

Agroforestry Forest Farming: Medicinal Plants

Deborah B. Hill, Department of Forestry

People have harvested and processed forest plants for medicinal purposes since the beginning of recorded history. One of the great dangers of losing the Amazon jungle is that we keep discovering highly valuable medicinal plants there, and there's no telling what we'd miss out on if it were gone.

Our native temperate forests are also filled with useful plants. Ginseng (*Panax quinquefolium*) is perhaps the one best known in Kentucky because it is easily the most commercially valuable. However, if you read health supplement labels in all the “big box” stores or other similar locations, you will find goldenseal (*Hydrastis canadensis*), blue cohosh (*Caulophyllum thalictroides*), black cohosh (*Actaea racemosa*), bloodroot (*Sanguinaria canadensis*), wild ginger (*Asarum canadense*), slippery elm (*Ulmus rubra*), witch-hazel (*Hamamelis virginiana*), mayapple (*Podophyllum peltatum*), and many other forest plant-derived substances. There are established markets for these plants, although not as obvious as corn, soybean, or cattle markets.

Annual sales of medicinal plants are now about \$60 billion worldwide. Some national organizations purchase medicinal plants, as well as local brokers scattered across Kentucky, many in the eastern part of the state. Since these “crops” are new and different, the grower needs to find out *when* and *how* to harvest the various useful parts of these plants. Most of them need at least minimal processing—drying, for example—and need to be packed and shipped according to particular specifications. Contact buyers *before* harvesting to see what you need to do to create a marketable product from the raw material that you have harvested.

Identify Native Plants

Farmers and woodland owners would not start growing a new crop without doing some homework first. Your approach to growing medicinal plants should be no different. Take the time to walk through the forest, especially in the springtime, and identify what plants are growing on the ground. Many medicinals grow



together in the same area, so if you see a goldenseal plant, you may well see a ginseng plant, mayapple, or wild ginger. Most of them also will more likely be found on north- or east-facing slopes, where the microclimate is cooler and moister. They like shade—often close to 90 percent shade—and moist but well-drained areas. They are therefore found in greater abundance on the mid-slope or base of a slope than the top. Some of them like to be near certain tree species, as the association is beneficial to them. Ginseng, for example, grows well under dense shade from tree species such as tulip-poplar or black walnut. Ginseng also does well under sugar maple trees, which supply calcium necessary to ginseng.

Many medicinal plants are perennials and will continue to appear on an annual basis if parts of the roots are left behind when harvesting or when—typically with ginseng—the fruits or berries are scattered in the area when the rest of the plant is harvested. Many of them also produce their valuable part or parts each year, although goldenseal, one of the more valuable species, takes three to four years to develop a marketable fibrous root system.

In addition to identifying the herbaceous plants (the ones growing close to the ground), learn to identify the trees and shrubs in the woods, and take soil samples to identify soil types and pH (see your county Cooperative Extension office for help with this). A pH of 6 to 7 is desirable for many of the common medicinal plants.

Identify Markets

The second step after identifying what is growing naturally in the woods is to learn about the market for the plant or plants you want to grow. It is wise to determine the value of the proposed crop, as some are worth more than others, and if you are planning to farm these plants, their value should provide a reasonable return on investment.

Medicinal plants can be grown for raw products such as the roots, stems, bark, or leaves (or combinations of these from the same kind of plant). Some can be marketed fresh, but most are sold dried. They are bulky and need proper storage and packaging. Getting your product to market will involve shipping costs, which will reduce the profit margin. Adding value or product packaging, such as making tinctures, lotions, steam-distilled aromatic oils, and soaps could bring higher prices and greater profit margins to the grower/producer.

Scouting your woodland will help you decide what grows best among your forest trees and whether you want to grow them as *wild-simulated* or *forest farmed*. The term wild-simulated is most often used to describe the method for farming ginseng. Ginseng, which has a taproot, takes many years to develop a root size that is valuable. Wild ginseng is the most valuable form of this plant, bringing \$300 or more per pound of dried root. Ginseng can be and is grown like any other shade-grown crop, under shade cloth in raised beds, but the ginseng that comes from that kind of management is worth only \$20 to \$50 per pound. Forest-farmed ginseng is usually in raised beds formed in the forest, under a fairly dense overstory canopy. The beds are formed from materials on the forest floor, humus and leaf litter, and the ginseng is sown and managed there. Wild-simulated production, on the other hand, involves minimal disturbance of the forest floor and no “bed” structure for the growing plants. Wild ginseng has its greatest value when it has been grown undisturbed for 10 or more years; wild-simulated is almost impossible to distinguish from wild and takes about as long to develop. Commercially produced ginseng can form marketable roots in a shorter period of time but for far less economic return.

Ginseng’s monetary value is very attractive to prospective growers. However, since it takes so long to develop optimally valuable roots, it is difficult to secure a crop for that long, and the perennial problem with ginseng

production is that the crop is poached before the owner can get it dug for market. Since several of the other species can produce a reasonable value in a shorter period of time, it makes more sense to look elsewhere.

One success story is a Georgia farmer who has developed a wide range of products using organic goldenseal and has also developed a growers cooperative for the production of organic goldenseal. He is able to increase his profits by offering not only seed and roots for planting but also lotions, creams, and soaps containing the active ingredient of this valuable plant. Organic production of medicinal plants protects against contamination and brings premium prices.

So check out your forest plants, do your homework for what might work on your land, and enjoy the profits!

Additional Information

Persons, W. Scott, and Jeanine M. Davis. 2008. *Growing and Marketing Ginseng, Goldenseal and Other Woodland Medicinals*. Updated edition.

American Botanical Council:
<http://www.herbalgram.org>

American Herbal Products Association (AHPA):
<http://www.ahpa.org>

Aveda Corporation:
<http://www.aveda.com>

Botanical Enterprises Inc.:
<http://www.bei-botanicals.com>

Botanical Liaisons:
<http://www.botanicalliaisons.com>

Elk Mountain Herbs:
<http://www.elkmountainherbs.com>

Frontier Herbs:
<http://www.frontiercoop.com>

Agroforestry in Kentucky

FOR-111 Alley Cropping

FOR-112 Riparian Buffer Strips

FOR-113 Silvopasture

FOR-114 Windbreaks

FOR-115 Forest Farming

<http://dept.ca.uky.edu/agc/pub-dept.asp?dept=Forestry>