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Growing American Ginseng in Ohio: Maintenance, Disease Control, and Pest Management

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People plant ginseng for a variety of reasons including income generation, personal use, as a hobby, or for restoration of the environment. Planting the first seeds is enjoyable, but there is nothing more rewarding than watching your plants grow and mature. In order to ensure that your growing experience is successful, you must closely monitor and regularly maintain your plantings throughout their life cycle.

Although American ginseng is a relatively hearty plant, it is susceptible to a number of disease and pest problems. In addition, ginseng's high value makes it particularly vulnerable to theft by poachers. Maintenance, disease control, pest management, and theft prevention can be much easier if you have properly established your planting on an appropriate site. More information on establishing ginseng can be found in the first three fact sheets in this series (OSU Extension Fact Sheets F-56, F-57, and F-58).

Regular Visits

Throughout the ginseng growing season (in Ohio this is typically mid-April to late April through October) it is important to frequently inspect ginseng for overall vigor and to inspect for signs of disease or pest problems. It is also essential to monitor plantings in the fall when the bright red fruit makes them particularly vulnerable to theft.



*Figure 1. Healthy, fruit-producing ginseng plant.
(Photo courtesy of Bob Beyfuss, Cornell
Cooperative Extension)*

Frequent inspections of your plantings are essential for the early detection of problems before they cause extensive damage. Some growers will take time each day to inspect their ginseng; others do it on an irregular basis in order to ensure that potential poachers can not easily determine a pattern of inspections to work around. Whether you choose to inspect your plantings on a regular or irregular basis, it is recommended that you inspect on at least a bi-weekly (preferably weekly) schedule to identify problems early.

Periodic Maintenance

Once ginseng is planted, there is relatively little maintenance needed during the first four years. Maintenance needs during this period will vary by site, and may include thinning, pruning, or removing competing vegetation to increase airflow, and removing branches or other debris.

Target spacing for wild-simulated ginseng should be 8 to 12 inches between plants at maturity (approximately 1 to 2 plants per square foot). When a seeding rate of 4 to 5 seeds per square foot is used, hand thinning is typically not necessary. Some natural thinning commonly occurs as a result of seed failing to germinate or being consumed by animals, and mortality of young seedlings. However, areas should be thinned if they become too crowded during the first four years. Since ginseng rootlets are a valuable resource, consider carefully digging and transplanting any healthy ginseng plants removed during the thinning process. In Ohio this is typically best done at the end of July after the plants have set bud.

Maintenance requirements generally increase once ginseng plantings reach their fifth year. As the plants mature, they often become more susceptible to diseases and theft. Regular inspections of plantings become more critical at this time.

Ginseng commonly achieves reproductive maturity in the fifth year and begins to produce seed. If seed is to be collected for planting the following year, expect to spend considerable time picking, depulping, and stratifying seed. Seeds may also be planted 3 inches below the soil surface, which enables them to stratify naturally.

Poaching

Since American ginseng is such a highly valued crop, the biggest threat to most wild-simulated ginseng plantings is theft.

Some growers keep secret the fact they are growing ginseng; others enlist the help of neighbors to watch for suspicious activity. It is recommended that ginseng growers invite their local county Extension educator or wildlife officer to visit their growing sites. They can then validate your operation if you ever experience a loss due to theft. Growers should also document all of the costs associated with their venture by saving receipts and keeping appropriate records. Photographing or videotaping ginseng plantings regularly is also advisable. Include landmarks such as big trees or fence

lines in your photographs to make it easier to document the location of the plantings. In some instances, it may be possible to obtain insurance coverage to protect ginseng plantings from loss due to theft.

Since ginseng berries are bright red and highly visible, most growers harvest ginseng seeds as soon as they ripen to avoid detection by poachers or feeding animals. Where poaching is a major concern, growers often harvest all of the aerial portions of the plants before ginseng harvest season begins on September 1. This makes finding ginseng roots very difficult for poachers. Although harvesting tops before they die back naturally may compromise root growth and even the medicinal properties of the roots, it may be necessary in order to reduce poaching problems.

The Ohio Department of Natural Resources (ODNR) maintains a 24-hour hotline (1-800-POACHER) to report poaching activities. This toll-free number connects to a wildlife officer who will respond to your complaint. Providing detailed information (such as license numbers, vehicle and/or person descriptions, and location) is critical to help officers investigate the crime.

Disease

Although diseases are typically more common when ginseng is grown under artificial shade or in other intensive production systems, growers of wild-simulated ginseng will likely encounter some disease problems while growing ginseng in the woods. While there are dozens of potential diseases that can infect ginseng, this fact sheet will focus on three of the more common—*Alternaria* leaf blight, damping-off, and root rot.

For more information on these and other ginseng diseases, refer to the ginseng diseases section (pages 113–125) of *Growing and Marketing Ginseng, Golden-seal and Other Woodland Medicinals* by Scott Persons and Jeanine Davis.

***Alternaria* Leaf Blight**

The most common ginseng disease in Ohio is a leaf blight caused by the fungus *Alternaria panax*. *Alternaria* thrives under warm, moist, stagnant air conditions and is fairly common in Ohio. Symptoms of *Alternaria* include dark, yellowish circles or “bull’s eyes” on the leaves or stems of ginseng plants. In severe cases, it will move from the leaves, down the stem, and possibly even into the root.



Figure 2. *Alternaria* leaf blight on ginseng foliage.
(Photo courtesy of Bob Beyfuss, Cornell
Cooperative Extension)

Young ginseng plants can and occasionally are killed by *Alternaria*. However, mature plants infected by *Alternaria* commonly respond by entering dormancy earlier and resprouting in good health the following spring. *Alternaria* often overwinters on dead plant material and reemerges the following growing season to begin its cycle again.

Damping-off

Damping-off, another fairly common ginseng disease, can be caused by a variety of fungal organisms including *Pythium*, *Phytophthora*, and *Fusarium*. Damping-off usually affects 1- to 2-year-old plants, attacking the plants near the soil surface, causing initial leaf discoloration and ultimately resulting in the collapse and death of the plant. Unlike *Alternaria*, damping-off prefers cold, moist environments and is usually seen around the time plants are emerging in early spring. Damping-off should not be a major concern if the growing site has adequate soil moisture drainage; it is more commonly a problem on poorly drained sites, on heavy clay soils, and in low-lying areas.

Root Rot

Although root rot diseases are less common in ginseng, they can inflict serious damage to your crop. Root rot, like damping-off, can be caused by a wide variety of fungal organisms including *Phytophthora*. Often the first indication of root rot disease is wilting or discoloration of foliage. Infected roots will often be discolored and show signs of deterioration. Digging the suspect plant and carefully examining the root is

the best way to confirm the presence of a root rot disease. Roots that are infected often will contain black, spongy sections or are mushy. If left untreated, root rot diseases can spread throughout a ginseng bed. Under extreme conditions, it may be necessary to dig all the infected roots before their value is completely lost.

Disease Treatments

Once a disease has been identified, depending on the disease, there are a variety of treatment methods available ranging from the removal of infected plants to the use of modern fungicides. Consult pages 113–125 of *Growing and Marketing Ginseng, Goldenseal and Other Woodland Medicinals* for various treatment strategies for specific diseases. When the treatment involves a fungicide, the importance of careful, proper application according to label directions cannot be overstressed. Not only will this minimize personal and environmental risks, but it will maximize effectiveness.

Proper selection of planting sites plays an important role in minimizing ginseng diseases. As noted above, specific diseases are often associated with specific environmental conditions (e.g. warm, moist conditions or cool, moist conditions). The common environmental condition encouraging many ginseng diseases is excessive moisture. To give ginseng the best chance of avoiding and surviving these diseases, it is crucial that a planting site with good soil drainage and adequate airflow be selected (See *Growing American Ginseng in Ohio: Selecting a Site*, Ohio State University Extension Fact Sheet F-58-13).

Again, it is important to emphasize that many of these diseases appear and inflict their damage quickly. Regular monitoring of plantings is critical to minimizing the effects of disease.

Rodents—Mice, Moles, and Voles

Rodents, such as mice, moles, and voles, are another fairly common problem for ginseng growers. These animals do damage by consuming the foliage, stems, roots, and seeds of ginseng plants. Often the first sign of damage is the presence of wilting plants as a result of feeding, but since wilting can also be a symptom of disease, it is important to closely inspect wilted plants to determine the cause of the problem. Dig up a wilted plant and inspect the root for signs of damage such as bite marks and areas that have been gnawed away. Often this will not kill the plant and may even add

some “character” to the roots. However, if the problem becomes severe, mortality can result.

There are several methods available to deal with excessive rodent damage to ginseng. Rodent populations, and therefore feeding, can often be reduced by sustained trapping or killing with a rodenticide containing bait. If a rodenticide is to be used, check with the appropriate regulatory agency for permitted chemicals and methods.

Some growers establish a barrier impenetrable to rodents around the perimeter of the planting. Barriers typically consist of metal flashing that, when installed, extend at least 12 inches above the ground and to a depth of about 12 inches. While this may be a practical solution for a small-scale grower, it often is not practical for large-scale operations. Planting goldenseal (*Hydrastis canadensis*) around the perimeter of your ginseng beds may also provide a natural deterrent to rodents.

Watch for an increase in rodent activity around the time plantings begin to produce seed, as the seed is a highly preferred food. Often rodents will stow away seed for later consumption, thus acting as ginseng planters themselves, dispersing seed throughout the forest.

Other Pests

Several other animals occasionally cause damage to ginseng plantings including white-tailed deer, rabbits, wild turkey, songbirds, insects, slugs, and snails. White-tailed deer and rabbits browse the tops of ginseng, particularly when other food sources are limited or where deer populations are high. Wild turkeys scratch in freshly seeded beds, consuming seeds and/or uprooting newly established seedlings. Some songbirds and most squirrel species also consume ginseng seed. There is still much to be learned about which animals consume ginseng seed and how they affect ginseng populations. For specific treatment options,

contact Rural Action Sustainable Forestry or your county Extension office.

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