) and colors that are exempted from certification (obtained largely from mineral, plant, or animal sources). Only approved substances may be used to color foods, drugs, cosmetics, and medical devices.

FDA requires domestic and foreign manufacturers of certain colors to submit samples from each batch of color produced. FDA scientists test each sample of these colors to confirm that each batch of the color is within established specifications. These certified colors are listed on labels as FD&C, D&C or external D&C. Using the uncertified versions of color additives that require certification is illegal in foods, drugs, cosmetics, and medical devices.

The color certification program is self-supporting because the law requires manufacturers to pay FDA a user fee for each pound of color the agency certifies. In Fiscal Year 2000 FDA certified more than 13 million pounds of color additives.133

3.2.5 Phytosanitary Certificates

A phytosanitary certificate documents the origin of a shipment and confirms inspection in the country of origin by a member of that country's national plant protection organization. This helps ensure that the shipment is free of injurious plant pests and diseases.

The certifying country usually charges a fee for providing these certificates. Phytosanitary certificates are governed under the International Plant Protection Convention, a multilateral treaty acknowledged by the World Trade Organization as the source for international standards for phytosanitary measures affecting trade. Phytosanitary certificates are recognized as an internationally accepted form of pest risk mitigation.

As of 22 January 2002, the United States Department of Agriculture (USDA) began consistently and routinely enforcing an existing requirement that shipments must be accompanied by a phytosanitary certificate of inspection, or similar documentation approved by USDA. All plants, roots, bulbs, seeds, and other plant products must be accompanied by a phytosanitary certificate issued by the plant health officials where the product originated in order to be considered for entry into the United States.134
3.2.6 USDA National Organic Program Import Requirements for Agricultural Products

The new USDA National Organic Standards require all agricultural products (including botanical raw materials & extracts) sold, labeled or represented as organic in the US to be certified by a USDA accredited certifying agent. However, in lieu of organic certification by a USDA accredited certifying agent, imported organic agricultural products (including medicinal herbs, extracts and essential oils) may be sold in the US if they have been certified and recognized through:

1. a USDA recognition of conformity assessment (of independent certifying agents that are accredited by foreign governments) or
2. an equivalency determination (organic certification programs of foreign governments).

USDA is currently working with several foreign governments to recognize their ability to assess and accredit certifying agents as meeting the requirements of the USDA National Organic Program. With regard to equivalency determination, USDA is currently working with India, Japan, Australia, and the EU to determine whether their national organic certification programs are equivalent to USDA National Organic Program. ¹³⁵

3.3 Quality requirements

Quality of natural ingredients is judged by the Quality Control (QC) Unit of each product manufacturing company based on a set of written specifications. According to GMP regulations, the QC Unit of a company may not release a natural ingredient for production in a batch until the ingredient has been tested and has been found to be in conformance with its written specifications. Some cosmetics and dietary supplement companies, particularly those whose products are regulated as drugs in other countries, have developed internal ingredient specifications that are based on pharmacopoeial standards monographs. For an ingredient to be labeled as pharmacopoeial-grade (e.g. Senna USP), the ingredient must be assayed and documented to be in conformance with all of the qualitative and quantitative standards that appear in the monograph.


Official monographs published in the USP designate that the article has an FDA-approved or USP-accepted use. USP and USNF botanical monographs are FDA-enforceable and include descriptions, requirements, tests, analytical procedures, and acceptance criteria. USP is recognized in the Dietary Supplement Health and Education Act (DSHEA) amendments to the Federal Food, Drug and Cosmetic Act as the nation's official compendia for dietary supplement standards.

For some natural ingredients that do not have official standards, other authoritative monographs are also utilized by industry for quality control standards including those of the American Herbal Pharmacopoeia and the British Herbal Pharmacopoeia, respectively.

These standards can provide valuable guidance to producers that may facilitate increased trade if the natural ingredients are documented to be in compliance, especially through independent laboratory certificates of analysis. A certificate of analysis document for each lot number of the natural ingredient should state which specific set of pharmacopoeial standards were used for testing (e.g. USP-NF or PhEur) and report the results of all tests, thereby showing that the ingredient conforms with the monograph, in which case the natural ingredient can be labeled and traded as “pharmacopoeial-grade” (e.g. Chamomile NF), and command a premium over lower commercial grades. The certificate of analysis must also be signed and dated by a qualified person of the QC Unit, or by the responsible chemist at the independent testing laboratory.
3.3.1 United States National Formulary (USNF)

Natural Ingredients with Official Monographs in the USNF:

- American Ginseng Root
- Powdered American Ginseng Extract
- Anise Fruit Oil
- Powdered Asian Ginseng Extract
- Asian Ginseng Root
- Caraway Fruit
- Caraway Fruit Oil
- Cardamom Seed
- Cardamom Seed Oil
- Compound Cardamom Tincture
- Chamomile Flowerhead
- Chocolate Powder
- Clove Flower Oil
- Cranberry Liquid
- Echinacea Angustifolia Rhizome & Root
- Powdered Echinacea Angustifolia Extract
- Echinacea Pallida Rhizome & Root
- Powdered Echinacea Pallida Extract
- Echinacea Purpurea Rhizome & Root
- Powdered Echinacea Purpurea Extract
- Eleuthero Rhizome & Root
- Powdered Eleuthero Extract
- Fennel Fruit Oil
- Feverfew Leaf
- Garlic Bulb
- Garlic Fluidextract
- Powdered Garlic Extract
- Ginger Rhizome
- Ginger Tincture
- Ginkgo Leaf
- Goldenseal Root & Rhizome
- Powdered Goldenseal Extract
- Hawthorn Leaf with Flower
- Horse Chestnut Seed
- Powdered Horse Chestnut Extract
- Juniper Tar
- Lemon Peel Oil
- Licitrice Root, Rhizome & Stolon
- Powdered Licitrice Extract
- Licitrice Fluidextract
- Milk Thistle Fruit
- Powdered Milk Thistle Extract
- Orange Peel Oil
- Orange Peel Tincture
- Orange Syrup
- Peppermint Leaf & Flowering Top
- Peppermint Leaf Oil
- Peppermint Spirit
- Peppermint Water
- Red Clover Inflorescence
- Powdered Red Clover Extract
- Rose Flower Oil
- Rose Water Ointment
- Stronger Rose Water
- St. John’s Wort Flowering Tops
- Saw Palmetto Fruit
- Saw Palmetto Extract
- Valerian Rhizome, Root & Stolon
- Powdered Valerian Extract
- Vanilla Fruit
- Vanilla Tincture

3.3.2 United States Pharmacopeia (USP)

Natural Ingredients with Official Monographs in the USP:

- Aloe dried latex of the leaves of Aloe barbadensis Miller or of Aloe ferox Miller and hybrids of this species with Aloe africana Miller and Aloe spicata
- Belladonna leaf dried leaf and flowering or fruiting top of Atropa belladonna Linné
- Cascara Sagrada dried bark of Rhamnus purshiana De Candolle
- Digitalis dried leaf of Digitalis purpurea Linné
- Elm dried inner bark of Ulmus rubra Muhlenberg
- Ipecac dried rhizome and roots of Cephaëlis acuminata or of Cephaëlis ipecacuanha
- Myrrh oleo-gum-resin from stems and branches of Commiphora molmol Engl. and other related species of Commiphora other than Commiphora mukul
- Plantago seed cleaned, dried, ripe seed of Plantago psyllium Linné, or of Plantago indicा Linné, or of Plantago ovata Forskal
- Psyllium husk clean, dried seed coat separated by winnowing and threshing from the seeds of Plantago ovata Forskal, or from Plantago psyllium Linné, or from Plantago indicा Linné
- Rauwolfia dried root of Rauwolfia sepentina (Linné) Bentham ex Kurz
- Senna dried leaflet of Cassia acutifolia Delile or of Cassia angustifolia Vahl
- Tolu Balsam balsam from Myroxylon balsamum (Linné) Harms
4 PRICES

Most of the thousands of natural ingredients that are used in cosmetic and/or dietary supplement products in the US are not commodities, with some exceptions (e.g. flaxseed oil), and therefore CIF or wholesale pricing information is not readily or publicly available. Most producers do not publish their price schedules, with certain exceptions, and most prefer to prepare price quotations on a case-by-case basis in response to serious inquiries.

Quotes may be dependent on a number of factors including the desired grade and quality, any unique specifications (e.g. a stock item that may require additional processing steps in order to meet a customer’s unique particle size or density requirement), the single-order quantity, the total (annual) contract quantity, the total value of business conducted with the customer over a period of time, etc., as well as other conditions such as whether the total shipment can be sent directly to the customer’s warehouse or whether it must be stored at a consolidation warehouse thus allowing the customer to take draws from the contract on a just-in-time basis or according to a predetermined future delivery schedule.

The Internet is not a reliable source for obtaining commercial price ideas for natural ingredients, with some rare exceptions. Internet marketers often publish only consumer and retail pricing schedules, for example, for less than 1 kg quantities, which is not useful information for the product manufacturer buyer. Some of the same suppliers that provide low quantity pricing on the Internet, however, may also offer commercial quantities, with individualized price quotes prepared upon request from serious buyers.

The Market News Service for Medicinal Plants and Extracts is a quarterly publication available from the International Trade Centre (ITC) (See Appendix V: Trade Press), that provides indicative ton pricing of selected high-demand medicinal herbs and extracts from several major world markets including North America, Western Europe, Eastern Europe, Northern Africa, China and India.

Many natural ingredients that are used in cosmetics and/or dietary supplements are also classified, in some cases, as “spices” (e.g. cayenne fruit or ginger rhizome), and therefore indicative ton pricing for such natural ingredients may also be obtained from the ITC’s Market News Service Spices World Report, a weekly publication that includes quotes for a range of herbs in selected markets in Asia, Europe, the Middle East and the US.

Prices listed in the aforementioned ITC publications, however, can only be considered indicative.

Members of the Herb Growing & Marketing Network can list crops that they have available on the Herb Crop Shop message board, providing date of availability, price, quantity, etc. Prospective buyers can also list what they’re looking for; Available at: http://www.herbworld.com/cropshop/disc1_welc.htm
5 DISTRIBUTION CHANNELS

The cosmetic and/or dietary supplement product manufacturer’s buyer, in most cases, purchases natural ingredients from a range of different supplier types. For example, botanical raw materials, fresh or dried, in whole or cut forms, may be purchased directly from herb farms or from companies or individuals specializing in wildcrafting. Essential oils may be purchased directly from distillers, and extracts and oleoresins from commercial extraction houses, and so on. Please refer to Appendix II for a list of US importers and distributors of natural ingredients. It is important to note that many herb farms in the US also import and distribute various natural ingredients from foreign farms and wild collectors and/or enter into contract grower arrangements in order to have certain crops grown (or collected) that require other climates.

Smaller product manufacturing companies will often purchase their natural ingredients from wholesale distribution companies that may offer some value-adding capabilities such as cutting and sifting, particle sizing, granulation, blending, as well as laboratory analysis with certificate of analysis documentation. On the other hand, many wholesale distribution companies might only purchase the ingredients from the primary producers, then re-pack into smaller containers, re-labeling them in order to not disclose their sources.

Here are a few examples of typical natural product trade flows from an ingredient’s origin in the developing country to the consumer in the US:

Farm or Wildcrafter in Developing Country ⇒ Value-Adding Company (e.g. extraction house or oil distiller) or Import/Export Trader in the Developing Country ⇒ US Import/Export Trading Company ⇒ Processor (cutting, sifting, repacking) and/or Bulk Ingredient Distributor ⇒ Consumer Product Manufacturing Company ⇒ Consumer Product Wholesale Distribution Company ⇒ Retail Store ⇒ Consumer

Farm or Wildcrafter in Developing Country ⇒ Value-Adding Company or Import/Export Trader in the Developing Country ⇒ US or European Processor (cutting & sifting, extraction, laboratory analysis) ⇒ US Consumer Product Manufacturing Company ⇒ Consumer Product Wholesale Distribution Company ⇒ Retail Store ⇒ Consumer

Farm or Wildcrafter in Developing Country ⇒ Value-Adding Company or Import/Export Trader in the Developing Country ⇒ Direct to US Consumer Product Manufacturer (with value-add capabilities such as extraction, bottle filling and labeling) ⇒ Consumer Product Wholesale Distribution Company ⇒ Retail Store ⇒ Consumer

Farm or Wildcrafter in Developing Country ⇒ Direct to US Extraction Company ⇒ US Consumer Product Manufacturer ⇒ Consumer Product Wholesale Distribution Company ⇒ Retail Store ⇒ Consumer

Farm or Wildcrafter in Developing Country ⇒ Direct to US Consumer Product Manufacturer (with value-add capabilities such as milling, extraction and final packaging) ⇒ Consumer Product Wholesale Distribution Company ⇒ Retail Store ⇒ Consumer
In many cases, natural product marketing companies have no production capabilities and, therefore, have their products manufactured entirely by a contract manufacturing company. The product marketing company may specify the grade and quality of natural ingredients for their consumer products, and they may even specify the ingredient supplier from whom the contract manufacturer must purchase the ingredients. More often, however, the contract manufacturer is entrusted to purchase the natural ingredients based on their own criteria and best relationships. In such cases, it may be more important for the natural ingredient producer to develop a relationship with the contract manufacturer than with the product marketing company.

There are also a number of vertically-integrated natural product companies in the US. Several natural product companies own and operate their own farms or have contract grower arrangements for some of their natural ingredient supply requirements. Examples of vertically-integrated cosmetic and/or herbal dietary supplement companies in the US include Amway Corporation, which owns Trout Lake Farm (four farm locations; Washington, California, Mexico, Brazil), Eclectic Institute, which operates a 90 acre organic herb farm, Herb Farm, which operates an 85 acre organic herb farm, Young Living, which operates a 1,600 acre organic herb farm (two locations), and Gaia Herbs, which operates a 250 acre organic herb farm. Additionally, 35% of Gaia Herbs is owned by Pure World, Inc., which also owns Pure World Botanicals, a manufacturer and marketer of natural ingredients for cosmetic and dietary supplements. The aforementioned natural product companies also have extraction and/or distillation facilities at their farm locations, as well as packaging and labeling equipment for packing the final dosage form. Please refer to the Herb Farms section of Appendix II for details.

Other US natural product companies also own and operate foreign farms, have joint ventures with foreign farms, or contract with foreign growers for specific crops. For example, New Chapter, a manufacturer and marketer of natural cosmetics (e.g. GeremyRose® brand skin care products) and herbal dietary supplement products (e.g. Supercritical Therapy® brand), operates Luna Nueva Farm in La Tigra, Costa Rica, a 74 acre certified organic and biodynamic ginger and turmeric farm. Another example is Guayaki Sustainable Rainforest Products, which has its maté leaf certified organically grown on the 20,000 acre Guayaki Rainforest Reserve in Paraguay.

A leading US natural cosmetic brand, Aveda Corporation, has financed the construction of a babassu processing facility and a soap-making facility in Brazil. Aveda buys certified organic babassu directly from the women's collectives in the region, bypassing importers and middleman companies. Aveda Corporation also works in partnership with the non-profit Conservation International in the Madre de Dios territory of Peru to develop environmentally friendly businesses that encourage the conservation of their natural resources, with activities including the production of innovative natural ingredients for Aveda products.

Another interesting example is Renaissance Herbs, a vertically-integrated US company that markets not only bulk natural ingredients (a range of branded Ayurvedic, Chinese, and Specialty Nutriceutical extract ingredients for cosmetics and dietary supplements) but also a dietary supplement consumer product line (Ayurceutics™). Renaissance owns an extract manufacturing facility in India, which organizes its own botanical raw material procurement and manufactures its branded products for distribution in the US.

Finally, it is also important to realize that some of the leading cosmetic and dietary supplement consumer products in the US market are actually manufactured in Europe. These foreign natural products are re-labeled for the US market and distributed by the foreign company’s US sales and marketing division, or through a
subsidiary, or by a company that has obtained exclusive sales and marketing rights for the US. For example, EuroPharma™ (http://www.europharmausa.com/) distributes European-made natural personal care products and natural medicines.

Leading natural cosmetics brands in the US that are manufactured in Europe include Börlind of Germany (http://www.borlind.com/), Camocare® (http://www.camocare.com/), Dr. Hauschka (http://www.drhauschka.com/), and Weleda (http://usa.weleda.com/). In the case of European natural products being distributed in the US, the natural ingredient producers and exporters in developing countries will need to develop relationships with the product manufacturer’s buyers located in Europe rather than with the product marketers in the US.
6 PACKAGING AND LABELING

Depending on the specific natural ingredient(s) being imported into the US, one or more governmental agencies may become involved in the inspection of the imported goods, their packaging, labeling and related documentation, including the Animal and Plant Health Inspection Service (APHIS), Drug Enforcement Agency (DEA), Food and Drug Administration (FDA), Food Safety Inspection Service (FSIS), United States Department of Agriculture (USDA), and the US Customs Service.

In addition to legal requirements for the packaging and labeling of imported ingredients, importers are likely to have their own specific, additional packaging and labeling requirements, for example requirements that the seller’s lot number is stenciled on each sack or drum, as well as the buyer’s item code number and the purchase order number. The buyer may also specify the packaging type (e.g. poly-lined 55 gallon fiber drum) and the pallet type and configuration. In general, natural ingredients should be packed in tightly sealed, lined containers that will protect against cross-contamination, spillage, moisture damage, and insect infestation.

Labeling requirements include:
- English name of the ingredient
- English name of country of origin
- Name and address of the producer
- Gross weight
- Net and tare weights
- Vendor’s lot number (must match lot number on packing list)
- Any other information requested by the buyer (e.g. buyer’s item code)

If the imported natural ingredient is certified organic, the following USDA National Organic Program regulations may also apply:

§ 205.307 Labeling of nonretail containers used for only shipping or storage of raw or processed agricultural products labeled as “100 percent organic,” “organic,” or “made with organic (specified ingredients or food group(s)).”

(a) Nonretail containers used only to ship or store raw or processed agricultural product labeled as containing organic ingredients may display the following terms or marks:
1. The name and contact information of the certifying agent which certified the handler which assembled the final product;
2. Identification of the product as organic;
3. Special handling instructions needed to maintain the organic integrity of the product;
4. The USDA seal;
5. The seal, logo, or other identifying mark of the certifying agent that certified the organic production or handling operation that produced or handled the finished product.
(b) Nonretail containers used to ship or store raw or processed agricultural product labeled as containing organic ingredients must display the production lot number of the product if applicable.

Ingredient nomenclature
Dietary supplement law requires product ingredients labeling to be consistent with the Standard Common Names (SCN) as defined in the American Herbal Products Association’s *Herbs of Commerce*. Cosmetic ingredients must use nomenclature found in the International Cosmetic Ingredient Dictionary and Handbook published by the Cosmetic Toiletries and Fragrance Association (CTFA).

Country of origin marking requirements
Every article of foreign origin entering the US must be legibly marked with the English name of the country of origin unless an exception from marking is provided for in the law. The marking must be legible, of an adequate size, and clear enough, to be read easily by a person of normal vision. The marking should be located in a conspicuous place, where it can be seen with a casual handling of the article. Abbreviations that unmistakably indicate the name of a country, such as “Gt. Britain” for Great Britain or “Luxemb” for Luxembourg, are acceptable. Variant spellings which clearly indicate the English
name of the country of origin, such as “Brasil” for Brazil and “Italie” for Italy are acceptable. However, it is always preferable to spell out the country’s name in full, because any abbreviation may be a cause for confusion. However, “E.C.” or “E.U.” for European Community or European Union, respectively, are not acceptable abbreviations since they do not indicate the individual country of origin of the good.

The best form of marking is one which becomes a part of the article itself, such as branding, stenciling, stamping, printing, molding, and similar methods. Other forms of marking, such as adhesive labels, also will be acceptable if it is certain that the marking will remain legible and conspicuous until the article reaches the ultimate purchaser in the United States. When tags are used, they must be attached in a conspicuous place and in a manner which assures that, unless deliberately removed, they will remain on the article until it reaches the ultimate purchaser.139

FDA
To ensure that FDA is notified of all regulated products imported into the US, the importer, or his/her representative, must file an entry notice and an entry bond with the US Customs Service (Customs) pending a decision regarding the admissibility of the product. FDA inspection and enforcement procedures for imports rely on coordination with Customs. FDA is notified by Customs of the entry and makes a decision as to the article's admissibility. If FDA does not wish to examine the entry, the product is allowed to proceed into US commerce.

USDA
USDA regulatory activities are enforced by the Animal and Plant Health Inspection Service (APHIS), the Food Safety Inspection Service (FSIS), and Agricultural Marketing Service (AMS), among other agencies. In addition, the US Customs Service participates by the detaining of imports when USDA requirements have not been met. APHIS is responsible for enforcing regulations governing the import and export of plants and animals and certain agricultural products. APHIS import requirements depend on both the product and the country of origin. Plants and plant materials usually must be accompanied by a phytosanitary certificate issued by an official of the exporting country.

For USDA National Organic Program regulations, visit: http://www.ams.usda.gov/nop/NOP/NOPhome.html

US CUSTOMS SERVICE
The US Customs Service cooperates with a number of other Federal agencies, and a license or permit from the responsible agency is necessary to import a range of products including plants and plant products.
7 SALES PROMOTION

Natural ingredient producers and exporters in developing countries should consider exhibiting at relevant supply expos in the US in order to establish contacts with product manufacturer’s buyers or to investigate the possibility of securing a business arrangement, exclusive or otherwise, with a suitable importing and ingredient distribution company or broker. It may be possible to obtain the latter without exhibiting, but by only visiting the trade fair and making appointments in advance for private meetings with targeted potential business partners. Meetings with purchasers should be firmed up in advance and should take place away from the show floor if possible. Ingredient distributors generally have only their sales and marketing personnel in the exhibition booth while their purchasing agents may be meeting with their vendors privately at other locations such as hotel suites or restaurants.

Visiting the trade fair can also provide the exporter with valuable market information by attending educational seminars, trade association meetings, industry receptions, and by walking the show floor. Whether visiting or exhibiting, the natural ingredient producer should be prepared with professional printed materials in English language providing an overview of capabilities and a list of offerings.

If the costs of trade fair exhibition are beyond the means of an individual ingredient producer, it may be possible to organize a cooperative exhibition including several producers from the same region under one umbrella, in some cases, partially organized or funded by the export promotion agencies in the country of origin or even by US trade development organizations that may have funding available to cover expenses for producers from developing countries to participate in study tours in the US in order to meet potential buyers and/or to attend trade shows.

The following trade fair is one of the main events of interest to producers of natural ingredients for the US natural cosmetics and dietary supplements market and for the natural product manufacturer’s buyers:

SupplySide International Trade Show and Conference
Virgo Publishing - Health & Nutrition Division, P.O. BOX 40079, Phoenix, AZ 85067-0079 USA
For exhibiting information, contact Todd Willis at 480-990-1101, ext. 1171.
For attendee information, contact Stacy Davis at 480-990-1101, ext. 1718.
URL: http://www.supplysideshow.com/

SupplySide is produced by the publishers of the Natural Product’s Industry Insider. Insider is subscribed to by more than 10,000 executives in the dietary supplement, food and cosmetic industries. SupplySide is the world’s largest trade show and conference for natural ingredient manufacturers and suppliers, and exhibitors and sponsors of SupplySide are the world’s leading suppliers of ingredients and services to the natural health product industry.

Please also refer to Appendix IV for a listing of other relevant trade events in the US for producers of natural ingredients in developing countries.
For the past three years, the US market for natural products, particularly the herbal dietary supplement segment, has been flat in contrast to the double-digit growth that was enjoyed throughout most of the 1990’s. The natural products industry has been plagued with a number of highly publicized negative reports of quality control problems (e.g. substandard quality of ingredients, misbranding, contamination with heavy metals and pesticide residues, etc.), unsubstantiated claims, as well as adverse event reports and other reports of undesired interactions with pharmaceutical drugs.

The sales of most dietary supplements in the US have been headed in a downward spiral for three consecutive years, with the exception of only a few products that are showing significant increases in sales. These few high-demand natural ingredients have been able offset the declining sales of most natural ingredients, thus saving the industry from an overall decline. One of the most important issues and challenges facing the US natural products industry today is the regaining of consumer confidence, which has been blemished due to the negative media reports, among other reasons. The demand is now clearly for natural ingredients that are tested and shown to be of consistent, high quality, and that have been proven to be safe and effective for their intended uses.

Natural ingredients with increasing demand are, in many cases, those that have been shown to alleviate conditions associated with aging. As the US population ages, natural products that are aimed towards the needs of consumers past the age of 40 have the best prospect of success. Any natural cosmetics, cosmeceuticals and/or dietary supplements that promise anti-aging or age-reversing benefits are popular, particularly if the natural ingredients have scientifically documented beneficial activity.

For example, demand is increasing for natural products that have been clinically proven to alleviate conditions associated with menopause, including, particularly, women’s health products such as certain extracts of black cohosh rhizome (e.g. GlaxoSmithKline Remifemin® Menopause, manufactured by Schaper and Brüümmer GmbH & Co. KG, Germany), red clover inflorescence, (e.g. Promensil®, manufactured by Novogen Laboratories Pty Limited, Australia) and soybean (e.g. Health from the Sun PhytoSoya®, manufactured by Arkopharma Laboratoires Pharmaceutiques, France). According to the Natural Marketing Institute Health and Wellness Trends Database 2003, an estimated 47.2% of women in the US use dietary supplements for menopausal conditions. While dietary supplements cannot be legally marketed in the US for treatment or management of serious disease conditions, an estimated 62.3% of women, nonetheless, use dietary supplements for conditions related to osteoporosis, 51.3% for heart disease, and 50.2% for cancer. In these cases, consumers must learn about the “off-label” uses of certain dietary supplement products through independent third-party literature or books, or through recommendations made by natural healthcare providers such as naturopathic doctors or licensed acupuncturists.

Also, any natural ingredients that have been shown to alleviate symptoms of an enlarged prostate in men, such as certain clinically-tested extracts of nettle root (e.g. Nature’s Way ProstActive Plus®, manufactured by Dr. Willmar Schwabe GmbH & Co, Germany), and/or saw palmetto fruit (e.g. Elusan® Prostate, manufactured by Plantes & Médecines, France) are also in demand, as well as natural ingredients that have a positive influence on sexual performance such as epimedium herb and maca root.

Natural ingredients with significant antioxidant capacity that are used in anti-aging cosmetic and/or dietary supplement products are also increasingly popular. Cosmeceutical natural ingredients such as
extracts of frankincense oleo-gum-resin, green tea leaf, rosemary leaf, and turmeric rhizome, among others, are used as active components of various antioxidant and anti-aging skin creams.142

The weight-loss industry also represents a huge potential market, albeit a very controversial and fast changing market, for certain natural ingredients due to an estimated 68 million American adults trying to lose weight. Determining the potential value of, and opportunities within, the weight-loss market for ingredient producers is difficult, however, because a significant amount of products in this sub-sector are not sold through the normal channels, but rather through radio and television infomercials (direct sale via telephone calls), commercial e-mail (spam), tabloid advertisements, direct mail, Internet websites, as well as through weight-loss franchises and direct marketing through multi-level companies. In 1999, total sales for weight loss supplements were estimated at US $4.6 billion. The retail value of the weight-loss industry includes, however, not only sales of dietary supplements, but also sales of low-calorie foods and drinks, sugar substitutes, meal replacements, OTC and prescription drugs, medical treatments, and other products or service related to weight loss.143 A significant portion of weight loss supplement sales formerly included extracts of ephedra herb, which, during the past year, has almost completely disappeared from the market due to various regulatory actions and lawsuits, as well as a refusal by insurance carriers to provide product liability insurance to product manufacturers who use controversial ingredients. Natural ingredients sold mainly to manufacturers of weight-loss products are a high-risk prospect as this sub-sector is more frequently subjected to punitive regulatory actions and lawsuits which can rapidly and adversely affect the market demand for an ingredient.

Prospect for traditional medicines
While sales of single-ingredient natural products have generally been in decline, sales of multiple-ingredient natural products have been increasing. This can be explained, in part, by the increasing popularity in the West of traditional systems of medicine (e.g. Ayurvedic Medicine and Traditional Chinese Medicine), wherein herbal and mineral combinations are typical. A growing number of Americans seek primary health care from practitioners of Traditional Chinese Medicine, Indian Ayurvedic Medicine, and Naturopathic Medicine, among other traditional medicine practitioners, rather than making office visits to conventional medical doctors.

In recent years, many foreign Traditional Herbal Medicine product lines have entered the US natural products market labeled as non-drug cosmetics (topical) or dietary supplements (oral). For example, Ayurvedic medicine products of the Himalaya Drug Company (Karnataka, India) are marketed in the US as dietary supplement products under the Himalaya USA brand, Japanese Kampo medicine products of Honso Pharmaceuticals (Nagoya, Japan) are marketed in the US under the Honso® brand, Tibetan medicines by Padma AG (Schwerzenbach, Switzerland) are marketed in the US under the Padma® brand, Traditional Chinese Medicine products by Mayway Corporation (Taiwan) are marketed in the US under the Plum Flower® brand, and a large range of traditional German and Swiss herbal medicine brands (oral and topical) are marketed in the US including Bekunis® (Bremen, Ger.), Bioforce® (Roggwil, Switz.), CamoCare® (Frankfurt, Ger.), Esberitox® and Remifemin® (Salzgitter, Ger.), HerpAlieve® (Emmerthal, Ger.), Iberogast® (Darmstadt, Ger.), Kneipp® (Würzburg, Ger.), Olbas® (Uzwil, Switz.), Pharmaton® (Basel, Switz.), Ricola® (Laufen, Switz.), and Sidroga® (Zofingen, Switz.), among many others. Some of the largest US natural product marketers including Nature’s Way (Utah) and Phytopharmaca (Wisconsin) specialize in the marketing of selected clinically-tested European-made Traditional Herbal Medicine products as well as standardized phytopharmaceutical products.
Prospect for organic products
The fastest growing natural products subcategory in North America is for certified organic products, including organic cosmetics, foods and dietary supplements. The North American “green” consumer is willing to pay a premium for safe and effective natural remedies that are also produced in an ecologically and economically sustainable manner. Certified organic products (of all types including herbal) in particular, once considered only a niche market, are enjoying dramatic growth due to burgeoning consumer interest in all things organic. Since 1990, retail sales of organic products in the US have grown an average of 20% annually. They are now available in 20,000 natural foods stores and are sold in 73% of all conventional grocery stores. With the passage of the US Department of Agriculture (USDA) National Organic Program, continued growth in the organic industry is expected.144

One of the clear opportunities for medicinal herb producers in developing countries is to respond to the growing US preference for “green” or “ecologically sustainable” natural ingredients and finished products over those that contain synthetic components and/or over those that are produced via non-sustainable or conventional methods. On the other hand, consumers and healthcare providers also want clear assurances that medicinal herbal ingredients are of the highest medicinal quality and purity and can be relied on for consistent therapeutic results. North American and European consumers will apparently pay a premium for these assurances.

Suppliers who can gain the expertise required to produce and market not only “pharmacopoeial-grade” natural ingredients but also “certified organic” and/or “certified biodynamic” pharmaceutical botanicals, may have an excellent opportunity in the future. By developing the know-how to produce pharma-grade organic herbs, the consumer and healthcare provider can have assurances that satisfy both their ecological and therapeutic expectations.

Ingredients produced in the US
Organic acreage in the US doubled during the 1990’s up to at least 1.3 million acres (= 479,705 hectares) and the USDA reports that organic acreage has continued to expand significantly through 2001.145 A recent estimate of total US acreage dedicated specifically to medicinal plants is 6,400 cultivated acres (= 2,362 hectares) with an additional 83,388 uncultivated acres (= 30,752 hectares) where wild certified organic herbs are collected.146

Many of the top-selling natural ingredients in the US cosmetics and dietary supplement markets are already produced on a relatively large scale in North America (US, Canada, or Mexico), e.g. aloe vera gel and juice, cayenne fruit and oleoresin, cranberry fruit and juice, echinacea herb & root & extract, evening primrose oil, flaxseed oil, garlic bulb, ginseng root & extract, jojoba oil, peppermint leaf & oil, soybean, saw palmetto fruit & extract. Other top-sellers are imported mainly from some of the world’s largest and most economical producers, for example garlic bulb, ginger rhizome, ginkgo leaf & extract, ginseng root & extract, and green tea leaf & extract from China, while bilberry fruit & extract, milk thistle seed & extract, St. John’s wort herb & extract, and valerian root & extract are all imported mainly from EU countries.

It is not generally advisable for the producers in developing countries to consider the cultivation and production of any native North American medicinal and/or aromatic herbs that are already produced on a large scale in the US or Canada, unless the production is carried out under a firm contract grower agreement on a guaranteed sale basis. However, for some US-produced natural ingredients, such as cayenne, ginger and jojoba, US consumption is very close to, or higher, than US production, which therefore points to a potential opportunity for Andean producers of the same
ingredients to watch carefully for future production planning.

Natural ingredients that apparently have the greatest chance of success towards capturing the growing market for “green” products in the US market have one or more of the following characteristics (the more the better):

- Certified organic or certified Biodynamic®, or ethically wild-crafted according to Good Agricultural and Collection Practice (GACP) guidelines
- Certified “Cruelty Free” (not tested on animals)
- Certified to be free of genetically engineered components (GE-free)
- Certified Fair Trade®
- Pharmacologically and/or clinically tested for efficacy
- Long history of use in a traditional system of natural medicine
- Produced under current Good Manufacturing Practices (cGMPs)

Opportunities for Andean producers
Some native South American botanicals are already fairly well established in the US natural products market, for example cat’s claw stem bark (Uncaria tomentosa (WILLD.) DC), which is imported from Peru, cayenne fruit (Capsicum annuum L. var. minimum (MILLER) HEISER), which is imported from Peru and Brazil, guaraná seed (Paullinia cupana KUNTH. ex H.B.K.), which is imported from Brazil, Columbia, Costa Rica, Panama, and Venezuela, maca root (Lepidium meyenii WALP), which is imported from Peru, maté leaf (Ilex paraguariensis ST.-HIL.), which is imported from Brazil, Argentina, Paraguay, Uruguay, Antigua and Barbuda, and Peru, as well as pau d’arco bark, (Tabebuia impetiginosa (MARTIUS ex DC.) STANDLEY), which is imported mainly from Brazil and Argentina. Ipecac rhizome and root (Cephaëlis acuminata H. KARST. or Cephaëlis ipecacuana (BROT.) TUSSAC), which is wild collected mainly in Brazil, but also Costa Rica and Nicaragua, is not permitted for use in cosmetic or dietary supplement products. It is used to make Ipecac Syrup USP, which is an OTC poison treatment drug. The FDA is presently deciding, however, whether to move it from OTC to prescription (Rx) drug status.

Some botanicals, not native to South America are also imported into the US in significant amounts such as black tea leaf from Argentina and ginger rhizome from Brazil and Ecuador, as well as from Central American countries.

Cat’s claw bark and maca root
Many of the Andean natural ingredients that are of strong interest to the US natural products market, however, are native to very specific zones of South America and may be difficult, if not impossible, to bring into cultivation elsewhere. For example, experiments to cultivate the native Peruvian plant maca root at other latitudes (e.g. lat. 52°N in Germany) have failed.147 Traditional knowledge, intellectual property rights, and cooperative business arrangements with indigenous people in order to gain consistent access to the proper qualities of raw materials are also factors protecting and supporting South American natural ingredient producers at this point.

In a 2001 annual survey of US natural product retailers conducted by Whole Foods Magazine, the Peruvian botanical maca root scored within the top ten herbs that respondents believed were “up-and-coming” in the US market.148

South American natural ingredients that have gained the greatest acceptance in the US market thus far, include those that are primary components of pharmacologically and/or clinically tested herbal dietary supplement products (e.g. certain cat’s claw bark extracts and maca root extracts); for example, Planetary Formulas® Full Spectrum™ Maca Extract, which contains Pure World Botanicals pharmacologically tested, patented and branded ingredient MacaPure™, and Pinnacle Horny Goat Weed™, a clinically tested product that also contains the Pure World brand MacaPure™ extract, in combination with extracts of epimedium...
herb (Epimedium brevicornum MAXIM.),
velvet bean (Mucuna pruriens (L.) DC.),
and polypody (Polypodium vulgare L.).
Clinically tested cat’s claw bark extract
products available in the US market include
C-MED-100® (manufactured by Optigene-X,
New Jersey) and PhytoPharmica®
Saventaro® (manufactured by IMMODAL
Pharmaka GmbH, Austria).

Maté leaf
The popularity of maté leaf dietary
supplement products in the US market has
been steadily growing. In 2000, the US
imported 556,458 kg, in 2001 873,611 kg,
and in 2002 1,050,604 kg. According to
SPINS scan data, retail sales of maté leaf
teas accounted for nearly US $2.5 million in
2002, up 34.1% from 2001. Increasing maté
sales are being driven by a number of
factors including the sustainable
agriculture efforts promoted by some of
the leading brands. For example, Guayaki
Sustainable Rainforest Products appears to
successfully promote the concept of
“Market-Driven Conservation” in order to
establish environmental, social, and
economic sustainability through conscious
consumerism. Their maté leaf product is
certified organically grown on the 20,000
acre Guayaki Rainforest Reserve in
Paraguay, which supports an indigenous
community of 34 families who share 2,500
acres of donated rainforest land. The
growing popularity of their maté products
is directly related to the US consumer’s
desire to financially support the indigenous
community that cultivates the maté in
Paraguay. Sales of maté in the US are also
driven somewhat by its status in EU
countries, for example Germany’s expert
Commission E approved maté leaf tea as a
non-prescription drug for treatment of
mental and physical fatigue, and in
France, maté was also approved as a
non-prescription remedy indicated for
functional asthenia (weakness; lack of
energy and strength), as an adjunctive
treatment in weight loss programs, and as a
diuretic (to enhance the renal excretion of
water). American are becoming more
aware that many of the natural cosmetic
and dietary supplement products available
in the US are actually approved OTC drugs
in Canada and EU countries, which can
affect consumer perception of the safety
and efficacy of certain natural products.

Other Andean Natural Ingredients
Some Andean produced natural ingredients,
however, are relative newcomers to the US
natural products market, for example
boldo leaf (Peumus boldus MOLINA),
chuchuhuasi bark (Maytenus krukovii A.C.
SM.), condurango bark (Marsdenia
condurango RCHB. f.), dragon’s blood
croton (Croton lechleri MÜLL. ARG.), neem
leaf (Azadirachta indica A. JUSS.) (also
mostly imported from India), and purple
corn extract (Zea mays L.). Successfully
introducing a new natural ingredient to the
US market requires some amount of
investment and education.

Boldo leaf
Boldo leaf is more widely used in the EU
than in the US, and it is imported mainly
from Chile and Peru. In the US dietary
supplement trade, it is found so far in only
a few European-made natural products,
e.g. Good Earth® Medicinals™ Tea for
Digestion™ (Kräuterfarrer Künzle AG,
Minusio, Switzerland), Bioforce® Milk
Thistle Complex (Bioforce AG, Roggwil,
Switzerland), and Elusan® Liver Support
(Plantes & Médecines, Toulouse, France).
As the European-made natural products
become more popular in the US market,
there may be a potential for US companies
to eventually become interested in
formulating new US-made products with
boldo leaf.

Chuchuhuasi bark
There are now a few product
manufacturers in the US that specialize in
promoting the use of South American
natural ingredients like chuchuhuasi bark,
among others, in their products, sold
usually via direct marketing or mail order,
including:

Amazon Herb Company
http://www.amazonherbcompany.net/
Asháninka Products
http://www.ashaninka.com/products.htm
Raintree Nutrition
http://www.amazonherbcompany.net/
Dietary supplement products in the US that contain chuchuhuasi bark include Amazon Teas Shipibo Maté Tea™ (chuchuhuasi bark in combination with maté leaf, pau d'arco bark and cat's claw bark), Asháninka Chuchuhuasi Liquid Tincture, Raintree Nutrition® Chuchuhuasi Concentrated Extract, and Solaray® Chuchuhuasi Capsules.

**Condurango bark**

Condurango bark is more widely used in the EU than in the US, and it is imported mainly from Ecuador, Peru and Columbia. There are a just a few European-made dietary supplements in the US that contain condurango bark, e.g. Padma Lax® (Padma AG, Schwerzenbach, Switzerland). There are a few smaller US companies that use this herb in dietary supplement products, although they are not widely distributed at this point. If demand increases for European-made, clinically-tested natural products that contain condurango bark such as Padma Lax®, it is possible that US companies may also become interested in formulating new US-made products with this herb.

**Dragon’s blood croton**

As an example of one US company’s efforts to promote a new Andean natural ingredient, Shaman Pharmaceuticals (South San Francisco, California) initially became interested in dragon’s blood croton tree sap for treating diarrhea through ethnobotanical field research. In order to preserve the ecological sustainability of this natural ingredient for local producers in Peru, Shaman invested US $1 million in a series of innovative initiatives including publishing research on its medicinal benefits as well as an agroforestry educational manual and a book on the biological, anthropological and legal aspects of managing the species. Shaman has also paid for the reforestation of more than 300,000 dragon’s blood croton trees, conducted local workshops on sustainable forestry, and invested in the creation of local economic alternatives for indigenous peoples and other communities.\(^{152}\) In 2000, Shaman licensed their dragon’s blood croton product to the General Nutrition Corporation (GNC), a member of the Numico family of companies, which then enabled the new product to be featured in 4,200 GNC health food stores as well as over 500 Rite AID pharmacies.

**Purple corn extract**

Another example is Peruvian purple corn extract, which Ashaninka Products (Miami, Florida) has been actively promoting in the US (branded ingredient: Purple-X). Ashaninka’s Purple-X product is extracted from purple corn, organically grown in the Peruvian Andes, and it is marketed as a natural ingredient for nutraceuticals drinks, dietary supplements, food coloring, and functional foods.

Other Andean natural ingredients are almost completely unknown to the US market at this point, and will therefore require some amount of educational and promotional activities in order to create awareness and demand from the natural product formulators, for example,

**from Colombia:**
- anamú leaf & root (*Petiveria alliacea* L.)
- bushy matgrass (*Lippia alba* (Mill.) N.E. BR. ex BRITTON & P. WILSON)
- calabash tree extract (*Crescentia cujete* L.)
- chuchuhuasi bark (*Maytenus krukovii* A.C. SM.)
- condurango bark (*Marsdenia cundurango* RCHB. f.)
- yoco (*Paullinina yoco* SCHULTES & KILLIP)

**from Ecuador:**
- ambrette (*Abelmoschus moschatus* MEDIK.)
- chuchuhuasi bark (*Maytenus krukovii* A.C. SM.)
- condurango bark (*Marsdenia cundurango* RCHB. f.)
- ishpingo (*Ocotea quixos* KOSTERM)
- Palo Santo (*Bursera graveolens* TRIANA & PLANCH.)
from Peru:

- camu-camu fruit (*Myrciaria dubia* (KUNTH) McVAUGH)
- chuchuhuasi bark (*Maytenus krukovii* A.C. SM).
- condurango bark (*Marsdenia cunduranga* RCHB. f.)
- hercampuri (*Gentianella algorosea*)
- Inca peanut seed (*Plukenetia volubilis* L.)
- muña herb extract (*Mynthostachys setosa*)
- phyllanthus extract (*Phyllanthus niruri* L.)
- yacón root extract (*Smallanthus sonchifolius* (POEPP. & ENDL.) H. ROBINSON).

Camu camu fruit

Of the above listed other Andean natural ingredients for the US market, only camu-camu is listed in the *Natural Products Industry Insider 2003 Buyer’s Guide*. The Buyer’s Guide lists 25 suppliers of camu-camu fruit in various forms including whole, cut or powdered and extract form, and eight of the suppliers offer certified organic camu camu fruit and/or extract.

Conclusion

In summary, there are certainly opportunities for Andean natural ingredients in the US market, particularly those ingredients that have been pharmacologically and/or clinically tested to be effective for age-related conditions, for example certain cat’s claw bark extracts for arthritic conditions and extracts of maca root for sexual stamina are already gaining popularity in the US.

Additionally, Andean natural ingredients that are obtained in an economically and environmentally sustainable manner with a reciprocally beneficial relationship between the US buyer and the Andean supplier are good models such as the aforementioned relationships between the *Aveda Corporation* and local communities in the Madre de Dios territory of Peru, the *Guayaki Sustainable Rainforest Products* organic cultivation of maté leaf that supports an indigenous community in the Paraguayan Guayaki Rainforest Reserve, and the *Herbs America Sustainable Harvest Company*, a marketer of maca root extract products, that promotes itself as supporting native land rights, rainforest protection policies, and sustainable agricultural methods by collaborating with traditional farmers in the Peruvian Junín plateau who only use only organic agricultural methods, among other examples.
# APPENDIX I  IMPORT/EXPORT STATISTICS TABLES

## Table 1  US imports of tea leaf (green and black), 1998–2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 0902</td>
<td>$182,011,392</td>
<td>96,646,240</td>
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<tr>
<td>1999</td>
<td>HS 0902</td>
<td>$164,987,376</td>
<td>92,864,464</td>
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<tr>
<td>2000</td>
<td>HS 0902</td>
<td>$162,001,728</td>
<td>88,287,168</td>
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<tr>
<td>2001</td>
<td>HS 0902</td>
<td>$172,678,112</td>
<td>96,668,128</td>
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<tr>
<td>2002</td>
<td>HS 0902.20.9000</td>
<td>$114,525,000</td>
<td>83,757,422</td>
</tr>
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<td>HS 0902.40.0000</td>
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<td></td>
</tr>
</tbody>
</table>

**NOTE:** 2002 data includes most, but not all, parts of HS 0902


## Table 2  US exports of tea leaf (green and black), 1998–2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 0902</td>
<td>$16,357,769</td>
<td>4,595,114</td>
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<tr>
<td>1999</td>
<td>HS 0902</td>
<td>$21,332,944</td>
<td>6,204,965</td>
</tr>
<tr>
<td>2000</td>
<td>HS 0902</td>
<td>$24,831,264</td>
<td>6,087,791</td>
</tr>
<tr>
<td>2001</td>
<td>HS 0902</td>
<td>$23,690,112</td>
<td>5,963,116</td>
</tr>
<tr>
<td>2002</td>
<td>HS 0902.10</td>
<td>$16,338,000</td>
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<tr>
<td></td>
<td>HS 0902.30</td>
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</tr>
<tr>
<td></td>
<td>HS 0902.40</td>
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<td></td>
</tr>
</tbody>
</table>

**NOTE:** 2002 data includes most, but not all, parts of HS 0902

### Table 3  US imports of maté leaf, 1998–2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 0903</td>
<td>$704,230</td>
<td>350,966</td>
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<tr>
<td>1999</td>
<td>HS 0903</td>
<td>$909,374</td>
<td>431,280</td>
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<tr>
<td>2000</td>
<td>HS 0903</td>
<td>$1,019,590</td>
<td>556,458</td>
</tr>
<tr>
<td>2001</td>
<td>HS 0903</td>
<td>$1,548,248</td>
<td>873,611</td>
</tr>
<tr>
<td>2002</td>
<td>HS 0903</td>
<td>$1,456,000</td>
<td>1,050,604</td>
</tr>
</tbody>
</table>


### Table 4  US exports of maté leaf, 1998–2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 0903</td>
<td>$441,634</td>
<td>113,056</td>
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<tr>
<td>1999</td>
<td>HS 0903</td>
<td>$219,291</td>
<td>37,687</td>
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<tr>
<td>2000</td>
<td>HS 0903</td>
<td>$197,388</td>
<td>61,649</td>
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<tr>
<td>2001</td>
<td>HS 0903</td>
<td>$74,837</td>
<td>12,768</td>
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<tr>
<td>2002</td>
<td>HS 0903</td>
<td>$90,000</td>
<td>31,781</td>
</tr>
</tbody>
</table>

Table 5  US imports of cayenne (Capsicum) fruit, black pepper (Piper), and pimenta, 1998–2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 0904</td>
<td>$312,823,584</td>
<td>97,555,264</td>
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<tr>
<td>1999</td>
<td>HS 0904</td>
<td>$365,333,760</td>
<td>113,604,912</td>
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<tr>
<td>2000</td>
<td>HS 0904</td>
<td>$359,625,824</td>
<td>112,591,832</td>
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<tr>
<td>2001</td>
<td>HS 0904</td>
<td>$249,699,024</td>
<td>124,307,296</td>
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<tr>
<td>2002</td>
<td>HS 0904.20.2000</td>
<td>$20,819,000</td>
<td>12,405,921</td>
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</tbody>
</table>

NOTE: 2002 data contains only one part of HS 0904


Table 6  US exports of cayenne (Capsicum) fruit, black pepper (Piper), and pimenta, 1998–2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 0904</td>
<td>$29,345,354</td>
<td>8,466,328</td>
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<tr>
<td>1999</td>
<td>HS 0904</td>
<td>$26,832,100</td>
<td>8,719,478</td>
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<tr>
<td>2000</td>
<td>HS 0904</td>
<td>$29,208,774</td>
<td>10,316,198</td>
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<tr>
<td>2001</td>
<td>HS 0904</td>
<td>$25,608,298</td>
<td>10,915,227</td>
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<td>2002</td>
<td>HS 0904</td>
<td>$18,028,000</td>
<td>8,637,129</td>
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</tbody>
</table>

### Table 7 US imports of seeds of anise, badian, caraway, coriander, cumin, fennel, and juniper berries 1998–2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 0909</td>
<td>$24,355,290</td>
<td>18,872,820</td>
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<td>1999</td>
<td>HS 0909</td>
<td>$21,667,554</td>
<td>18,942,136</td>
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<td>2000</td>
<td>HS 0909</td>
<td>$27,840,948</td>
<td>19,997,834</td>
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<td>2001</td>
<td>HS 0909</td>
<td>$31,213,310</td>
<td>20,618,108</td>
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<td>2002</td>
<td>HS 0909</td>
<td>$26,147,000</td>
<td>20,378,080</td>
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</table>


### Table 8 US exports of seeds of anise, badian, caraway, coriander, cumin, fennel, and juniper berries 1998–2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 0909</td>
<td>$1,609,134</td>
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<td>1999</td>
<td>HS 0909</td>
<td>$1,162,117</td>
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<td>2000</td>
<td>HS 0909</td>
<td>$1,434,295</td>
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<tr>
<td>2001</td>
<td>HS 0909</td>
<td>$2,985,946</td>
<td>1,639,723</td>
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<tr>
<td>2002</td>
<td>HS 0909</td>
<td>$1,294,000</td>
<td>826,108</td>
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</tbody>
</table>

Table 9  US imports of ginger rhizome, turmeric rhizome, saffron, thyme herb, bay leaf, and other spices 1998–2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 0910</td>
<td>$64,331,032</td>
<td>31,383,148</td>
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<td>1999</td>
<td>HS 0910</td>
<td>$68,358,952</td>
<td>34,355,040</td>
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<td>2000</td>
<td>HS 0910</td>
<td>$72,860,008</td>
<td>37,596,672</td>
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<td>2002</td>
<td>HS 0910.10.2000</td>
<td>$20,421,000</td>
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<td>HS 0910.10.4000</td>
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<td>HS 0910.30.0000</td>
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<tr>
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<td>HS 0910.40.2000</td>
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</table>

NOTE: 2002 data does not include bay leaf, curry, spice mixes, or other spices not listed


Table 10  US exports of ginger rhizome, turmeric rhizome, saffron, thyme herb, bay leaf, and other spices 1998–2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
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<tbody>
<tr>
<td>1998</td>
<td>HS 0910</td>
<td>$25,430,786</td>
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<td>1999</td>
<td>HS 0910</td>
<td>$29,301,892</td>
<td>9,530,515</td>
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<td>2000</td>
<td>HS 0910</td>
<td>$22,837,288</td>
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<td>2001</td>
<td>HS 0910</td>
<td>$21,574,798</td>
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<tr>
<td>2002</td>
<td>HS 0910.10.0000</td>
<td>$1,644,000</td>
<td>898,119</td>
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<td>HS 0910.20.0000</td>
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<td></td>
<td>HS 0910.30.0000</td>
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</tr>
<tr>
<td></td>
<td>HS 0910.40.2000</td>
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<td></td>
</tr>
</tbody>
</table>

NOTE: 2002 data does not include bay leaf, curry, spice mixes, or other spices not listed

Table 11 US imports of hop strobile 1998-2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
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<td>1998</td>
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<td>1999</td>
<td>HS 1210</td>
<td>$30,382,014</td>
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<td>2000</td>
<td>HS 1210</td>
<td>$29,756,110</td>
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<td>HS 1210</td>
<td>$24,980,136</td>
<td>4,633,253</td>
</tr>
<tr>
<td>2002</td>
<td>HS 1210</td>
<td>$19,491,000</td>
<td>3,334,883</td>
</tr>
</tbody>
</table>


Table 12 US exports of hop strobile 1998-2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 1210</td>
<td>$34,555,368</td>
<td>6,399,932</td>
</tr>
<tr>
<td>1999</td>
<td>HS 1210</td>
<td>$29,815,798</td>
<td>6,246,539</td>
</tr>
<tr>
<td>2000</td>
<td>HS 1210</td>
<td>$31,211,024</td>
<td>5,633,558</td>
</tr>
<tr>
<td>2001</td>
<td>HS 1210</td>
<td>$42,067,056</td>
<td>6,552,326</td>
</tr>
<tr>
<td>2002</td>
<td>HS 1210.10.0000</td>
<td>$27,682,000</td>
<td>4,804,440</td>
</tr>
<tr>
<td></td>
<td>HS 1210.20.0020</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HS 1210.20.0040</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 13  US imports of medicinal herbs used primarily in perfumery and pharmacy
(e.g. basil, ginseng, licorice, peppermint, psyllium, sage, senna)

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 1211</td>
<td>$186,550,624</td>
<td>62,297,928</td>
</tr>
<tr>
<td>1999</td>
<td>HS 1211</td>
<td>$144,761,264</td>
<td>53,084,552</td>
</tr>
<tr>
<td>2000</td>
<td>HS 1211</td>
<td>$143,705,392</td>
<td>50,332,504</td>
</tr>
<tr>
<td>2001</td>
<td>HS 1211</td>
<td>$148,215,616</td>
<td>55,737,340</td>
</tr>
<tr>
<td>2002</td>
<td>HS 1211.10.0000, HS 1211.20.0020, HS 1211.20.0040, HS 1211.90.2000, HS 1211.90.4020, HS 1211.90.4040, HS 1211.90.9020, HS 1211.90.9031, HS 1211.90.9040, HS 1211.90.9050, HS 1211.90.9080, HS 1211.90.9090</td>
<td>$128,954,000</td>
<td>54,238,327</td>
</tr>
</tbody>
</table>

NOTE: 2002 data does not include coca leaf or poppy straw


Table 14  US exports of medicinal herbs used primarily in perfumery and pharmacy
(e.g. basil, ginseng, licorice, peppermint, psyllium, sage, senna)

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 1211</td>
<td>$104,053,272</td>
<td>17,398,108</td>
</tr>
<tr>
<td>1999</td>
<td>HS 1211</td>
<td>$106,652,224</td>
<td>15,906,411</td>
</tr>
<tr>
<td>2000</td>
<td>HS 1211</td>
<td>$108,343,088</td>
<td>18,022,824</td>
</tr>
<tr>
<td>2001</td>
<td>HS 1211</td>
<td>$78,890,752</td>
<td>16,171,990</td>
</tr>
<tr>
<td>2002</td>
<td>HS 1211.10.0000, HS 1211.20.0020, HS 1211.20.0040, HS 1211.90.9025, HS 1211.90.9080, HS 1211.90.9095</td>
<td>$69,888,000</td>
<td>10,803,547</td>
</tr>
</tbody>
</table>

NOTE: 2002 data does not include coca leaf or poppy straw

### Table 15  US imports of seaweeds and other algae 1998-2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 1212.20</td>
<td>$40,531,144</td>
<td>28,620,452</td>
</tr>
<tr>
<td>1999</td>
<td>HS 1212.20</td>
<td>$47,174,896</td>
<td>55,909,940</td>
</tr>
<tr>
<td>2000</td>
<td>HS 1212.20</td>
<td>$46,749,132</td>
<td>38,528,868</td>
</tr>
<tr>
<td>2001</td>
<td>HS 1212.20</td>
<td>$43,193,256</td>
<td>44,577,380</td>
</tr>
<tr>
<td>2002</td>
<td>HS 1212.20</td>
<td>$41,640,000</td>
<td>43,896,468</td>
</tr>
</tbody>
</table>


### Table 16  US exports of seaweeds and other algae 1998-2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 1212.20</td>
<td>$9,810,729</td>
<td>1,773,413</td>
</tr>
<tr>
<td>1999</td>
<td>HS 1212.20</td>
<td>$9,095,875</td>
<td>1,627,160</td>
</tr>
<tr>
<td>2000</td>
<td>HS 1212.20</td>
<td>$10,026,942</td>
<td>1,575,937</td>
</tr>
<tr>
<td>2001</td>
<td>HS 1212.20</td>
<td>$11,955,945</td>
<td>1,725,286</td>
</tr>
<tr>
<td>2002</td>
<td>HS 1212.20</td>
<td>$12,755,000</td>
<td>1,923,930</td>
</tr>
</tbody>
</table>

### Table 17  US imports of lac, natural gums, resins, gum-resins and balsams 1998–2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 1301</td>
<td>$54,548,396</td>
<td>30,226,176</td>
</tr>
<tr>
<td>1999</td>
<td>HS 1301</td>
<td>$49,195,120</td>
<td>20,697,048</td>
</tr>
<tr>
<td>2000</td>
<td>HS 1301</td>
<td>$45,365,764</td>
<td>21,498,162</td>
</tr>
<tr>
<td>2001</td>
<td>HS 1301</td>
<td>$43,270,508</td>
<td>23,037,674</td>
</tr>
<tr>
<td>2002</td>
<td>HS 1301</td>
<td>$34,534,000</td>
<td>20,866,553</td>
</tr>
</tbody>
</table>

**NOTE:** 2002 data does not include bleached shellac.


### Table 18  US exports of lac, natural gums, resins, gum-resins and balsams 1998–2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 1301</td>
<td>$32,920,360</td>
<td>12,802,726</td>
</tr>
<tr>
<td>1999</td>
<td>HS 1301</td>
<td>$24,556,876</td>
<td>7,861,781</td>
</tr>
<tr>
<td>2000</td>
<td>HS 1301</td>
<td>$36,016,452</td>
<td>16,711,659</td>
</tr>
<tr>
<td>2001</td>
<td>HS 1301</td>
<td>$32,887,296</td>
<td>15,526,626</td>
</tr>
<tr>
<td>2002</td>
<td>HS 1301</td>
<td>$26,837,000</td>
<td>8,712,495</td>
</tr>
</tbody>
</table>

Table 19  US imports of vegetable saps and extracts (e.g. extracts of aloe, ginseng, hops, licorice), agar-agar, mucilages, etc. 1998–2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value</th>
<th>Trade Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HS 1302</td>
<td>$609,959,488</td>
<td>107,284,464</td>
</tr>
<tr>
<td>1998</td>
<td>HS 1302</td>
<td>$516,807,072</td>
<td>82,061,752</td>
</tr>
<tr>
<td>1999</td>
<td>HS 1302</td>
<td>$466,842,208</td>
<td>99,464,160</td>
</tr>
<tr>
<td>2000</td>
<td>HS 1302</td>
<td>$470,714,432</td>
<td>115,989,328</td>
</tr>
<tr>
<td>2001</td>
<td>HS 1302</td>
<td>$347,304,000</td>
<td>95,778,885</td>
</tr>
<tr>
<td>2002</td>
<td>HS 1302</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: 2002 data does not include opium and pyrethrum


Table 20  US exports of vegetable saps and extracts (e.g. extracts of aloe, ginseng, hops, licorice), agar-agar, mucilages, etc. 1998–2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value</th>
<th>Trade Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HS 1302</td>
<td>$197,728,064</td>
<td>25,772,212</td>
</tr>
<tr>
<td>1998</td>
<td>HS 1302</td>
<td>$197,491,696</td>
<td>25,569,340</td>
</tr>
<tr>
<td>1999</td>
<td>HS 1302</td>
<td>$218,991,936</td>
<td>28,177,880</td>
</tr>
<tr>
<td>2000</td>
<td>HS 1302</td>
<td>$260,477,376</td>
<td>31,789,160</td>
</tr>
<tr>
<td>2001</td>
<td>HS 1302</td>
<td>$236,833,000</td>
<td>29,453,908</td>
</tr>
<tr>
<td>2002</td>
<td>HS 1302</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: 2002 data does not include opium and pyrethrum

### Table 21 US imports of ground-nut oil and its fractions 1998-2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 1508</td>
<td>$30,081,690</td>
<td>30,336,200</td>
</tr>
<tr>
<td>1999</td>
<td>HS 1508</td>
<td>$9,409,103</td>
<td>9,633,005</td>
</tr>
<tr>
<td>2000</td>
<td>HS 1508</td>
<td>$14,850,255</td>
<td>18,916,986</td>
</tr>
<tr>
<td>2001</td>
<td>HS 1508</td>
<td>$26,457,208</td>
<td>34,649,096</td>
</tr>
<tr>
<td>2002</td>
<td>HS 1508</td>
<td>$20,761,000</td>
<td>31,108,186</td>
</tr>
</tbody>
</table>


### Table 22 US exports of ground-nut oil and its fractions 1998-2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 1508</td>
<td>$4,548,129</td>
<td>4,260,973</td>
</tr>
<tr>
<td>1999</td>
<td>HS 1508</td>
<td>$4,946,570</td>
<td>5,806,844</td>
</tr>
<tr>
<td>2000</td>
<td>HS 1508</td>
<td>$4,547,794</td>
<td>5,514,660</td>
</tr>
<tr>
<td>2001</td>
<td>HS 1508</td>
<td>$5,069,404</td>
<td>6,544,846</td>
</tr>
<tr>
<td>2002</td>
<td>HS 1508</td>
<td>$3,225,000</td>
<td>3,653,095</td>
</tr>
</tbody>
</table>

Table 23  
US imports of coconut (copra), palm kernel or babassu oil and fractions  
1998-2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 1513</td>
<td>$489,187,232</td>
<td>737,359,104</td>
</tr>
<tr>
<td>1999</td>
<td>HS 1513</td>
<td>$412,141,408</td>
<td>543,928,704</td>
</tr>
<tr>
<td>2000</td>
<td>HS 1513</td>
<td>$386,953,440</td>
<td>645,091,904</td>
</tr>
<tr>
<td>2001</td>
<td>HS 1513</td>
<td>$247,302,512</td>
<td>616,927,872</td>
</tr>
<tr>
<td>2002</td>
<td>HS 1513</td>
<td>$251,876,000</td>
<td>657,700,092</td>
</tr>
</tbody>
</table>


Table 24  
US exports of coconut (copra), palm kernel or babassu oil and fractions  
1998-2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 1513</td>
<td>$5,287,208</td>
<td>6,731,883</td>
</tr>
<tr>
<td>1999</td>
<td>HS 1513</td>
<td>$9,063,883</td>
<td>10,942,785</td>
</tr>
<tr>
<td>2000</td>
<td>HS 1513</td>
<td>$10,472,372</td>
<td>12,661,427</td>
</tr>
<tr>
<td>2001</td>
<td>HS 1513</td>
<td>$6,918,349</td>
<td>8,637,726</td>
</tr>
<tr>
<td>2002</td>
<td>HS 1513</td>
<td>$4,052,000</td>
<td>4,314,500</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 1515</td>
<td>$111,174,080</td>
<td>83,313,168</td>
</tr>
<tr>
<td>1999</td>
<td>HS 1515</td>
<td>$118,308,664</td>
<td>89,104,288</td>
</tr>
<tr>
<td>2000</td>
<td>HS 1515</td>
<td>$111,992,928</td>
<td>72,654,144</td>
</tr>
<tr>
<td>2001</td>
<td>HS 1515</td>
<td>$113,982,552</td>
<td>99,013,904</td>
</tr>
<tr>
<td>2002</td>
<td>HS 1515</td>
<td>$113,334,000</td>
<td>86,233,406</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 1515</td>
<td>$474,724,544</td>
<td>592,459,072</td>
</tr>
<tr>
<td>1999</td>
<td>HS 1515</td>
<td>$389,691,456</td>
<td>524,385,760</td>
</tr>
<tr>
<td>2000</td>
<td>HS 1515</td>
<td>$327,727,168</td>
<td>545,560,576</td>
</tr>
<tr>
<td>2001</td>
<td>HS 1515</td>
<td>$307,503,456</td>
<td>561,154,176</td>
</tr>
<tr>
<td>2002</td>
<td>HS 1515</td>
<td>$402,597,000</td>
<td>667,538,693</td>
</tr>
</tbody>
</table>

Table 27  US imports of hydrogenated vegetable fats and oils (e.g. canola oil)  

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 1516.20</td>
<td>$101,053,808</td>
<td>117,481,016</td>
</tr>
<tr>
<td>1999</td>
<td>HS 1516.20</td>
<td>$75,062,328</td>
<td>98,576,432</td>
</tr>
<tr>
<td>2000</td>
<td>HS 1516.20</td>
<td>$63,877,740</td>
<td>102,037,512</td>
</tr>
<tr>
<td>2001</td>
<td>HS 1516.20</td>
<td>$61,357,976</td>
<td>108,169,864</td>
</tr>
<tr>
<td>2002</td>
<td>HS 1516.20</td>
<td>$63,810,000</td>
<td>97,808,506</td>
</tr>
</tbody>
</table>


Table 28  US exports of hydrogenated vegetable fats and oils (e.g. canola oil)  

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 1516.20</td>
<td>$78,930,392</td>
<td>77,127,184</td>
</tr>
<tr>
<td>1999</td>
<td>HS 1516.20</td>
<td>$69,954,048</td>
<td>70,631,848</td>
</tr>
<tr>
<td>2000</td>
<td>HS 1516.20</td>
<td>$92,724,192</td>
<td>95,239,200</td>
</tr>
<tr>
<td>2001</td>
<td>HS 1516.20</td>
<td>$87,347,120</td>
<td>95,793,008</td>
</tr>
<tr>
<td>2002</td>
<td>HS 1516.20</td>
<td>$105,065,000</td>
<td>112,330,376</td>
</tr>
</tbody>
</table>

Table 29 US imports of vegetable waxes (except triglycerides), insect wax (beeswax), and spermaceti 1998–2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 1521</td>
<td>$23,122,652</td>
<td>6,187,993</td>
</tr>
<tr>
<td>1999</td>
<td>HS 1521</td>
<td>$24,190,620</td>
<td>7,445,923</td>
</tr>
<tr>
<td>2000</td>
<td>HS 1521</td>
<td>$22,422,032</td>
<td>6,317,911</td>
</tr>
<tr>
<td>2001</td>
<td>HS 1521</td>
<td>$19,966,816</td>
<td>6,299,861</td>
</tr>
<tr>
<td>2002</td>
<td>HS 1521</td>
<td>$16,205,000</td>
<td>6,249,594</td>
</tr>
</tbody>
</table>


Table 30 US exports of vegetable waxes (except triglycerides), insect wax (beeswax), and spermaceti 1998–2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 1521</td>
<td>$9,060,873</td>
<td>3,341,145</td>
</tr>
<tr>
<td>1999</td>
<td>HS 1521</td>
<td>$6,672,160</td>
<td>2,396,894</td>
</tr>
<tr>
<td>2000</td>
<td>HS 1521</td>
<td>$7,518,301</td>
<td>2,758,687</td>
</tr>
<tr>
<td>2001</td>
<td>HS 1521</td>
<td>$6,016,181</td>
<td>1,960,113</td>
</tr>
<tr>
<td>2002</td>
<td>HS 1521</td>
<td>$6,113,000</td>
<td>2,138,335</td>
</tr>
</tbody>
</table>

### Table 31 US imports of cocoa butter, fat and oil 1998–2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 1804</td>
<td>$273,138,080</td>
<td>65,307,016</td>
</tr>
<tr>
<td>1999</td>
<td>HS 1804</td>
<td>$237,468,272</td>
<td>80,475,568</td>
</tr>
<tr>
<td>2000</td>
<td>HS 1804</td>
<td>$210,839,712</td>
<td>94,648,560</td>
</tr>
<tr>
<td>2001</td>
<td>HS 1804</td>
<td>$171,747,376</td>
<td>80,805,680</td>
</tr>
<tr>
<td>2002</td>
<td>HS 1804</td>
<td>$136,561,000</td>
<td>54,788,302</td>
</tr>
</tbody>
</table>


### Table 32 US exports of cocoa butter, fat and oil 1998–2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 1804</td>
<td>$40,375,160</td>
<td>9,980,294</td>
</tr>
<tr>
<td>1999</td>
<td>HS 1804</td>
<td>$38,162,696</td>
<td>9,963,549</td>
</tr>
<tr>
<td>2000</td>
<td>HS 1804</td>
<td>$34,715,548</td>
<td>11,143,764</td>
</tr>
<tr>
<td>2001</td>
<td>HS 1804</td>
<td>$50,426,852</td>
<td>18,879,406</td>
</tr>
<tr>
<td>2002</td>
<td>HS 1804</td>
<td>$46,187,000</td>
<td>15,094,688</td>
</tr>
</tbody>
</table>

### Table 33 US imports of tea leaf & maté leaf extracts 1998–2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 2101.20.2000</td>
<td>$50,388,880</td>
<td>42,063,800</td>
</tr>
<tr>
<td>1999</td>
<td>HS 2101.20.2000</td>
<td>$59,218,532</td>
<td>54,606,772</td>
</tr>
<tr>
<td>2000</td>
<td>HS 2101.20.2000</td>
<td>$68,541,512</td>
<td>69,880,760</td>
</tr>
<tr>
<td>2001</td>
<td>HS 2101.20.2000</td>
<td>$78,157,792</td>
<td>65,389,168</td>
</tr>
<tr>
<td>2002</td>
<td>HS 2101.20.2000</td>
<td>$23,577,000</td>
<td>4,492,983</td>
</tr>
</tbody>
</table>


### Table 34 US exports of tea leaf & maté leaf extracts 1998–2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 2101.20.2000</td>
<td>$17,327,876</td>
<td>4,436,685</td>
</tr>
<tr>
<td>1999</td>
<td>HS 2101.20.2000</td>
<td>$21,324,384</td>
<td>5,430,094</td>
</tr>
<tr>
<td>2000</td>
<td>HS 2101.20.2000</td>
<td>$23,888,736</td>
<td>7,107,144</td>
</tr>
<tr>
<td>2001</td>
<td>HS 2101.20.2000</td>
<td>$31,297,220</td>
<td>10,993,828</td>
</tr>
<tr>
<td>2002</td>
<td>HS 2101.20.0020</td>
<td>$29,344,000</td>
<td>8,801,677</td>
</tr>
</tbody>
</table>

### Table 35
US imports of colouring matter of plant (e.g. annato) or animal (e.g. cochineal) origin (including dyeing extracts but excluding animal black)

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value</th>
<th>Trade Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>US Dollars</td>
<td>(kg)</td>
</tr>
<tr>
<td>1998</td>
<td>HS 3203</td>
<td>$53,911,500</td>
<td>6,166,268</td>
</tr>
<tr>
<td>1999</td>
<td>HS 3203</td>
<td>$61,199,520</td>
<td>7,240,298</td>
</tr>
<tr>
<td>2000</td>
<td>HS 3203</td>
<td>$62,331,124</td>
<td>6,734,596</td>
</tr>
<tr>
<td>2001</td>
<td>HS 3203</td>
<td>$53,335,272</td>
<td>5,025,671</td>
</tr>
<tr>
<td>2002</td>
<td>HS 3203</td>
<td>$44,022,000</td>
<td>4,803,778</td>
</tr>
</tbody>
</table>


### Table 36
US exports of colouring matter of plant (e.g. annato) or animal (e.g. cochineal) origin (including dyeing extracts but excluding animal black)

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value</th>
<th>Trade Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>US Dollars</td>
<td>(kg)</td>
</tr>
<tr>
<td>1998</td>
<td>HS 3203</td>
<td>$14,781,205</td>
<td>3,797,824</td>
</tr>
<tr>
<td>1999</td>
<td>HS 3203</td>
<td>$14,661,083</td>
<td>8,633,957</td>
</tr>
<tr>
<td>2000</td>
<td>HS 3203</td>
<td>$14,312,264</td>
<td>2,481,729</td>
</tr>
<tr>
<td>2001</td>
<td>HS 3203</td>
<td>$15,533,865</td>
<td>2,811,130</td>
</tr>
<tr>
<td>2002</td>
<td>HS 3203</td>
<td>$18,318,000</td>
<td>3,783,844</td>
</tr>
</tbody>
</table>

Table 37  US imports of essential oils, resinoids and oleoresins (including capsicum oleoresin) 1998–2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 3301</td>
<td>$300,917,568</td>
<td>31,098,568</td>
</tr>
<tr>
<td>1999</td>
<td>HS 3301</td>
<td>$259,875,696</td>
<td>27,029,204</td>
</tr>
<tr>
<td>2000</td>
<td>HS 3301</td>
<td>$278,009,504</td>
<td>26,611,240</td>
</tr>
<tr>
<td>2001</td>
<td>HS 3301</td>
<td>$273,961,888</td>
<td>29,757,240</td>
</tr>
<tr>
<td>2002</td>
<td>HS 3301</td>
<td>$290,204,000</td>
<td>32,205,814</td>
</tr>
</tbody>
</table>


Table 38  US exports of essential oils, resinoids and oleoresins (including capsicum oleoresin) 1998–2002 / US dollars / kilograms

<table>
<thead>
<tr>
<th>Period</th>
<th>HS CODE</th>
<th>Trade Value US Dollars</th>
<th>Trade Quantity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>HS 3301</td>
<td>$286,825,344</td>
<td>21,032,926</td>
</tr>
<tr>
<td>1999</td>
<td>HS 3301</td>
<td>$280,171,104</td>
<td>23,638,712</td>
</tr>
<tr>
<td>2000</td>
<td>HS 3301</td>
<td>$300,802,240</td>
<td>29,967,828</td>
</tr>
<tr>
<td>2001</td>
<td>HS 3301</td>
<td>$298,770,016</td>
<td>31,760,520</td>
</tr>
<tr>
<td>2002</td>
<td>HS 3301</td>
<td>$297,161,000</td>
<td>29,690,463</td>
</tr>
</tbody>
</table>

**APPENDIX II  IMPORTERS / WHOLESALERS OF NATURAL INGREDIENTS IN THE US**

## EXTRACT MANUFACTURERS

### ALOECORP
- 100 Technology Drive, Suite 325
- Broomfield, Colorado 80021 USA
- TEL: 303 635-2200
- FAX: 303 635-2300

### A.M. TODD COMPANY
- West Coast: 4091 West 11th Avenue
- Eugene, OR 97402 USA
- TEL: 541 687-0155
- FAX: 541 485-7347
- East Coast: 150 Domorah Drive,
- Montgomeryville, PA 18936 USA
- TEL: 215 628-8895 / FAX: 215 628-8651
- E-mail: info@amtodd.com
- URL: [http://www.amtodd.com/](http://www.amtodd.com/)

### AMAX NUTRASOURCE, INC.
- 1770 Prairie Road, Eugene, OR 97402, USA
- TEL: 541-688-4944 / FAX: 541-688-4866
- 14291 East Don Julian Road
- City of Industry, CA 91746, USA
- TEL: 626-961-6600
- FAX: 626-961-2890
- E-mail: info@amaxnutrasource.com
- URL: [http://www.amaxnutrasource.com/](http://www.amaxnutrasource.com/)

### AVOCA, INC.
- A subsidiary of Pharmachem Labs, Inc.
- State Road 1502
- Merry Hill, Bertie, NC 27957 USA
- TEL: 201 246-1000
- FAX: 201 246-8105
- E-mail: sales@pharmachemlabs.com

### BIO-BOTANICA
- 75 Commerce Drive
- Hauppauge, NY 11788-3942 USA
- TEL: 631.231.5522
- FAX: 631.231.7332

### CHART CORPORATION, INC.
- 787 East 27th Street
- Paterson, New Jersey 07504 USA
- TEL: 973-345-5554
- FAX: 973-345-2139

### DESERT KING INTERNATIONAL
- [Manufacturing Plants: Chile & Mexico]
- 7024 Manya Circle
- San Diego CA, 92154 USA
- FAX: 619 429 5001
- URL: [http://www.desertking.com/](http://www.desertking.com/)

### DRACO NATURAL PRODCTS, INC.
- [Manufacturing Plant: DRACO CHINA,
Shanghai, People’s Republic of China]
- 539 Parrott Street, San Jose, CA 95112 USA
- TEL: 408.287.7871
- FAX: 408.287.8838
- E-mail: info@DracoHerbs.com

### EUROMED USA, INC.
- [Manufacturing Plant: EUROMED S.A,
C/ Rec de Dalt 21-23, Poligon Can Magarola
08100 - Mollet del Valles, Barcelona, Spain]
- Manor Oak One, Suite 405, 1910 Cochran Road
- Pittsburgh, PA 15220 USA
- TEL: 412-344 39 60
- FAX: 412-344 39 64
- URL: [http://www.euromed.es/index.htm](http://www.euromed.es/index.htm)

### FINZELBERG, INC.
- [Manufacturing Plant: Finzelberg GmbH & Co.
KG Koblenzer Strasse 48-56, 56626 Andernach, Germany]
- 2 Sylvan Way, Parsippany, NJ 07054-3806 USA
- TEL: 973.683.1411
- FAX: 973.683.0177
- E-mail: info@plantextrakt-inc.com
- URL: [http://www.finzelberg.com/](http://www.finzelberg.com/)

### FRUTAROM, INC.
- 9500 Railroad Ave.
- North Bergen, New Jersey 07047 USA
- TEL: 201 861-9500
- FAX: 201 861-4323
- E-mail: usa@frutarom.com

### HAUSER, INC.
- 4161 Speciality Place
- Longmont, CO 80504 USA
- TEL: 720 652-7000
- FAX: 303 684-0430
- E-mail: contactco@Hauser.com

### IMPROVE U.S.A., INC.
- 215 Dalton Drive, Suite D
- DeSoto, Texas 75115 USA
- TEL: 972-230-9155
- FAX: 972-230-8824
- E-mail: ImproveUSA@Aloewholesale.com
- URL: [http://www.aloewholesale.com/index.htm](http://www.aloewholesale.com/index.htm)
INDENA USA, INC.
[Manufacturing Plant: Indena S.p.A. - Milan, Italy 20139 Milan, Italy Viale Ortles, 12]
East Coast: 1719 Route 10 East, Suite 311
Parsippany, New Jersey 07054 USA
TEL: 973 401 0077
FAX: 973 401 0078
West Coast: 1001 Fourth Avenue Plaza, Suite 3714, Seattle, WA 98154 - USA
TEL: 206 340-6140
FAX: 206 340-0863
E-mail: elke@indenausa.com
URL: http://www.indena.it/

KADEN BIOCHEMICALS, INC.
[Manufacturing Plant: Kaden Biochemicals GmbH, Pargesring 50, Hamburg, Germany]
17 Camden Road
Belle Mead, New Jersey 08502 USA
TEL: 908.359.8846
FAX: 908.359.8856
E-mail: kaden.bio@t-online.de
URL: http://www.kadenbio.com/english/index.html

LINNEA USA
[Manufacturing Plant: Linnea SA, Via Cantonale, 6595 Riazzino (Locarno), Switzerland]
435 McCartney Street, Easton, PA, 18042 USA
TEL: 610-253-7950
FAX: 610-253-7970
E-mail: sales@linnea-worldwide.com
URL: http://www.linnea-worldwide.com/home1.asp

PLANTEDRAKT, INC.
[Manufacturing Plant: Plantextrakt GmbH & Co. KG, Dutendorfer Strasse 5-7, 91487 Vestenbergsgreuth Germany]
2 Sylvan Way
Parsippany, New Jersey 07054 USA
TEL: 973.683.1411
FAX: 973.683.0177
E-mail: info@plantextrakt-inc.com
URL: http://www.plantedtrak.com/

PURE WORLD BOTANICALS
375 Huyler Street
South Hackensack, New Jersey 07606 USA
TEL: 201 440-5000
FAX: 201 342-8000
E-mail: pureworld@pureworld.com
URL: http://www.pureworld.com/

RENAISSANCE HERBS, INC.
[Manufacturing Plant: Dhanvantari Botanicals, Pvt. Ltd, Bangalore, India]
9588 Topanga Canyon Blvd.
Chatsworth, California 91311 USA
TEL: 818.709.2411
FAX: 818.709.2414
E-mail: info@renaissanceherbs.com
URL: http://www.renaissanceherbs.com/

SABINSA CORPORATION
121 Ethel Road West, Unit #6
Piscataway, New Jersey 08854, USA
TEL: 732-777-1111
FAX: 732-777-1443
E-mail: info@sabinsa.com
URL: http://www.sabinsa.com/

US NUTRACEUTICALS, LLC
2751 Nutra Lane
Eustis, Florida 32726
TEL: 352-357-2004
FAX: 352-483-2095
E-mail: usncustomerservice@usnutra.com
URL: http://www.usnutra.com/

YAKIMA CHIEF, INC. CO2 EXTRACTION
555 West South Hill Road;
P.O. Box 209; Sunnyside, Washington 98944
TEL: 509 839-9022
FAX: 509 839-5570
http://www.yakimachief.com/facilities/CO2extract.html
ESSENTIAL OIL PRODUCERS

A.M. TODD COMPANY
World's largest supplier of peppermint and spearmint essential oil
1717 Douglas Avenue, Box 50711
Kalamazoo, MI 49005 USA
TEL: 616 343-2603
FAX: 616 343-3399
E-mail: info@amtodd.com
URL: http://www.amtodd.com/index.html

AROMA CREATIONS, INC.
24691 State Route 20
Sedro-Woolley, Washington 98284-8012 USA
TEL: 360.854.9000
FAX: 360.856.4384
E-mail: info@aromacreations.com
URL: http://www.aromacreations.com/

B&G FARMS
18,000 acre peppermint leaf farm
Royal City, Washington, USA

CITRUS AND ALLIED ESSENCES, LTD.
3000 Marcus Avenue
Lake Success, NY 11042 USA
TEL: 718-343-0030
FAX: 516-354-1262
E-mail: info@citrusandallied.com
URL: http://www.citrusandallied.com/

I.P. CALLISON & SONS
Peppermint oil & Spearmint oil
600 Stewart Street, Suite 2000
Seattle, WA 98101
TEL: 206 441-7752
FAX: 206 728-9041
E-mail: info@ipcallison.com
URL: http://www.callisonsinc.com/company/callison.html

LABBEEMINT
Mint oil
P.O. Box 130
Harrah, WA 98933
TEL: 509 848-2022

THE LEBERMUTH COMPANY
TEL: 574.259.7000
FAX: 574.258.7450
E-mail: info@lebermuth.com
URL: http://www.lebermuth.com/

WM. LEMAN COMPANY
Peppermint oil & Spearmint oil
P.O. Box 100
Bremen, Indiana 46506-0100 USA
TEL: 219 546-2371
FAX: 219 546-5762
E-mail: info@wmleman.com
URL: http://www.wmleman.com/

YOUNG LIVING ESSENTIAL OILS
1,800 acres of organic farmland in Utah and Idaho, and 70,000 square feet of greenhouse
URL:
ALOE CORP
Largest aloe vera farm in US
100 Technology Drive, Suite 325
Broomfield, Colorado 80021 USA
TEL: 303 635-2200
FAX: 303 635-2300
URL: http://www.aloecorp.com/

AMERICAN BOTANICALS
Broad range of wild collected medicinal herbs
24750 Highway FF, Eolia, Missouri 63344 USA
TEL: 573.485.2300
FAX: 573.485.3801
URL: http://www.americanbotanicals.com/

A.M. TODD COMPANY
Large scale cultivation of peppermint leaf
and spearmint leaf for oil production
1717 Douglas Avenue, Box 50711
Kalamazoo, MI 49005 USA
TEL: 616 343-2603
FAX: 616 343-3399
E-mail: info@amtodd.com
URL: http://www.amtodd.com/index.html

AROMATIC INC.
Large scale cultivation of catnip, peppermint,
peppermint, and other herbs
PO Box 13093, Salem, Oregon 97309 USA
TEL: 503.363.9494
FAX: 503.363.3395
E-mail: aromatics@msn.com

B&G FARMS
18,000 acre peppermint leaf farm
Royal City, Washington, USA

BOSTON JOJOBA COMPANY
940 acre jojoba farm in Arizona
URL: http://www.bostonjojoba.com/visit.asp

CACHALOT, EL NINO, & MILLA VERDE FARMS
Largest commercial jojoba plantation in US
Desert Whale Jojoba Company, Inc.
P.O. Box 41594, 2101 East Beverly Dr.
Tucson, AZ 85717 USA
TEL: 520 882-4195
FAX: (520) 882-7821
URL: http://www.desertwhale.com/farms/farms.html

CHARLESTON TEA PLANTATION
127-acre tea leaf farm owned by the
R.C. Bigelow Tea Co.
6617 Maybank Highway, Charleston, SC USA
TEL: 843 559-0383
URL: http://www.bigelowtea.com/

DESERTE HERB COMPANY, INC.
Organic & commercial medicinal & culinary
herb cultivation
PO Box 125, 1003 Ranch Road
Chamberino, New Mexico 88027 USA
TEL: 505.882.2425
FAX: 505.882.1910
E-mail: tjfarm1@juno.com

ELECTIC INSTITUTE FARM
90 acre organic medicinal herb farm (40
herbs; echinacea, ginko, goldenseal, hops)
36350 S.E. Industrial Way
Sandy, Oregon 97055 USA
TEL: 503 668-4120
FAX: 503 668-3227
URL: http://www.eclecticherb.com

GAIA HERB FARM
250 acre organic medicinal herb farm
(50 herbs; echinacea, feverfew, valerian)
108 Island Ford Road
Brevard, NC 28712
URL: http://www.gaiaherbs.com/Page6.htm

GARNAY, INC.
1,200-acre ginkgo leaf farm
3100 Ebenezer Rd, Sumter, SC 29153 USA
TEL: 803-469-8078
FAX: 803-469-2122
E-mail: info@garnay-inc.com
URL: http://www.garnay-inc.com/

HERB PHARM FARM
85 acre organic medicinal herb farm; 110
herbs: black cohosh, echinacea, valerian)
PO Box 116, Williams, OR 97544 USA
TEL: 800-348-4372
E-mail: info@herb-pharm.com
URL: http://www.herbpharm.com/Company/pharm_fs.html

KAUAI ORGANIC FARMS, INC.
45 acre organic medicinal herb farm
(ginger rhizome, noni fruit, turmeric rhizome)
PO Box 1338 Kilauea, HI 96754
TEL: 808 651-1777
FAX: 808 828-1343
E-mail: neal@kauaiorganicfarms.com
URL: http://www.kauaiorganicfarms.com/index.html

KLICKITAT ORGANICS, LLC
350 acre organic herb farm (catnip, feverfew,
nettles, red clover, sage, thyme)
149 Little Mountain Road
Trout Lake, WA 98650 USA
TEL: 509.395.3680
FAX: 509.395.3683
E-mail: klickitat@gorge.net
LavenderFarms.com
A group of five lavender flower farms in Washington State
URL: http://www.lavenderfarms.com/olympic/oly.htm

LAVENDER HILL
100 acre organic lavender flower estate in Southern Oregon
TEL: 541-857-8168
E-mail: LAVENDERHILLInc@aol.com
URL: http://www.lavenderhillfarm.com/

PACIFIC BOTANICALS
114 acre organic medicinal herb farm plus wild collected herbs
4350 Fish Hatchery Road
Grants Pass OR 97527 USA
TEL: 541-479-7777
FAX: 541-479-5271
E-mail: info@pacificbotanicals.com
URL: http://www.pacificbotanicals.com/

PLANTATION MEDICINALS, INC.
Large scale cultivation & wild collection (echinacea, saw palmetto)
PO Box 128, 1401 County Road 830
Felda, Florida 33930 USA
TEL: 941.675.2984
FAX: 941.675.4591

Pu'u'ala FARM AND RANCH
1,000 acre organic medicinal herb farm (kava root & leaf, neem leaf, noni fruit)
Honokaa, HI 96727
PO Box 4175, Hilo, HI 96720 USA
TEL: 888-315-4100
FAX: 808-935-8854
E-mail: orders@puuala.com
URL: http://planet-hawaii.com/puuala/index.htm

PURCELL JOJOBA INTERNATIONAL
1,200 acre Jojoba farm in Bouse, Arizona
142 Front Street, Avila, CA 93424 USA
TEL: 805.595.7275
FAX: 805.595.9238
URL: http://www.purcelljojoba.com/

SAN FRANCISCO HERB & NATURAL FOOD CO.
Echinacea, peppermint, spearmint cultivation
Central Oregon
E-mail: info@herbspicetea.com
URL: http://www.herbspicetea.com/

SAW PALMETTO BERRIES CO-OP OF FLORIDA
Saw palmetto fruit collection
1206 Kings Way Naples, Florida 34104 USA
TEL: 239 775-4286
FAX: 239 775-9188
URL: http://www.sawpalmettoco-op.net/

STRATEGIC SOURCING, INC.
Large range of cultivated and wild collected medicinal herbs; some certified organic
115 Snow Ridge Road, Banner Elk, NC 28604
TEL: 828-898-7642
FAX: 828-898-7647
Email: efletcher@strategicsourcinginc.net
URL: http://www.strategicreports.com/ssi.asp

TROUT LAKE FARM, LLC
1,200 acre organic herb farm (catnip, echinacea, feverfew, nettle, scullcap) plus wild collected herbs
42 Warner Road, Trout Lake, WA 98650 USA
TEL: 509-395-2025
FAX: 509-395-2645
E-mail: herbs@troutlakefarm.com
URL: http://www.troutlakefarm.com/

US NUTRACEUTICALS, LLC
Wild collected black cohosh, goldenseal, saw palmetto, slippery elm, witch hazel
2751 Nutra Lane , Eustis, Florida 32726 USA
TEL: 352-357-2004
FAX: 352-483-2095
E-mail: usncustomerservice@usnutra.com
URL: http://www.usnutra.com/

US NUTRACEUTICALS, LLC
Wild collected black cohosh, goldenseal, saw palmetto, slippery elm, witch hazel
2751 Nutra Lane , Eustis, Florida 32726 USA
TEL: 352-357-2004
FAX: 352-483-2095
E-mail: usncustomerservice@usnutra.com
URL: http://www.usnutra.com/

WISCONSIN CULTIVATED GOLDENSEAL
Goldenseal root farm
2204 9th Avenue
Athens, WI 54411 USA
TEL: 715.257.7899
E-mail: golden_seal@hotmail.com

WISCONSIN GINSENG & HERB CO-OP
Cooperative of 90 American ginseng farmers
P.O. Box 581, Marathon, WI 54448 USA
TEL: 715-443-3723
FAX: 715-443-3723
E-mail: info@ginsengherbco-op.com
URL: http://www.ginsengherbco-op.com/

YAKIMA CHIEF, INC. HOP GROWERS
Cooperative of hop farmers
555 West South Hill Road; P.O. Box 209; Sunnyside, WA 98944
TEL: 509 839-9022 / FAX: 509 839-5570
http://www.yakimachief.com/about/history.html

YOUNG LIVING FARM
1,600 acre organic herb farm (lavender, lemon balm, peppermint, clary sage)
Mona, Utah and St. Maries, Idaho
WHOLESALE DISTRIBUTERS

ACTA HEALTH PRODUCTS
Botanical Extracts
1131 N. Fair Oaks, Sunnyvale, CA 94089 USA
TEL: 415.459.4393
FAX: 415.459.3491
E-mail: inquiry@ActaProducts.com
URL: http://www.actaproducts.com/

AMERICAN INGREDIENTS, INC.
Botanical Raw Materials & Extracts
2929 East White Star Avenue
Anaheim, CA 92806-2628 USA
TEL: 714.630.6000
FAX: 714.630.6655
E-mail: Sales@amer-ing.com
URL: http://www.amer-ing.com/index.htm

AMERICAN MERCANTILE CORPORATION
Botanical Raw Materials & Extracts
1310 Farmville Road, Memphis, TN 38122-1001
TEL: 901-454-1900
FAX: 901-454-0207
URL: http://www.americanmercantile.com/

ASHANINKA IMPORTS INC.
Botanical Raw Materials & Extracts from Brazil, Mexico, and Peru
P.O. BOX 770065, MIAMI FL 33177 0065 USA
TEL: 305 971 3008
FAX: 305 971 3224
E-mail: info@ashaninka.com

ASIA NATURAL PRODUCTS, INC.
Chinese Botanical Raw Materials
590 Townsend St., San Francisco CA 94103 USA
TEL: 415-522-1668
FAX: 415-522-1988
E-mail: info@drkangformulas.com
http://www.drkangformulas.com/herbfiles/herbs.htm

AYUSH HERBS, INC.
Indian Botanical Raw Materials & Extracts
[from Ayush Herbs Pvt Ltd., H.P India]
2115 112th Avenue NE,
Bellevue, Washington 98004 USA
TEL: 425 637-1400
FAX: 425 451-2670
URL: http://www/ayush.com/

BDS NATURAL PRODUCTS
Botanical Raw Materials & Extracts
1904 ½ East Dominguez Street
Carson, California 90810 USA
TEL: 310.518.2227
FAX: 310.518.2577
E-mail: info@bdsnatural.com
URL: http://www.bdsnatural.com

BI NUTRACEUTICALS
Botanical Raw Materials & Extracts
2550 El Presidio Street
Long Beach, CA, 90810 USA
Tel: 310.669.2100
Fax: 310.637.3644
E-mail: botan@botanicals.com
URL: http://www.botanicals.com/

BRUCIA PLANT EXTRACTS
Large Range of Botanical Extracts
3855 Dividend Drive
Shingle Springs, CA 95682 USA
TEL: 530-676-2774
FAX: 530-676-0574
URL: http://www.brucia.com/index.html

CHEMCO INDUSTRIES, INC.
OptiPure® Brand Botanical Extracts
6984 Bandini Blvd.
Los Angeles, CA 90040 USA
TEL: 323.721.8300
FAX: 323.721.9600
URL: http://www.optipure.com/

COGNIS CORP USA
Botanical Extracts and Derivatives
5051 Estecreek Drive
Cincinnati, OH 45232-1446 USA
TEL: 513-482-3000
FAX: 513-482-5503
URL: http://www.cognis.com/cognis.html

ESSENTIALLY PURE INGREDIENTS
Artichoke Extract, Garlic, Kava Extract, Soy
21411 Prairie Street
Chatsworth, CA 91311 USA
TEL: 818-739-6046
FAX: 818-739-6042
E-mail: Customerservice@essentiallypure.com
URL: http://www.essentialypure.com/index.html

EXTRACTS PLUS, INC.
US distributor of extracts made by Emil Flachsman of Switzerland
3275 Corporate View Drive
Vista, CA 92083 USA
TEL: 760 597-0200
FAX: 760 597-0734
URL: http://www.extractplus.com/

FAMARCO LIMITED, INC.
B&K INTERNATIONAL
Botanical Raw Materials
1381 Air Rail Avenue
Virginia Beach, VA 23455 USA
TEL: 757 460-3573
FAX: 757 460-2621
E-mail: info@famarco.com
URL: http://www.famarco.com/catalog/
PHARM LINE, INC.
Botanical Extracts
41 Bridge Street, PO Box 291
Florida, New York 10921 USA
TEL: 845-651-4443
FAX: 845-651-6900
E-mail: info@pharmlineinc.com
URL: http://www.pharmlineinc.com/

P.L. THOMAS & CO., INC.
Botanical Raw Materials & Extracts
119 Headquarters Plaza
Morristown, NJ 07960 USA
TEL: 973.984.0990
FAX: 973.984.5666
E-mail: info@plthomas.com
URL: http://plthomas.com/

QUALITY BOTANICAL INGREDIENTS, INC.
Botanical raw materials & extracts
Vegetable powders, beehive products
500 Metuchen Road
South Plainfield, NJ 07080 USA
TEL: 908 668-0088
FAX: 908 561-9682
E-mail: info@4qbi.com
URL: http://www.4qbi.com/

RFI INGREDIENTS
Botanical Raw Materials & Extracts
300 Corporate Drive, Suite 14
Blauvelt, NY 10913 USA
TEL: 845-358-8600
FAX: 845-358-9003
E-mail: rfi@rfiingredients.com
URL: http://www.rfiingredients.com/

SAM PAC ENTERPRISES
Chinese Botanical Raw Materials & Extracts
434 N. Canal St., Unit 16
South San Francisco, Ca. 94080 USA
TEL: 650 876-0808
FAX: 650 876-0338
URL: http://www.sampacent.com/

SAN FRANCISCO HERB & NATURAL FOOD CO.
Botanical Raw Materials
4744 Kato Road, Fremont, CA 94538 USA
TEL: 510.770.1215
FAX: 510.770.9021
E-mail: info@herbspicetea.com

STAR WEST BOTANICALS
Botanical Raw Materials & Extracts
11253 Trade Center Drive
Rancho Cordova, CA 95742 USA
TEL: 916 853-9354
FAX: 916 853-9673
E-mail: info@starwest-botanicals.com
STAUBER PERFORMANCE INGREDIENTS  
Botanical Raw Materials & Extracts  
4120 N. Palm Street  
Fullerton, CA 92835 USA  
TEL: 714-441-3900  
FAX: 714-441-3909  
E-mail: sales@stauberusa.com  
URL: http://www.stauberusa.com/

STRYKA BOTANICS CO., INC.  
Botanical Raw Materials & Extracts  
239 Homestead Rd  
Hillsborough, NJ 08844 USA  
TEL: 908 281-5577  
FAX: 908 281-5392  
E-mail: info@stryka.com  
URL: http://www.stryka.com/

TRIARCO INDUSTRIES, INC.  
Botanical Raw Materials & Extracts  
400 Hamburg Turnpike  
Wayne, New Jersey 07470  
TEL: 973-942-5100  
FAX: 973-942-8873  
E-mail: info@triarco.com  
URL: http://www.triarco.com/

TRINITY HERBS  
Organic Botanical Raw Materials  
PO Box 1001, Graton, CA 95444 USA  
TEL: 707.824.2040  
FAX: 707.824.2050  
E-mail: info@trinityherb.com  
URL: http://www.trinityherb.com/index.shtml

WHOLE HERB  
Botanical Raw Materials  
19800 8th Street East  
Sonoma, CA 95476 USA  
TEL: 707.935-1077  
FAX: 707.935-3447.  
URL: http://www.wholeherbcompany.com/

YERBA BOTANIKA, LLC  
South American Botanicals & Extracts  
3551 42nd Avenue South, Suite B108  
St. Petersburg, Florida 33711 USA  
TEL: 727.865.9280  
FAX: 727.866.9442  
E-mail: info@YerbaBotanika.com  
URL: http://www.YerbaBotanika.com
APPENDIX III  TRADE ASSOCIATIONS

AMERICAN HERBAL PRODUCTS
ASSOCIATION (AHPA)
8484 Georgia Ave., Suite 370, Silver Spring, MD 20910 USA
Tel: 301 588-1171
Fax: 301 588-1174
E-mail: ahp@ahpa.org
URL: http://www.ahpa.org/

AMERICAN SPICE TRADE ASSOCIATION (ASTA)
2025 M Street, NW, Suite 800 Washington, DC 20036 USA
TEL: 202-367-1127
FAX: 202-367-2127
E-mail: info@astaspice.org
URL: http://www.astaspice.org/

CONSULTANTS ASSOCIATION FOR THE NATURAL INDUSTRY (CANI)
P.O. Box 689, Clovis, CA, 93613 USA
Tel: 559-325-7192
Fax: 559-325-7195
E-mail: info@cani-consultants.com
URL: http://www.cani-consultants.com/

COSMETIC, TOILETRY AND FRAGRANCE ASSOCIATION (CTFA)
1101 17th St., NW, Suite 300 Washington, DC 20036
TEL: 202 331-1770
FAX: 202 331-1969
URL: http://www.ctfa.org/

COUNCIL FOR RESPONSIBLE NUTRITION
1828 L Street, NW, Washington, DC, 20036
Tel: 202-776-7929
Fax: 202-872-9594
E-mail: webmaster@crnusa.org
URL: http://www.crnusa.org/

GREAT PLAINS HERB GROWERS ASSOCIATION
908 West 20th Terrace Lawrence, Kansas 66047 USA
TEL: 785.841.9241
FAX: 785.841.4975
E-mail: herbgrowers@sunflower.com
http://www.kansasruralcenter.org/heartland/greatplains.htm

HERB GROWING & MARKETING NETWORK
E-mail: herbworld@aol.com
URL: http://www.herbworld.com/newgp/index.htm

INDEPENDENT COSMETIC MANUFACTURERS AND DISTRIBUTORS (ICMAD)
1220 W. Northwest Highway Palatine, IL 60067-1803 USA
TEL: 847 991-4499
FAX: 847 991-8161
E-mail: info@icmad.org
URL: http://www.icmad.org/home.asp

INTERNATIONAL ALLIANCE OF DIETARY/FOOD SUPPLEMENTS ASSOCIATIONS (IADSA)
rue de l' Association 50 B-1000 Brussels, Belgium
Tel: +32 2 209 1155
Fax: +32 2 223 3064
E-mail: secretariat@iadsa.be
URL: http://www.iadsa.org/

INTERNATIONAL ASSOCIATION OF COLOR MANUFACTURERS
1620 I Street, NW, Suite 925 Washington, DC 20006 USA
TEL: 202 293-5800
FAX: 202 463-8998
E-mail: info@iacmcolor.org
URL: http://www.iacmcolor.org/

INTERNATIONAL FEDERATION OF ESSENTIAL OILS AND AROMA TRADES (IFEAT)
6 Catherine Street, London, WC2B 5JJ, UK
TEL: +44 20 7836 2460
FAX: +44 20 7836 0580
E-mail: IFEATAdministrator@fdf.org.uk
URL: http://www.ifeat.org/

INTERNATIONAL HERB ASSOCIATION (IHA)
P.O. Box 5667 Jacksonville, FL 32247-5667 USA
URL: http://www.iherb.org/

ORGANIC TRADE ASSOCIATION (OTA)
PO Box 547-Greenfield-MA-01302
60 Wells Street-Greenfield-MA-01301
TEL: 413-774-7511
FAX: 413-774-6432
E-mail: info@ota.com
URL: http://www.ota.com/
CROP-SPECIFIC TRADE ASSOCIATIONS

AMERICAN JOJOBA ASSOCIATION
\(\text{c/o Arizona Dept. of Agriculture}\)
1688 West Adams
Phoenix, AZ 80007 USA
TEL: 602 542-0968
FAX: 602 542-0969

ASSOCIATION FOR HAWAIIAN ‘AWA (kava)
P.O. Box 636
Pepe‘ekeo, HI 96783 USA
TEL: 808/969-7079

CAPE COD CRANBERRY GROWERS’ ASSOCIATION (CCCGA)
3203-B Cranberry Highway
East Wareham, MA 02538 USA
URL: http://www.cranberries.org/

GINSENG BOARD OF WISCONSIN
TEL: 715-845-7300
E-mail: ginseng@ginsengboard.com
URL: http://www.ginsengboard.com/

HOP GROWERS OF AMERICA
P.O. Box 9218
Yakima, WA 98909 USA
TEL: 509.248.7043
FAX: 509.248.7044
E-mail: doug@usahops.org
URL: http://www.usahops.org/english/index.asp

IDAHO MINT GROWERS ASSOCIATION
55 SW 5th Ave #100
Meridian, ID 83642 USA

INTERNATIONAL JOJOBA EXPORT COUNCIL
4250 North Civic Center Blvd., 4th Floor, Scottsdale, Arizona 85251-3900
TEL: 480-545-7000 x115
E-mail: info@ijec.net
URL: http://www.ijec.net/

MONTANA MINT GROWERS ASSOCIATION
PO Box 2002
Kalsipell, MT 59903-2002 USA
URL: http://www.montanamint.addr.com/

SEQUIM LAVENDER GROWER’S ASSOCIATION
55 Parrish Road
Sequim, WA 98382 USA
TEL: 360-681-8563
E-mail: morningmysts@hotmail.com

TEA ASSOCIATION OF THE USA
TEA COUNCIL OF THE USA
420 Lexington Ave., New York, NY 10170 USA
TEL: 212-986-9415
FAX: 212-697-8658
E-mail: info@teausa.com
URL: http://www.teausa.com/

THE INTERNATIONAL ALOE SCIENCE COUNCIL
415 East Airport Freeway Suite 365
Irving, Texas 75062 USA
TEL: 972 258-8772
FAX: 972 258-8777
E-mail: iasc@iasc.org
URL: http://www.iasc.org/iasc.html

WASHINGTON MINT GROWERS ASSOCIATION
10542 Division South Road
Othello, Washington 99344 USA

WISCONSIN STATE CRANBERRY GROWERS ASSOCIATION (WSCGA)
PO Box 365, Wisconsin Rapids, WI 54495-0365
TEL: 715-423-2070
FAX: 715-423-0275
E-mail: wiscran@wctc.net
URL: http://www.wiscran.org/
APPENDIX IV  TRADE FAIRS IN THE US

ALL THINGS ORGANIC
CONFERENCE AND TRADE SHOW
Organic Trade Association
60 Wells Street, P.O. Box 547
Greenfield, MA 01302, U.S.A.
TEL: 413-774-7511
FAX: 413-774-6432
Email: info@ota.com
URL: http://www.atoexpo.com/

AROMA HERB
CONFERENCE AND TRADE SHOW
International Aromatherapy and Herb
Association (IAHA)
TEL: 602.938.4439
E-mail: aromaherbshow@hotmail.com
http://www.aromaherbshow.com/index_035.htm

BIOFACH AMERICA ORGANIC PRODUCTS EXPO
New Hope Natural Media
1401, Pearl Street, Boulder, CO 80302 USA
TEL: 303.998 9266
FAX: 303.998 9525
E-mail: ssilverman@newhope.com
http://www.nuernbergglobalfairs.com/va/BFA_03/e/index.html

INTERNATIONAL COSMETIC EXPO (ICE)
Allured Publishing Group
362 S. Schmale Road
Carol Stream, IL 60188-2787 USA
TEL: 630-653-2155
URL: http://209.196.17.253/ME2/Sites/default.asp

INTERNATIONAL SYMPOSIUM ON NATURAL
COLORANTS FOR FOOD, NATURACEUTICALS,
BEVERAGES & COSMETICS
The Hereld Trust
200 Leader Hill Drive, Hamden CT 06517 USA
FAX: 203.281.6766

NATURAL PRODUCTS EXPO EAST (Wash DC)
NATURAL PRODUCTS EXPO WEST (Anaheim)
New Hope Natural Media
1401, Pearl Street, Boulder, CO 80302 USA
TEL: 303.998 9266
FAX: 303.998 9525
E-mail: tradeshows@newhope.com

NUTRACON SUPPLY EXPO
New Hope Natural Media
1401, Pearl Street, Boulder, CO 80302 USA
TEL: 303.998 9266
FAX: 303.998 9525
E-mail: tradeshows@newhope.com
URL: http://www.nutraconference.com/

SUPPLY SIDE EAST (New Jersey)
SUPPLY SIDE WEST (Nevada)
International Trade Show and Conference
Virgo Publishing - Health & Nutrition Division
P.O. BOX 40079, Phoenix, AZ 85067-0079 USA
URL: http://www.supplysideshow.com/
APPENDIX V  TRADE PRESS

AHPA REPORT
THE OFFICIAL PUBLICATION OF THE AMERICAN HERBAL PRODUCTS ASSOCIATION
Monthly newsletter for AHPA members only
8484 Georgia Ave., Suite 370,
Silver Spring, MD 20910 USA
Tel: 301-588-1171
Fax: 301-588-1174
E-mail: ahpa@ahpa.org
URL: http://www.ahpa.org/

COSMETICS & TOILETRIES
362 South Schmale Road
Carol Stream, IL 60188 USA
Tel: 630-653-2155
Fax: 630-665-2699
URL: http://www.ahpa.org/COSMETICS/cosme.html

FDA—DIETARY SUPPLEMENT / FOOD LABELING ELECTRONIC NEWSLETTER
A free electronic newsletter from the Food and Drug Administration's Office of Nutritional Products, Labeling, and Dietary Supplements (ONPLDS), in the Center for Food Safety and Applied Nutrition (CFSAN)
E-mail: FDA-DSFL@vm.cfsan.fda.gov
URL: http://www.cfsan.fda.gov/~dms/infonet.html

FUNCTIONAL FOODS & NUTRACEUTICALS
THE OFFICIAL PUBLICATION OF NUTRACON / SUPPLY EXPO
New Hope Natural Media
1401 Pearl Street, Suite 200
Boulder, CO 80302 USA
Tel: 303-998-9126
Fax: 303-939-8440
E-mail: customerservice@newhope.com
URL: http://www.newhope.com/ffn/

FUNCTIONAL FOODNET
A free daily e-mail newsletter produced by the Food Safety Network at the University of Guelph, Dept. of Agriculture
Guelph, Ontario N1G 2W1 Canada
Tel: 519-824-4120 x2506
Fax: 519-763-8933
E-mail: dpowell@uoguelph.ca
URL: http://www.foodsafetynetwork.ca

GREAT PLAINS HERB GROWERS ASSOCIATION NEWSLETTER
Quarterly newsletter for herb growers
908 West 20th Terrace
Lawrence, Kansas 66047 USA
TEL: 785-841-9241
FAX: 785-841-4975
E-mail: herbgrowers@sunflower.com
URL: http://www.kansasruralcenter.org/heartland/greatplains.htm

HERBALGRAM—THE JOURNAL OF THE AMERICAN BOTANICAL COUNCIL
PO Box 144 345
Austin, TX 78714-4345 USA
Tel: 512-926-4900
Fax: 512-926-2345
E-mail: abc@herbalgram.org
URL: http://www.herbalgram.org/herbalgram/

HERBAL GREEN PAGES ONLINE
A service of the Herb Growing & Marketing Network, an herb industry trade association
E-mail: herbworld@aol.com
URL: http://www.herbworld.com/newgp/index.htm

HSC INDUSTRY NEWS
Daily Electronic Industry Newsletter for natural product industry executives
Health Strategy Consulting LLC, USA
319 Hope Street
Providence, Rhode Island 02906 USA
Tel: 401-270-0760
Fax: 401-272-0706
E-mail: aismail@health-strategy.com
URL: http://www.health-strategy.com/news.html

IADSA NEWSFLASH
International Alliance of Dietary/Food Supplements Associations (IADSA) monthly newsletter for members only
rue de l’ Association 50
B-1000 Brussels, Belgium
Tel: +32 2 209 1155
Fax: +32 2 223 3064
E-mail: secretariat@iadsa.be
URL: http://www.iadsa.org/

JOURNAL OF HERBS, SPICES & MEDICINAL PLANTS
The Haworth Press, Inc., 10 Alice Street, Binghamton, New York 13904-1580
Tel: 607 722 5857
Fax: 607 722 6362
E-mail: getinfo@haworthpressinc.com

MARKET NEWS SERVICE FOR MEDICINAL PLANTS & EXTRACTS
A quarterly report promoting international trade in medicinal plants & extracts with regional reviews including North America
International Trade Centre UNCTAD/WTO
Palais des Nations, CH-1211
Geneva 10, Switzerland
Tel: +41 22 730 0111
Fax: +41 22 733 4439
E-mail: itcreg@intracen.org
URL: http://www.p-maps.org/mns/medplants.php
APPENDIX VI TRADE SUPPORT ORGANIZATIONS

CROP-SPECIFIC:

FAR WEST SPEARMINT OIL ADMINISTRATIVE COMMITTEE
100 N. Fruitland, Suite B,
Kennewick, WA 99336 USA
TEL: 509.585.5460
FAX: 509.585.2671
URL: http://www.farwestspearmint.org/

GINSENG BOARD OF WISCONSIN
TEL: 715-845-7300
E-mail: ginseng@ginsengboard.com
URL: http://www.ginsengboard.com/

HOP ALLIANCE
912 Coach Court, Yakima Wa. 98908 USA
TEL: 509-969-0092
FAX: 509-965-0719
E-mail: dbakos@aol.com

IDAHO MINT COMMISSION
URL: http://www.idahomint.org/

OREGON HOP COMMISSION
20209 Main Street, P.O. Box 9
St. Paul, OR 97137 USA
TEL: 503-633-2922
FAX: 503-633-2924
E-mail: cchop@oda.state.or.us
URL: http://hop.oda.state.or.us/ohc.html

OREGON MINT COMMISSION
PO Box 3366, Salem 97302-0366 USA
TEL: 503-364-2944

THE CRANBERRY MARKETING COMMITTEE
245R Main Street, Wareham, MA 02571 USA
TEL: 508 291-1510
FAX: 508 291-1511
E-mail: cranberry.marketing@verizon.net
URL: http://www.uscranberries.com/

SAW PALMETTO BERRIES BONDED DEALERS
FLORIDA DEPARTMENT OF AGRICULTURE
http://www.florida-agriculture.com/bond/dealers.htm

WASHINGTON HOP COMMISSION
504 N. Naches Ave. Suite 11
Yakima, WA 98901
TEL: 509 453-4749
FAX: (509) 457-8561
URL: http://www.wnpa.com/foodsafetyforum/ag_c_c/hop.html

WASHINGTON MINT COMMISSION
PO Box 2111, Pasco, Washington 99302 USA

WISCONSIN DEPARTMENT OF AGRICULTURE:
Ginseng Dealer/Grower Registration & Certification
http://www.datcp.state.wi.us/arm/agriculture/crops/specialty-products/ginseng.html

MARKET ORDERS:

Market Orders Ginseng Board of Wisconsin
http://www.datcp.state.wi.us/mktg/agriculture/crops/market-orders/ginsengbrd.html

Market Orders Cranberry Board of Wisconsin
http://www.datcp.state.wi.us/mktg/agriculture/crops/market-orders/cranbrd.html

Market Orders Mint Board of Wisconsin
http://www.datcp.state.wi.us/mktg/agriculture/crops/market-orders/mintbrd.html

FEDERAL GOVERNMENT:

FOREIGN AGRICULTURAL SERVICE (FAS)
EXPORTING / BUYING ORGANIC PRODUCTS
E-mail: stephanie.riddick@fas.usda.gov
URL: http://www.fas.usda.gov/organics/organics.html

FOREIGN AGRICULTURAL SERVICE (FAS)
U.S. TRADE INTERNET SYSTEM
URL: http://www.fas.usda.gov/ustrade/

MARKET ACCESS PROGRAM (MAP)
UNITED STATES DEPARTMENT OF AGRICULTURE (USDA), Foreign Agricultural Service (FAS), Marketing Operations Staff, Box 1042
1400 Independence Avenue S.W.
Washington, DC 20250-1042 USA
TEL: 202 720-4327
URL: http://www.fas.usda.gov/mos/programs/mapprog.html

OFFICE OF THE UNITED STATES TRADE REPRESENTATIVE
URL: http://www.ustr.gov/

U.S. CENSUS BUREAU
FOREIGN TRADE STATISTICS
http://www.census.gov/foreign-trade/www/

U.S. DEPARTMENT OF AGRICULTURE
FOREIGN AGRICULTURAL SERVICE (FAS)
URL: http://www.fas.usda.gov/default.htm

U.S. GOVERNMENT EXPORT PORTAL
URL: http://www.export.gov/

U.S. TRADE QUICK-REFERENCE TABLES
http://www.ita.doc.gov/td/industry/otea/trade-detail/

INTERNATIONAL:

INTERNATIONAL TRADE CENTRE (ITC)
UNCTAD/WTO
Palais des Nations, CH-1211
Geneva 10, Switzerland
Tel: + 41 22 730 0111
Fax: + 41 22 733 4439
E-mail: itcreg@intracen.org
URL: http://www.p-maps.org/mns/medplants.php
APPENDIX VII  OTHER USEFUL ADDRESSES

BUYERS GUIDES

ALLURED’S FLAVOR AND FRAGRANCE MATERIALS ONLINE
A comprehensive international directory of materials used in the creation of flavors and fragrances, including all known suppliers
URL:  http://64.78.48.186/ffm/

AMERICAN HERBAL PRODUCTS ASSOCIATION MEMBERSHIP DIRECTORY / BUYERS’ GUIDE
American Herbal Products Association
8484 Georgia Avenue, Suite 370
Silver Spring, MD 20910 USA
TEL: 301.588.1171
FAX: 301.588.1174
URL:  http://www.ahpa.org

BUYERS GUIDE TO SUPPLIERS OF NUTRACEUTICALS AND FUNCTIONAL FOOD INGREDIENTS
Institute of Food Technologists
This Buyer’s Guide includes the 900 companies that exhibited at IFT FOOD EXPO®. Company descriptions, products, and full contact information are included.
URL:  http://209.242.196.12/

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Virgo Publishing, Inc.
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Fax: 480.990.0819
http://www.naturalproductsinsider.com/ibg/

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Herb Growing & Marketing Network
E-mail:  herbworld@aol.com
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NUTRACEUTICALS WORLD INTERNATIONAL BUYERS’ GUIDE
Serving the Dietary Supplement, Functional Food and Nutritional Beverages Industries
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Fax: 201-825-0553
E-mail:  nutraceuticals@rodpub.com

NUTRITIONAL OUTLOOK BUYERS GUIDE
The Manufacturer’s Resource for Dietary Supplements & Healthy Foods and Beverages
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Los Angeles, CA 90064 USA
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Fax: 310.445.4299
E-mail:  feedback@nutritionaloutlook.com
URL:  http://www.nutritionaloutlook.com

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http://www.ota.com/online%20directory/ed_home.htm

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http://www.ota.com/online%20directory/Directory%20nest.htm
ENDANGERED PLANTS & SUSTAINABILITY ORGANIZATIONS

COMMITTEE ON THE STATUS OF ENDANGERED WILDLIFE IN CANADA
COSEWIC Secretariat
c/o Canadian Wildlife Service, Environment Canada, Ottawa, Ontario K1A 0H3
TEL: 819 953-3215
FAX: 819 994-3684
E-mail: cosewic/cosepac@ec.gc.ca
URL: http://www.cosewic.gc.ca/index.htm

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA (CITES)
International Environment House
15, chemin des Anémones, CH-1219 Châtelaine-Geneva, Switzerland
TEL: + 41 22 917 8139
FAX: + 41 22 797 3417
E-mail: cites@unep.ch
URL: http://www.cites.org/

NATIONAL CENTER FOR THE PRESERVATION OF MEDICINAL PLANTS
33560 Beech Grove Rd. Rutland, OH 45775 USA
TEL: 740-742-4401
FAX: 740-742-8303
URL: http://www.ncpmh.org

PLANT CONSERVATION ALLIANCE, MEDICINAL PLANT WORKING GROUP (MPWG)
4401 N. Fairfax Drive, Room 750
Arlington, VA 22203 USA
E-mail: plant@plantconservation.org
URL: http://www.nps.gov/plants/medicinal/workinggroup.htm

RAINFOREST ALLIANCE SUSTAINABLE BOTANICALS PROGRAM
665 Broadway, Suite 500
New York, NY 10012 USA
TEL: 212.677.1900
E-mail: canopy@ra.org

TRAFFIC International
219a Huntingdon Rd
Cambridge, CB3 ODL, UK
TEL: +44 1223 277427 / FAX: +44 1223 277237
E-mail: traffic@trafficint.org
URL: http://www.traffic.org/

UNITED PLANT SAVERS (UpS)
PO Box 77, Guysville, OH 45735 USA
TEL: 740 662-0041
FAX: 740 662.0242
E-mail: info@unitedplantsavers.org
URL: http://unitedplantsavers.org/

UNITED STATES FISH & WILDLIFE SERVICE ENDANGERED SPECIES PROGRAM
http://endangered.fws.gov/
FAIR TRADE ORGANIZATIONS

GLOBAL EXCHANGE FAIR TRADE PROJECT
Fair Trade Teas, Coffees, Chocolates
110 Capp Street, Second Floor
San Francisco CA 94110 USA
TEL: 415-553-4412
E-mail: storemaster@globalexchange.org
http://www.globalexchange.org/stores/producers/

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Oakland, CA 94612 USA
TEL: 510.663.5260
FAX: 510.663.5264
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URL: http://www.transfairusa.org

HERBAL RESEARCH AND EDUCATION ORGANIZATIONS

AMERICAN BOTANICAL COUNCIL (ABC)
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Tel: 512-926-4900
Fax: 512-926-2345
E-mail: abc@herbalgram.org
URL: http://www.herbalgram.org/

AMERICAN HERBALISTS GUILD (AHG)
1931 Gadds Road
Canton, GA 30115 USA
TEL: 770 751-6021
FAX: 770 751-7472
E-mail: ahgoffice@earthlink.net
URL: http://www.americanherbalistsguild.com/

AMERICAN NUTRACEUTICAL ASSOCIATION
5120 Seltirk Dr, Suite 100
Birmingham, AL 35242 USA
TEL: 205-980-5710
Fax: 205-991-9302
E-mail: info@ana-jana.org
URL: http://www.americanutra.com/

AROMATIC PLANT PROJECT
P.O. Box 225336
San Francisco, CA 94122-5336 USA
TEL: 415 564-6785
FAX: 415 564-6799
E-mail: Info@aromaticplantproject.com
URL: http://www.aromaticplantproject.com/

BOTANICAL SOCIETY OF AMERICA (BSA)
PO Box 299, St. Louis, MO 63166-0299
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FAX: 314-577-9515
E-mail: bsa-manager@botany.org
URL: http://www.botany.org/

DIETARY SUPPLEMENT EDUCATION ALLIANCE™ (DSEA)
URL: http://www.supplementinfo.org/

EPHEDRA EDUCATION COUNCIL (EEC)
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Washington, DC 20006 USA
E-mail: Richard@ephedrafacts.com
URL: http://www.ephedrafacts.com/

HERB RESEARCH FOUNDATION (HRF)
4140 15th St., Boulder, CO 80304 USA
TEL: 303 449-2265
FAX: 303 449-7849
URL: http://www.herbs.org/

INTERNATIONAL COUNCIL FOR MEDICINAL AND AROMATIC PLANTS (ICMAP)
51 Boulevard de Montmorency
F-75016 Paris, France
E-mail: info@icmap.org
URL: http://www.icmap.org/

MINT INDUSTRY RESEARCH COUNCIL
P.O. Box 971
Stevenson, WA 98648
E-mail: mirc@gorge.net

NATIONAL INSTITUTES OF HEALTH
OFFICE OF DIETARY SUPPLEMENTS
6100 Executive Blvd., Room 3801, MSC 7517
Bethesda, Maryland 20892-7517 USA
TEL: 301 435-2920
FAX: 301 480-1845
E-mail: ods@nih.gov
URL: http://dietary-supplements.info.nih.gov/

SOCIETY FOR MEDICINAL PLANT RESEARCH
[gesellschaft für Arzneipflanzenforschung
Emmeringerstr. 11, D - 82275 Emmering]
TEL: +49/8141/613749
FAX: +49/8141/613749
E-mail: GA-Secretary@t-online.de
URL: http://www.ga-online.org/Welcome.html

TRADITIONAL MEDICINE (TRM) ESSENTIAL DRUGS AND MEDICINES POLICY (EDM)
World Health Organization (WHO)
CH-1211 Geneva 27 Switzerland
FAX: +41 22 791 47 30
E-mail: trm@who.int
URL: http://www.who.int/medicines/organization/trm/engtrmmain1-s.html

World Health Organization (WHO)
Collaborating Centre for Traditional Medicine (TRM) — National Center for Complementary and Alternative Medicine
NCCAM Clearinghouse
P.O. Box 7923, Gaithersburg, MD 20898
TEL: 301-519-3153 / FAX: 866-464-3616
E-mail: info@nccam.nih.gov
URL: http://nccam.nih.gov/
REGULATORY LINKS

U.S. DEPARTMENT OF AGRICULTURE:
Imported Organic Agricultural Products
National Organic Program (NOP)
http://www.ams.usda.gov/nop/indexIE.htm

U.S. FEDERAL TRADE COMMISSION:
Dietary Supplement Advertising Guide
http://www.ftc.gov/bcp/conline/pubs/buspubs/dietsupp.htm

U.S. FISH & WILDLIFE SERVICE:
American Ginseng Export Program
http://international.fws.gov/animals/ginindex.html
Exporting Goldenseal Rhizome
http://international.fws.gov/pdf/go.pdf
The Endangered Species Program
http://endangered.fws.gov/
U.S. Plant Species listed in the CITES Appendices
http://international.fws.gov/animals/plantpro.html

U.S. FOOD AND DRUG ADMINISTRATION:
Color Additives Exempt from Certification
http://www.access.gpo.gov/nara/cfr/waisidx_00/21cfr73_00.html
Cosmetic Good Manufacturing Practice Guidelines
http://www.cfsan.fda.gov/~dms/cos-gmp.html
Current Good Manufacturing Practice in Manufacturing, Packing, or Holding Dietary Ingredients and Dietary Supplements
http://www.cfsan.fda.gov/~lrd/fr030313.html
Guidance for Industry—Cosmetics Processors and Transports Cosmetics Security Preventive Measures Guidance
http://www.cfsan.fda.gov/~dms/secguid4.html
Guidance for Industry—Food Producers, Processors, and Transports: Food Security Preventive Measures Guidance
http://www.cfsan.fda.gov/~dms/secguid6.html
Guidance for Industry—Importers and Filers: Food Security Preventive Measures Guidance
http://www.cfsan.fda.gov/~dms/secguid7.html
Imports and Exports Guidance
http://www.cfsan.fda.gov/~lrd/imports.html
Office of Cosmetics and Colors
http://www.cfsan.fda.gov/~dms/cos-toc.html
Office of Nutritional Products, Labeling, and Dietary Supplements
http://www.cfsan.fda.gov/~dms/supplmnt.html
The Bioterrorism Act of 2002
http://www.fda.gov/oc/bioterrorism/bioact.html

U.S. FOREST SERVICE
Info on Botanical Wild Collection Permits
http://www.fs.fed.us/
STANDARDS ORGANIZATIONS

AMERICAN HERBAL PHARMACOPOEIA
PO Box 66809, Scotts Valley, CA. 95067 USA
TEL: 831-461-6318
FAX: 831-475-6219
Email: ahpadmin@got.net
URL: http://www.herbal-ahp.org/

DEMETER ASSOCIATION, INC.
Britt Road, Aurora New York, 13026 USA
TEL: 315 364-5617
FAX: 315 364-5224
E-mail: Demeter@Baldcom.net
URL: http://www.demeter-usa.org/index.htm

NATIONAL ORGANIC STANDARDS BOARD
URL: http://www.ams.usda.gov/nosb/index.htm

NATURAL PRODUCTS EXPO EXHIBITOR STANDARDS
New Hope Natural Media
http://www.naturalproductexpo.com/standards/dsp_standards.cfm

NSF INTERNATIONAL
PO Box 130140
Ann Arbor, MI, 48113-0140 USA
TEL: 734-769-8010
FAX: 734-769-0109
E-mail: info@nsf.org
URL: http://www.nsf.org/

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FAX: 413-774-6432
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URL: http://www.ota.com/AOSmainpage.htm

UNITED STATES PHARMACOPEIAL CONVENTION, INC.
12601 Twinbrook Parkway
Rockville, MD 20852 USA
TEL: 301-881-0666
E-mail: dietary@usp.org
URL: http://www.usp.org/

USP DIETARY SUPPLEMENT VERIFICATION PROGRAM
12601 Twinbrook Parkway
Rockville, MD 20852-1790 USA
TEL: 800-822-8772
URL: http://www.usp-dsvp.org/
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