



## *Ethnobotanical Leaflets*



# **Trends In Economic Botany: The Rising Use Of Herbal Supplements**

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The use of herbal remedies to treat health problems in humans is a tradition that dates back many centuries. A precursor to modern, Western pharmaceuticals, traditional healers used herbs to treat a wide range of ailments and afflictions. While many are familiar with their use by American Indians, the practice of herbal therapy dates back to ancient Chinese and Egyptian healers. Herbs were used in ancient times to treat anything from headaches (with willow bark tea, now an active ingredient in aspirin) to fever and premenstrual syndrome (with chamomile). In an age of modern pharmaceuticals and their ready availability in Western culture, it is easy to forget that approximately 40% of today's modern medicines are produced with chemicals derived from plants (Counter 1998).

In a trend reversal that has the modern medical community alarmed and puzzled, the sales of herbal remedies in the United States has increased dramatically. Traditionally, Europe has been the largest market for herbal remedies, accounting for 45% or \$7.5 billion in sales for 1997 (Scimone and Scimone 1998). Within Europe, Germany dominates the market with sales of \$3.6 billion, followed by France (\$1.8 billion), Italy (\$800 million) and the United Kingdom (\$300 million) (Scimone and Scimone 1998). Growth in the European market was predicted to be 5-10% in 1998-1999 and 15-20% in 1999-2000 (Scimone and Scimone 1998). The European market has become solidly established over the past 80 years, with a modest growth rate until recent years that has shown another upward trend.

The United States market is a completely different story. The herbal industry has "evolved exponentially over the past two years, with significant entry into the mass market within the past two years" (Botanicals International 1998). Sales of herbal supplements reached \$4 billion in 1998, up from \$1.6 billion in 1994, a rise of 250% (American Botanical Council 1998). Sales have been projected to increase between 50-100% in 1998-99 and between 20-25% in 2000-01 (Scimone and Scimone 1998).

### **What has caused this dramatic increase?**

While an editorial in the *New England Journal of Medicine* (1998) blamed this "reversion to irrational

approaches" on "disillusionment with the often hurried and impersonal care delivered by conventional physicians", it is also viewed as the economic influence of the aging baby-boomers. As they have become older, this generation has become more health conscious and increasingly dissatisfied with conventional medicine in their attempts to diminish the adverse effects of aging (Brenneman 1999). The Journal of the American Medical Association (JAMA) devoted its November 11 (1998) issue to the practice of alternative medicine, recognizing its' growing influence in conventional practice.

With this increased use also comes questions about the preparation, marketing and efficacy of many herbal remedies. Passage of the Dietary Supplement Health and Education Act in 1994 allowed vitamin and herbal supplements to be sold over the counter without clearance by the Food and Drug Administration. This has resulted in a wide range of quality for the most popular supplements with little information directly available on dosages, effects and possible interactions with prescription medication. The FDA responded with regulations requiring a uniform "Supplements Facts" label on all dietary supplements, effective in March of 1999. These labels include information on the concentration of active ingredients and the effects of the supplement.

### **What supplements are being taken?**

Market Facts (1998), a marketing publication produced by Celestial Seasonings, estimated that approximately 37% of adults age 18 to 54 have taken an herbal diet supplement. What did they take?

### **What do these supplements do and are they effective?**

The most popular herbal supplements sold have a wide variety of purported effects, with actual scientific evidence proving (or disproving) these effects variable in their conclusions when available at all.

Garlic (*Allium sativum* L.) is a native of Western Asia widely cultivated in the United States (Gleason and Cronquist 1991). It is available as cloves or in tablet form. Garlic has long been used to lower blood pressure and blood lipids, with studies showing a 7% reduction in systolic blood pressure. Most of the clinical studies on garlic powder tablets that have been standardized to yield about 5 mg of allicin (the active ingredient), demonstrate an 11% reduction in serum cholesterol and 12% reduction in triglycerides (Tyler 1999). The most recent studies indicate that garlic helps to maintain elasticity of the aorta in older men and women, an essential element to healthy functioning of the cardiovascular system (Tyler 1999).

*Echinacea*, also known as purple coneflower, was used widely by American Indians. The root was used as an antidote for venomous bites and stings, toothaches, tonsillitis and a local anesthetic (Kindscher 1988). More modern uses include therapeutic uses in urology, gynecology, internal medicine, antibiotic activity against Streptococcus and Staphylococcus and as an immune stimulant. German studies have shown that, when taken at the onset of colds or flu, white blood cell activity is increased resulting in an immune system boost (Chamberlain 1998).

Ginseng (*Panax quinquefolius* or American ginseng and Asian ginseng or (*Panax ginseng*) is used in the root form and can be found in capsules, tablets and teas. Widely recognized as an energy booster, stress reducer and memory enhancer, it is also thought to improve sexual interest and potency and boost immunity (Schardt 1999). Ginseng was used by Mongol emperors up to 4,000 years ago and its name is derived from the Chinese for "man-root" because the fleshy, white roots often have a human shape (Rumbelow 1999). However, scientific studies have failed to prove a significant effect by ginseng as an energy booster (Schardt 1999). There is also a great difference in the concentration of active ingredients found in wild ginseng, which is more potent, versus cultivated ginseng.

Ginkgo (*Ginkgo bilboa*, or maidenhair tree) is of Asian origin and thought to be the oldest living tree species, dating from over 200 million years ago (Gleason and Cronquist 1991). Ginkgo has been widely proven to improve brain function (LeBars et al.1997) and recent research indicates its ability to alleviate antidepressant-induced sexual function (Starbuck 1999). This is one of the few herbal remedies given wide recognition for its effectiveness.

St. John's Wort (*Hypericum perforatum* L.) is popularly known for its anti-depressant effects. Historically, the Greeks and Romans used it as a folk medicine to treat wounds and sores and it was also used as a medicinal plant by the North American Cherokee Indians (Mitich 1994). Most of the clinical studies examining the effects of St. John's Wort in the treatment of depression had positive outcomes, but others were flawed or inconclusive, demonstrating a need for further, long-term research. (Linde et al. 1996, Volz 1997).

These five most popular herbs have experienced a minimum of a 29% increase in sales since 1995 (Ginseng) up to a 2000% increase (St. John's Wort).

With such an increased demand for herbal remedies, it is essential that their effectiveness be scientifically tested and marketing of these unregulated products is standardized. For example, an independent test of St. John's Wort by the Los Angeles Times reported that 3 of 10 brands of St. John's Wort had no more than half the potency listed on the label and four other brands had less than 90%. Another study of 64 "pure" ginseng products found that 60% of them were not potent enough to be effective. There is also the additional problem that the general public does not fully understand the dangers of taking supplements. From January 1993 to October 1998, the Food and Drug Administration received 2,621 reports of serious problems, including 101 deaths, linked to the use of herbal supplements. While these products can be very beneficial, they must be used under proper medical supervision to avoid undesired results.

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[EBL HOME PAGE](#)