

History and Cultivation of Ginseng

Learn the types of ginseng and how to harvest legally in the state of Pennsylvania.

During the 1700's markets for a botanical, American ginseng (*Panax quinquefolius*), were developed and the rush was on. Many fortunes were made by harvesting the great numbers of roots found growing wild. One notable character in history, Daniel Boone, made much of his fortune from exploiting ginseng.

Wild ginseng roots routinely sell for \$500 or more per pound, depending on quality and age.

Ginseng has been so widely collected in the 200 years since its discovery, that its existence is potentially threatened in many states. For this reason, it now receives protection under the Convention on International Trade in Endangered Species (CITES). Each state that allows wild harvest must have an approved management plan before any legal harvesting occurs. This does not apply to cultivated roots which must have certification of cultivation. Many states in the east and mid-west have legally certified harvesting programs. Pennsylvania is one of these states.

Prior to planting any ginseng and then again prior to harvest, contact the local Department of Conservation of Natural Resources to inquire about changes in regulations and how these regulations apply to cultivated ginseng.

Because of its rarity, ginseng is a very valuable commodity. Dried roots will routinely sell for \$500 or more per point, depending on quality and age. History of cultivation in Pennsylvania goes back at least 100 years, with publications on cultivation methods dating as far back as 1902. This site will present some modern information on ginseng production in Pennsylvania. Ginseng production is not a new idea for Pennsylvania, but a time tested, traditional crop. Indeed, many "wild" roots are remnants of old plantations.

Types of Ginseng

Most people have heard of ginseng, even if it is just through brand name ginseng product television advertisements. Names like Siberian ginseng, red ginseng, Asian ginseng, and American ginseng appear in the news, in advertisements, and in stores.





Ginseng plant, stage 2. Credits: Eric Burkhart

Siberian ginseng (*Eleutherococcus senticosus*) is a plant discovered when researchers were attempting to find alternatives to American ginseng. It is native to northern Asia and has little value as a crop for America. Asian ginseng (*Panax ginseng*) is the original ginseng. This plant has been used by Traditional Chinese Medicine (TCM) for thousands of years. Commercial cultivation of roots in Asian is a **huge** industry. American producers, while growing this crop in some cases, have limited opportunity to successfully compete in this market. American ginseng (*Panax quinquefolius*) is the true wild ginseng of North America. This is the ginseng suggested for cultivation in Pennsylvania.

All of these types of ginseng are used as adaptogens. Adaptogens are herbs taken to restore your equilibrium, to use an old quote, "to fix what ails you." Because TCM focuses more on maintaining health than on curing diseases, ginseng has enjoyed a fairly good demand. Even during the recent downturn in the Asian economy, wild ginseng sold for \$250 a pound. American ginseng also serves as a caffeine substitute and even a seasoning.

Markets for Cultivated Ginseng

Four market types of ginseng exist:

- truly wild
- wild-simulated
- woods cultivated

- field-grown

Again, CITES regulates the collection of truly wild ginseng. Only small amounts are actually sold each year. Field cultivated ginseng is produced in great quantities each year from farms primarily in Wisconsin and production can and does exceed market demand. Woods-cultivated, also called woods-grown, ginseng is grown across the northeastern United States as well as Michigan, and has potential for Pennsylvania producers. While both woods-cultivated and field-grown ginseng have markets, wild-simulated ginseng presents the greatest likelihood of profit for forestland owners. Wild-simulated ginseng describes roots planted in sites identical to those where wild ginseng normally occurs. In many cases, the roots produced by wild-simulated ginseng are identical to wild roots. The rest of the discussion on ginseng will cover wild-simulated ginseng production.



Woods cultivated ginseng. Credits: Eric Burkhart

Where to Buy Seeds and Roots

Catalog prices for ginseng seeds and roots vary greatly; use caution and check with several sources.

These suppliers are provided for the convenience of the reader and in no way represent an endorsement. If seed or root producer wishes to have their name included on this list, please contact [Robert Hansen](#)

- American Ginseng Garden: 423-743-3700
- Barney's Ginseng Patch: 314-564-2575
- Bob Bold: 502-533-6004

- Buckhorn Ginseng: 608-647-2244
- Mel Buetsch: 715-443-2276
- Tom Condon: 715-845-9489
- Epler Fur: 717-366-1261
- Ginseng America: 607-326-3123
- Ginseng USA: 715-845-4361
- Heise's Farm: 715-675-3862
- Hickory Ridge: 301-739-4061
- Hsu's Ginseng: 800-826-1577
- Matt Hull: 417-883-7904
- Madison Furs: 814-382-2501
- Mellingers, Inc: 330-549-9861
- Panax Q. Farm: 604-542-1816
- Pickerell's Ginseng: 502-358-4543
- Riehle Farms: 715-359-8355
- Roots "O" Gold: 507-667-6310
- Sylvan Botanicals: 607-264-8455
- Tuskegee Valley Ginseng: 704-293-5189

Suppliers list provided by:

- [Steve Bogash](#) - Penn State Extension
- Bob Beyfuss - Cornell Cooperative Extension

Cultivation of Ginseng

Ginseng has fairly stringent environmental requirements. It requires at least 70 percent shade. The soil must have enough base nutrients (15-20 percent base saturation) to meet its needs, but not so much that the soil pH exceeds 6 (liming is out of the question unless pH is too low). The soil must be moist, but well-drained. To achieve this, the organic matter content has to be pretty high. Heavy clays and very sandy soils are poor for ginseng. Ginseng does not compete well with other plants, so vegetation control is necessary.

Ginseng grows best in small patches, not rows or giant beds. So plantings should be dispersed throughout your woodlot.

Root Quality

When assessing root quality, remember that field grown roots sell for approximately \$20 a pound; however, wild ginseng can sell from \$500 to \$1000 a pound. In other words, it pays to produce roots that look wild.



Harvested roots. Credits: Eric Burkhart

The market prefers old roots. Advanced age should result in large, thick roots if grown on a good site. Roots that are overmature (greater than 50 years) may be degraded due to senescence; however, few producers would let their roots wait for that long. The roots should have a coarse, almost corrugated surface. The market demands air dried roots that appear beige to brown in color. Resemblance to humans or parts of the human anatomy will increase the sale price. Exercise special care when harvesting to salvage all fine roots (in some markets this increases sale price). Damage in handling should be avoided. In the case of some markets where the appearance of the root is the most important characteristic, fine quality specimens sell for many times more than a similar poorly handle roots.

Assessing the quality of your roots is a monumental task. In many cases, especially when sales are to brokers, appearance may not be as important as total weight; however, with sales to buyers, ethnic markets and direct consumers, appearance may make a great deal of difference in the price offered.

How Do I Get Started?

After deciding on a site, ordering seeds and seedlings is next.

Ginseng seeds are small and about 7500 make a pound, costing roughly \$100. Never buy cheap seed. cheap seed may be dead seed. Make sure you buy **stratified** seed. Ginseng has a complicated dormancy. They need to sit in the ground after they are picked, through an entire winter, another summer and another winter before they will germinate. Germination usually occurs in March in Pennsylvania.

Stratified seed purchased and planted in fall will germinate in spring. Stratified seed purchased in spring will already be germinated. It is difficult to handle because it will dry out quickly. Great care is necessary to keep it moist or the entire lot will dry up and die. Therefore, it is best to plant in fall.

One-year old roots are the cheapest transplants to purchase. They are often the results of thinnings of plantations but may be specially grown for the purpose. One-year old roots sell for between \$0.25 and \$0.50 depending on the quantity purchased. While these roots are far more expensive than seed, the roots provide a much greater likelihood of success. Order both seeds and roots well in advance because producers sell out very quickly.

Preparing the Site

If you have read this far, you are probably interested in trying ginseng cultivation for yourself.

Plant wild-simulated ginseng in patches of 50 seeds or seedlings. Producers can plant twice as many seeds as they need, both to insure success and to provide transplants at the end of the first year. Site preparation consists of removing all course organic matter from the site, removing weeds and small saplings, planting the seeds or seedlings and then replacing the organic matter. The organic matter serves as a native mulch, retaining moisture and reducing weed growth. Either spread or plant seeds at a spacing of six inches apart. This spacing may seem large but unless your plan to thin them in the future, this provides enough growing space for each of the plants. Planting at a spacing of one or two inches yield many new seedlings for transplant in fall and a stronger assurance of success even with poor germination.

If you use seedlings (roots), plant them six to twelve inches apart. The roots should be planted horizontally in the bed instead of vertically. These plants will more likely develop the appearance of natural roots if grown in this manner (this tip provided by Bob Beyfuss, Cornell Cooperative Extension). Do not plant roots closer than six inches apart. A wider spacing is probably better.

As with seeds, exercise care not to allow roots to dry out.

Care

During the early years, care for ginseng is critical to production success.

Weeding is very important until the patch is well-established. During the first year, two or three weedings are sufficient. After establishment, approximately three years, weed as needed.

Slugs are a major problem in some areas. Numerous products kill slugs, but few can be used directly on the plants. It is illegal to use pesticides in a manner for which they are not labeled. This includes use on unlisted plant species. Pieces of wood, cut fruit, pans of beer, and overgrown lettuce leaves will all attract slugs. Visit your bait frequently and kill any slugs you find. The pans of beer both attract and drown the slugs.

Diatomaceous earth is also a good product for slug control. It is sold in hardware and garden stores. Diatomaceous earth (the skeletal remains of a tiny organism called a diatom) is an organic alternative to pesticides. The main limiting factor for diatomaceous earth is rain. It is essential to reapply it after every rain, coincidentally, the prime time for slugs.

Poison slug baits are also available, but follow label directions.

Field grown ginseng is subject to numerous fungal diseases and might require up to 50 fungicidal sprayings a year. Forest grown ginseng is subject to fall fewer diseases. While fungal diseases can occur, especially during very wet years, planting ginseng in small patches limits the spread of the disease.

Harvesting

Wild-simulated ginseng requires eight or more years between planting and harvest. The older roots are worth much more.

This is because the root grows in size every year and older roots are worth more money per pound. While some of the bigger roots may be saleable in five years, the roots will not have produced their full potential.



10 year old ginseng. Credits: Eric Burkhart

Do not harvest before contacting a broker or a buyer. Each buyer has different specifications for their market. Each broker, the person who buys for resale to a the larger buyer, may need to meet a different set of specifications. Before harvesting, discuss your operation with a representative of the Department of Conservation of Natural Resources. Regulations pertaining to ginseng become more stringent every few years due to concern for the wild ginseng resource. A license may be necessary to sell out of state or to bypass the broker.

In general, use a garden fork or your fingers to harvest. Recall that well-formed, intact roots can demand the best price. Therefore, always exercise care and be gentle. Know your markets!

After harvesting, wash roots gently with a garden hose and place them on screens to dry. **Do not** use a scrub brush, just wash the solid chunks away. The natural color of the root is a light brown, so do not try to wash that off. If harvesting when the soil is dry, most of the soil will remain in the woods anyway.

Do not use heat to dry your roots. Air dry them on a screen.

If you have wildcrafted ginseng in the past, many of the older techniques for curing ginseng should **not** be used today. Some of these outdated techniques are listed below.

- Do not heat dry. Never dry in the hood over your range or over a wood stove.
- Do not put ginseng on a string to dry.
- Never peel ginseng.

- Do not pry ginseng out of the ground, gently remove it keeping the roots, even fine roots intact.
- Keep the necks (the skinny part attaching the stem of the plant to the root) attached.
- After the roots are dried, never store them in plastic.

Marketing

Ginseng has a wonderfully developed network of brokers in most states where it naturally occurs. Selling to these brokers may provide the most feasible method for marketing, especially if you sell only small quantities.

Marketing directly to the consumer is another possibility. This requires marketing through contacts in ethnic markets who appreciate the quality difference between wild-simulated and field grown ginseng. This is not easy and will require a license as well as substantial efforts to develop contacts.

Forest Cultivation

Most sunlight passing through the tree canopy strikes the ground as sun flecks (patches of sunlight that move as your woodlot's angle to the sun changes during the day) or as indirect rays (sunlight coming in at different angles due to reflection). These conditions are horrible for some crops like corn and most other field crops., however, these conditions are perfect for many shade-loving plants, like ginseng and goldenseal. Added benefits to growing in woodlots include reduced crop losses due to poor weather conditions (the forest reduces the intensity of many weather fluctuations) and increased use of your land holdings.

Good forest soils for growing ginseng and goldenseal are rich, moist and well-drained. The best sites are usually mid-slopes. Stands at least 30 years old with a minimum of 70% shade work well. Good overstories can include ash, sugar maple, beech and basswood. Ginseng will often grow under oaks and red maple, but these trees can tolerate poorer soils than ginseng.

Good herbaceous plant indicators of prime soil conditions for ginseng include ginseng, (if it is growing there it can grow there), Christmas fern, indicator fern, wild ginger.

Dry sites are not suited to ginseng or goldenseal production. Highly acidic. low base nutrient (Calcium, magnesium, potassium) soils are also unsuitable. It is a good idea to have a soil test done prior to investing in ginseng or goldenseal production.

Soils with 15-20 percent base saturation (determined from your soil test) AND pH between 4-6 may work for ginseng production. These are very rough guidelines and wild ginseng and goldenseal can certainly be found growing outside of these ranges.

Deer will damage ginseng plantings. While not a preferred browser species, deer will eat ginseng. Small mammals will eat the seeds. Slugs will browse the leaves. These three groups of herbivores may become a problem with ginseng plantations. While slug and small mammal control is possible, deer browsing control might be more difficult. Fences can work but not without drawing great deals of attention to your planting. Consider test plantations on your property to gauge the potential for deer damage as well as the potential for success with the crop. By contrast, very few herbivores will eat goldenseal.

So if you have a woodlot on moist, rich soil and are willing to experiment, ginseng and goldenseal might provide an alternative cash income.



Forest Cultivation of ginseng. Credit: Eric Burkhart

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