

value. Prior to sale, the roots are cleaned (without scraping or scrubbing) and dried. The drying process involves spreading the roots on lattice or wire shelves in a heated and well ventilated room. It may take up to 6 weeks for the roots to dry, during which time they should be turned frequently. A root which is 4 inches long and 1 inch thick will weigh about an ounce, but may lose up to 70 percent of its weight during the drying process.

## Marketing Ginseng

Nearly all ginseng produced in the U.S., both cultivated and collected, is exported to Asia. In China, the wild simulated ginseng imported from America is preferred over the cultivated American ginseng, because it more closely resembles the oriental variety of wild ginseng.

The Chinese believe that wild roots, which grow slower and are harvested at an older age, absorb more curative power from the forest floor. Therefore, the value and demand for ginseng in Asian markets is directly related to the general appearance of the roots, including size, color and shape. While wild roots are dark tan, with a gnarled appearance and concentric growth rings, cultivated roots are cream colored, have few concentric growth rings and are often larger and heavier than wild roots.

### Projected Budget for Growing a 1/2 acre Wild-Stimulated Ginseng

SEED (10 lbs.)	\$750
LABOR	
PLANTING (125 HRS.)	\$1,250
MAINTENANCE (200 HRS.)	\$5,000
EQUIPMENT & MATERIALS	\$250
DRYING	\$440
TOTAL COST OF PRODUCTION	\$7,690
REVENUE (80LBS @ \$300/LB)	\$24,000

Source: Economics & Marketing of Ginseng by Robert Beyfuss.

In recent years, increased production of cultivated ginseng has flooded the market, resulting in reduced prices for this type of ginseng. However, the demand for wild simulated ginseng remains strong. Companies advertise on internet looking to purchase wild simulated ginseng, and even solicit individuals to grow it for them.

Due to the complexities of dealing with an export market, the best way for landowners to market ginseng is to work with a broker. For information about purchasers of ginseng, contact DEM/Division of Forest Environment at 647-3367.



## Conclusion

Various production methods can be used for growing ginseng ranging from intensive cultivation to simulating wild conditions. Although cost estimates for producing wild simulated ginseng are not exact, production costs are lower than for cultivated ginseng due to savings from not using fertilizers and pesticides. Yields for ginseng produced by the wild simulated method are less than 1/2 that for cultivated ginseng but this is more than offset by the higher value of the roots.

Growing ginseng requires a significant investment in time and labor, in addition to other start up costs, but has the potential to produce a valuable forest crop in about ten years. Producing ginseng could be incorporated into a landowners management plans, providing an alternative forest crop to generate revenue, reducing the likelihood land will have to be sold to pay property management expenses.

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### RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT & THE RURAL LANDS COALITION SUBCOMMITTEE PARTICIPANTS INCLUDE:

Rhode Island DEM:  
Office of Sustainable Watersheds  
Division of Forest Environment  
Division of Agriculture

Rhode Island Forest Conservators Organization  
Southern New England Forest Consortium  
USDA, Natural Resources Conservation Service

### FOR MORE INFORMATION CONTACT:

RI DEM, Division of Forest Environment (401) 637-3367 or visit our website at: [www.state.ri.us/dem/programs](http://www.state.ri.us/dem/programs)

USDA, Natural Resources Conservation Service (401) 828-1300



# Growing Ginseng Fact Sheet

EDUCATING THE PUBLIC ABOUT SUSTAINABLE LAND-BASED BUSINESSES

## INTRODUCTION

*Ginseng is an herb that has been used for medicinal purposes for centuries, especially in Asia. The use of ginseng has increased dramatically in recent years, as interest in alternative medicine has grown. It may be used in a variety of ways; as the root of the plant, in pill form, or as an ingredient in tea, honey, and lotions.*

*Ginsengs' natural range extends from Maine to Georgia and west to Iowa. Two species are native to North America, American ginseng (*Panax quinquefolius*) and dwarf ginseng (*Panax trifolius*), but only American ginseng is of significant economic interest.*

Management for wood products, such as timber and firewood, is difficult to justify on an economic basis alone due to the small size of most ownerships in Rhode Island and the long term nature of forest management. Managing for alternative forest products, such as ginseng, has the potential to produce supplemental income, reducing the likelihood the land will have to be sold to pay property expenses.

Ginseng is a fleshy rooted, herbaceous plant that grows naturally in shady, well drained forest sites. The root is very valuable for medicinal uses, especially in Asia, so wild plants have been collected even before they can reproduce, decimating populations throughout its native range. Although it has great potential as an alternative forest product, it's not a crop that can be grown to turn a quick profit; it is slow growing and grows well only under specific soil conditions. Ginseng may however provide an alternative forest crop that can be produced in conjunction with other land management objectives.

## Ginseng

Native ginseng has been decimated throughout its native range where high prices have led to collection of plants before they have had a chance to produce seed. Therefore, ginseng is now listed as an endangered plant throughout much of its natural range; and wild plants are officially protected by law. The U.S. Fish and Wildlife Service lists ginseng as a plant that needs protection; thus, exports are regulated. Ginseng must be certified whether it is wild or cultivated. States must adopt a conservation program to allow harvest of wild roots.



## Growing Ginseng

There are three basic ways to cultivate ginseng. It can be grown in fields with artificial shade, cultivated in the forest or grown under "wild simulated" conditions.

Field grown ginseng produces the highest yields in the shortest time, but requires a significant investment of labor and materials. This method is similar to growing an agricultural crop. The price received for field grown ginseng is lower than forest grown due to the lightness and smoothness of the roots, which don't resemble wild ginseng. Forest grown ginseng is grown under a forest canopy. The level of management varies and can involve clearing brush or even creating raised planting beds.



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Usually the planting sites are cultivated and weeded, and sometimes soil amendments are added. Roots grown using this method are more valuable than those using more intensive methods, but are not as valuable as wild roots or those produced using the least labor intensive *wild simulated* method.

Growing *wild simulated* ginseng approximates the conditions under which ginseng grows naturally. This technique, which involves minimal site preparation, seed scattering and mulching, and is most appropriate for forestland that is managed for multiple use purposes. Although yields are lower than

more intensively cultivated ginseng, the price received is close to that received for authentic wild ginseng.

## Site Selection

The most important step in growing ginseng is choosing an appropriate site, since the plants are very sensitive and only grow well under favorable soil conditions.

Ginseng grows in rich, moist, and well-aerated woodland soil, and is usually found in the understory of hardwood forests. The soil should be loamy and high in organic matter. The plants prefer cool, moist conditions and partial shade, so the lower portions of north and east facing slopes provide ideal growing sites.

Ginseng is usually found growing in association with other plants that require similar soil conditions, like maidenhair fern, blue cohosh, may apple, trillium and wild sassa-parilla. Red oak, white ash and sugar maple are tree species typically found growing with ginseng. If these "indicator species" are present, favorable conditions for growing ginseng may exist.

## Site Preparation

The goal of preparing the site is to create an area that will be easy to plant and maintain.

Ginseng needs partial shade and free air circulation to grow vigorously and withstand disease. The forest should be thinned, so that there is about 70 percent shade. Sunlight must reach the forest floor to promote the growth of the ginseng, but there must be enough shade to discourage small trees and shrubs from becoming established.

Hand thinning can be used to prepare the site. All vegetation that might compete with ginseng, such as small trees and other woody plants, must be removed.

## Indicator Plants Usually Found In Areas Suitable for Growing Ginseng



BANEBERRY



BLUE COHOSH



JACK IN THE PULPIT



MAIDENHAIR FERN

## Planting

Growing "wild simulated" ginseng involves raking back the forest litter and broadcasting seed before planting seedlings or roots.

Seeds can be planted from late summer until the ground freezes. Sometimes seed is planted in the spring (before April), in order to reduce the amount eaten by rodents. Seeds should be planted 1/2 of an inch to 1 inch deep and 6 to 12 inches apart. Seventy-five to 100 pounds of seed are needed per acre, and the area should be mulched with 2 to 3 inches of leaf mold.

The use of seed has many advantages. It is the cheapest method, presents less of a risk that disease will be introduced into the crop, and leads to the development of plants that garner the high prices which are typical for wild ginseng.

There are several disadvantages to using this method. Seeds can only be cultivated under the most ideal soil conditions and a low germination rate and tricky dormancy means that it may require two years until the seed is mature and ready to germinate (this problem can be avoided by purchasing stratified seed). Finally, it may take 6 to 10 years to produce a crop.

Seedlings can be planted between October and April, but fall is optimum. Planting 1 to 3 year old transplants will reduce the wait until the ginseng can be harvested by 2 to 3 years, and may yield a crop of seed in 1 to 3 years. The seedlings should be planted 8 inches apart and mulched with leaf mold to prevent frost heaving.

Roots are planted in the fall, after the tops of the plants have begun to die. They should be planted 3/4 of an inch to 1 inch deep and mulched with 1 or 2 inches of leaves from the forest floor.

## Pests

In the wild, ginseng is not usually affected by disease, but cultivation creates conditions that favor outbreaks. Diseases caused by

fungus, including root rot and leaf diseases, are common. The best way to reduce the impacts of disease is to promote healthy plants through careful site selection, adequate drainage and good air circulation.

Squirrel's, mice, turkeys and deer all eat ginseng, but this problem can be controlled by setting traps or using repellents.

In some areas, theft may be a concern. This possibility should be taken into consideration by selecting planting sites that are visible from residences or easy to patrol.

In most cases, the use of fertilizers is not desirable since it changes the appearance of the root, making it less valuable, and may lower the plants resistance to disease. It is also not recommended to rotate two crops of ginseng in the same location, since the soil will be depleted of nutrients and can harbor diseases carried by the previous crop.

As the ginseng plants grow, competition between the plants increases and some die due to competition. This is a natural occurrence that depends on growing conditions and will vary between sites. Although the growth and yield cannot be predicted with any certainty, it's a safe bet only a fraction of the plants will grow to maturity.

## Harvesting Ginseng

For ginseng to reach a harvestable size, it is necessary to wait 5 to 12 years when planted from seed, and 2 to 4 years if started from transplants.

Mature plants will be about 1 foot tall and have 3 or 4 compound leaves. The roots differ with the maturity of the plant, but are generally about 1 inch thick and range from 2 to 5 inches in length. The roots may be forked and have circular ridges, both of which are characteristics that make the ginseng more valuable.

Roots are harvested in the fall, after the plant tops have died. They should be dug carefully, since damage may affect their

## Visual Site Assessment and Grading Criteria for Potential Woodland Ginseng Growing Operations

BOB BEYFUSS  
CORNELL COOPERATIVE EXTENSION

### DOMINANT TREE SPECIES

1. Sugar maple +10
2. White ash +10
3. Mixed Hardwoods (beech, cherry, red maple, white ash, red oak) +5
4. Mixed Hardwoods above plus some hemlock and white pine +5
5. Red or white oak +3
6. Ironwood, birch, hickory +1
7. Il softwoods +0

### EXPOSURE (ORIENTATION)

1. North, east, or northeast facing +5
2. South, southeast, northwest +2
3. West, southwest +0

### SLOPE

1. 10 to 20 % +4
2. Level +3
3. 20 to 40 % slope +0

### SOIL PHYSICAL CHARACTERISTICS

1. Few stones, 75% tillable +10
2. Moderate small stones, 50% tillable +8
3. Very stony, 25-50% tillable +5
4. Large rock outcropping, boulders less than 25% tillable +3
5. Soil too rocky to till +0

### UNDERSTORY PLANTS

1. Reproducing population of wild

- ginseng +15
2. Sparse wild ginseng +10
3. Maidenhair fern, rattlesnake fern +8
4. Christmas fern, blue cohosh, baneberry +6
5. Jack in a pulpit, other ferns, trillium, bloodroot, foamflower, jewelweed, mayapple, elderberry +5
6. Wild sarsaparilla, Virginia creeper, ground nut, lady's slipper +3
7. Club moss, princess pine, bunchberry +0
8. Woody shrubs (spice bush, witch hazel, viburnum, dogwoods) +0

### SECURITY

1. Very close to occupied, full time residence of potential grower, within easy view of residence +10
2. Forested land less than 300 to 500 yards from growers residence, patrolled regularly +8
3. Remote woodlot within 1/4 mile of residence, patrolled regularly +3

Grand Total (A through F)

### RESULTS

- 40 to 59. Excellent site, great potential.
- 30 to 40. Good site, do complete soil analysis.
- 20 to 30. Fair site, test soil.
- Less than 20. Poor site, look elsewhere.

