

Ginseng

Introduction

Ginseng is a perennial herb that has been used for medicinal purposes in China and other Asian countries for centuries. American ginseng is native to the rich hardwood forests of Canada and the eastern half the United States, including Kentucky.

Marketing

The market for ginseng is well-established with most Kentucky ginseng sold to state-licensed dealers. Kentucky growers could also explore various alternative marketing opportunities. For example, health food stores, co-ops, or herbalists might be interested in purchasing fresh or dried ginseng. Direct sales to consumers may also be an option.

Market outlook

The market for field-cultivated ginseng has been declining in recent years, but there continues to be a strong market for both wild-simulated and woods-grown ginseng. The strength of the Pacific Rim economy is critical for ginseng prices because 85 percent of American ginseng is exported to Hong Kong and then shipped throughout Southeast Asia.

Production considerations

General

Ginseng plants must be provided with growing conditions similar to those present in wild sites. This includes moist, well-drained soil high in organic matter and 70 to 80 percent shade. The best wooded sites are those with long-lived, deep-rooted deciduous trees,



such as oak, hickory, beech and walnut. Wild plants that indicate good ginseng growing conditions include rattlesnake fern, spleenwort, Jack-in-the-pulpit and wild ginger.

Production methods

Wild ginseng grows naturally without human influence. However, since ginseng is considered an endangered species, its collection and sale is strictly regulated.

Wild-simulated ginseng is grown in untilled soil in a favorable forest location. Little site preparation is required other than raking away the leaf litter down to the topsoil. Seeds can be pushed into the soil individually or raked into the top one inch of soil. The leaf litter is then raked back over the planting. Once planted, no further labor is required until harvest when plants are hand-dug. Wild-simulated ginseng roots most closely approximate those of wild ginseng and therefore bring the best price.

Woods-grown ginseng is cultivated in tilled beds under the



natural shade of hardwood trees. Site preparation includes clearing away rocks, understory growth, and undesirable trees. Well-rotted organic matter may be added to the beds. Seeds are either broadcast or planted in rows. Maintenance can include hand weeding, the continued removal of competing understory plants, thinning seedlings and pesticide applications.

Field-cultivated ginseng is grown in well-tilled raised beds in an open area. Leaves, rotted sawdust or woodland soil may be added to the beds. Artificial shade is provided by wooden lath houses or black polypropylene shade cloth. Seeds are planted in furrows and mulch is added immediately after seeding. Maintenance consists of weeding, adding more mulch, fertilizing and applying pesticides.

Seeds and transplants

Starting plants from seed is the cheapest and most common way to establish the planting initially. Plantings can also be started by purchasing one-year-old roots. While this method is more expensive than starting from seeds, the plants will come into seed one year sooner.

Seed harvest normally starts by the third or fourth year. Producers will need to decide whether to harvest seed to sell for additional income or to remove flower buds to allow larger root development.

Pest management

Some insect pests to anticipate are jumping plant lice, tree crickets and aphids. *Alternaria* blight and *Phytophthora* root and crown rot are the main disease concerns. Fungicides are routinely applied to ginseng cultivated under artificial shade. Rodents, such as field mice, can do a great deal of damage, especially in wooded sites. Weed control, generally by hand, will be necessary in some plantings. Despite these potential problems, human theft will be one of the major concerns of the ginseng grower.

Harvest and storage

The roots can be harvested after four to five years of cultivation under artificial shade. Roots in woodland sites may require six or more seasons of growth. Harvesting from raised beds can be done by hand, with a potato fork or with a mechanical digger. Wild-simulated root is usually dug with a modified hoe or trowel. Roots are washed and then dried slowly, either in the open or in drying rooms with forced hot air. Roots can be stored in a dry, rodent-proof area until sold. Expect a yield of at least 1,500 to 2,000 pounds dry weight per acre with 100 to 250 dry roots to a pound for cultivated root. Wild-simulated root may yield closer to 100 to 600 pounds per acre and contain 200 to 350 dry roots per pound.

Labor requirements

Labor requirements for ginseng production are unpredictable, varying considerably depending on the intensity of cultivation and the production year. Intensively cultivated woods-grown ginseng in Kentucky may require as much as 3,000 hours per acre for land preparation and planting, an average of 600 hours maintenance per acre during production years and 3,500 hours per acre for harvest and drying operations. On the other hand, the same size woods planting cultivated less intensively can require 3,600 hours over a period of six to eight years. An acre of wild-simulated ginseng can require 1,500 hours over six to 12 years.

Economic considerations

Commercial ginseng production can be quite profitable, but it requires an enormous commitment of time and money. Generalized budgets are very difficult to establish due to variations in production methods. The lowest investment and production costs can be expected for wild-simulated ginseng, while the greatest expenses are required for intensively cultivated field-grown ginseng under artificial shade.

Ginseng values depend on production method,

root appearance and quality. Wild ginseng is considered the most valuable, selling for \$450 per pound of dry weight in 1999. Next in value are wild-simulated (\$250 per pound dry weight) and woods-cultivated ginseng (\$150 per pound dry weight) because they most closely resemble wild roots. Field-cultivated ginseng values have declined in recent years with a value under \$20 per pound dry weight in 1999. Prices growers receive for ginseng roots can vary tremendously from season to season.

The following figures were adapted for Kentucky from information presented at the 1998 Specialty Forest Products/Forest Farming Conference and are based on 1/2 acre.

Method	Years to harvest	Total costs	Net profit
Field cultivated	3 to 4	\$33,500	\$(20,000)
Woods cultivated	6 to 8	\$24,135	\$5,865
Wild simulated	6 to 12	\$9,690	\$14,310

More information

- Cultivating Ginseng in Kentucky ID-60 (UK, 1994, currently under revision)
- Medicinal Herb Seed and Root Sources for Planting in Kentucky (UK, 2001): <http://www.ca.uky.edu/agc/pubs/ho/ho73/ho73.htm>
- Ginseng: A Production Guide for North Carolina (North Carolina CES, 1997): <http://www.ces.ncsu.edu/depts/hort/hil/pdf/ag-323.pdf>
- Ginseng, Goldenseal, and Other Native Roots (ATTRA, 2002): <http://www.attra.org/attra-pub/ginsgold.html>
- Growing American Ginseng in its Native Woodland Habitat in Proceedings from the 1998 Specialty Forest Products/Forest Farming Conference - table of contents and ordering information at the following web site: http://www.cnr.umn.edu/FR/CINRAM/publications/proceedings_from_the_1998_specia.htm
- Producing and Marketing Wild Simulated Ginseng in Forest and Agroforestry Systems (Virginia CES, 2000): <http://www.ext.vt.edu/pubs/forestry/354-312/354-312.html>