

Current Opportunities and Best Practices for Ginseng[©]

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THE STATUS OF AMERICAN GINSENG

American ginseng (*Panax quinquefolius*) is a small, slow-growing herbaceous perennial herb that grows in hardwood forests throughout most of eastern North America. It is similar to Asian ginseng (*Panax ginseng*) that has been used in Asia as a medicinal herb for thousands of years. Overharvesting of wild populations of ginseng in China, Korea, and Japan made the root of this plant very valuable. The first American ginseng was exported to China from Canada in the mid-1700s. It was well-accepted by the Chinese and soon huge amounts of American ginseng roots were being harvested from forests from Southern Ontario and Quebec south to North Carolina for export to China.

American ginseng is still a highly valued root that is wild-harvested and cultivated throughout its native range, and over 90% of it is exported to Asia. Wild-harvesting ginseng has been a source of income for generations of families in the Southern Appalachian Mountains. In hard economic times people turn to the abundant forests to hunt, fish, and gather medicinal herbs. Since ginseng is worth 10× or more than any other herb in the forest, a whole culture has developed around the gathering and selling of it.

Because of its popularity, American ginseng is no longer abundant in North American forests. To protect the plant from becoming an endangered species, there are now state, federal, and international regulations governing the trade of ginseng. Internationally, ginseng is protected by the Convention on International Trade in Endangered Species (CITES). In the United States, the CITES regulations are managed by the U.S. Fish and Wildlife Service. On the state level, it is regulated by one of several state agencies, usually the department of agriculture or department of natural resources. These regulations include designated harvest seasons and minimum ages for roots to be dug. Only registered dealers can sell ginseng roots across state lines. Most wild-harvesters and many growers sell their ginseng to these dealers who must then obtain a CITES permit or certificate to export cultivated or wild-collected ginseng, sliced roots, or parts of roots.

CULTIVATION OF AMERICAN GINSENG

There is not sufficient wild ginseng left to satisfy demand, so ginseng is also cultivated. On the Asian market, ginseng is graded into 30 or more grades based on its appearance. Old, bulbous, "man-shaped" wild roots with long necks of bud growth scars and concentric rings around the root are the most valuable. How ginseng is cultivated greatly affects its value and there are three major production systems that are used. Ginseng is almost exclusively propagated by seed.

Production Systems

1. Polypropylene Shade Cloth Structure System. Most of the ginseng cultivated in North America is grown under tall, black, polypropylene shade cloth structures. The majority of that industry is based in Ontario and Wisconsin. By using high plant populations, fertilizers, and fungicides, roots can be harvested in 3 to 4 years. This system produces very high yields of large, smooth roots that bring about \$75 per dried pound.

2. Woods-Cultivated System. Ginseng is also grown in a woods-cultivated system. This is very similar to the artificial shade system with seed sown densely into raised beds that have been limed and fertilized for optimum results. Fungicides are usually needed because the dense foliage makes the plants more susceptible to a number of diseases. The advantages to this system are that the shade is free and the roots, which can be harvested in 5 to 6 years, look a little more wild than those produced under artificial shade. Root

yields are lower than under artificial shade, but the roots bring about \$200 per pound. Disadvantages are that many growers do not have appropriate forested areas for ginseng production, it can be difficult to get equipment into the woods, and beds must be fit around trees, streams, and other natural obstructions.

3. Wild-Simulated System. The third production system is referred to as wild-simulated. The objective of this system is to produce a root that is indistinguishable from a wild root. To grow wild-simulated ginseng, the leaf litter is raked away, a little gypsum may be scattered on the soil surface, seed is scattered at a very low rate (about 1 oz. of seed over 100 ft²), and the leaf litter is raked back over the seeded area. No fertilizers or fungicides are used. The grower tries to protect the plants from wildlife, but does little else. The roots are usually grown for 10 years or more and yields are very low, but the roots bring prices very similar to those of wild. At this time, that is about \$800 per dried pound. The advantages of this system are that it is easy and inexpensive. The disadvantage is the long wait time till harvest during which many things can happen to the roots.

OPPORTUNITIES FOR GROWERS

Wild-Simulated Ginseng Production

Consumers in Asia and other countries are showing increased interest in wild-simulated ginseng, which should help reduce pressure on wild populations. We refer to this as “conservation through cultivation”. Consumers are becoming more educated about the plight of wild ginseng and desire a more sustainable and affordable product. Many manufacturers and herbalists who currently use wild ginseng are now seeking a more consistent product that is traceable, clean of any possible contaminants and adulterants, and can have a positive identity to satisfy the requirements of the federal Good Manufacturing Practices.

Native Seed for Growers

Most of the commercially available ginseng seed used for propagation comes from plants grown under artificial shade structures. Because the plants are regularly treated with fungicides, the seed probably produces plants with little natural disease resistance. So the suitability of that seed for growing ginseng in a wild, unprotected environment is probably not ideal. There is also much discussion among botanists about bringing germplasm from these northern artificial shade gardens into the forests. Many would like to see the creation of native germplasm repositories and sources for providing native seed to growers. There is not agreement about whether these seed sources should be public, private, or a combination of the two.

Ginseng seed is not easy to produce and sell. When the ginseng berries are ripe, the seeds contained therein have immature embryos. The seed must be stratified in a moist environment and exposed to alternating warm and cold temperatures to satisfy their double dormancy requirements. The usual method of handling ginseng seeds involves putting green (freshly harvested seed) in moist sand in a stratification box and burying the box in a shaded area outdoors where it is exposed to natural temperature changes and rain. After a year the seed is removed from the box and sold as stratified seed. The stratified seed is usually planted in the fall and expected to germinate the following spring.

Ginseng Seedlings

Although ginseng is almost always grown from seed, some growers and many gardeners prefer to plant 1- to 2-year-old ginseng seedlings. Few nurseries provide these seedlings and fewer still provide them in commercial quantities.

Ginseng for Home Gardeners

Gardeners are interested in including ginseng in their native plant, shade, and medicinal plant gardens, but there is limited plant material and information available for them.

Ginseng as a Potted Plant

Ginseng can be grown in pots and sold as large plants (1-gal pots) for planting in the garden. Ginseng can also be sold as a unique potted plant by florists with a card describing its history and healing properties along with instructions on how to plant it in the garden.

Vegetative Propagation

Ginseng can be vegetatively propagated by cutting the bud with a little bit of the rhizome off the top of the root. This method is rarely used and many people don't believe it work. Some conservationists would like to encourage wild-harvesters to do this whenever they dig a root; that is in addition to planting any seeds that may be on the plant when they dig it. More research needs to be done on this method.

THE CHALLENGES

All is not rosy in the world of ginseng. Because of the high value of the roots, poaching from public lands and stealing from private lands are a big problem. Stealing ginseng from a grower is a felony in some states, but catching the thieves is difficult and prosecuting them is rare. The prevalence and threat of these illegal activities should not be taken lightly. Anyone who grows ginseng should expect to have some stolen and should take every measure to protect their plantings. Recent "reality" television programs that glamorize wild-harvesting ginseng and give the impression that it is an easy way to make money have only exasperated the problem.

Diseases such as *Alternaria* and *Phytophthora* can cause serious damage to a bed of ginseng. Site selection to avoid areas with poor drainage and close monitoring of plants is necessary to prevent diseases from getting out of hand.

Wildlife, such as deer, groundhogs, voles, and turkeys, can also cause serious damage to a ginseng planting. In some areas, deer browse is considered the major threat to ginseng.

MORE INFORMATION

This has been a very brief introduction to ginseng and just a few of the opportunities available to growers. For more information, refer to the book *Growing and Marketing Ginseng, Goldenseal and Other Woodland Medicinals* by Jeanine Davis and W. Scott Persons, 2014, New Society Publishers. Also visit the website, <<http://ncherb.org>>, and the many articles and links therein.

