

Ginseng Research Projects

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Wild American Ginseng (*Panax quinquefolium*) is a native American herb with a range extending from Southern Quebec to Northern Georgia and from the East Coast to the Midwest. Sugar maple and ginseng co-exist in many hardwood forests as they both require high levels of calcium in the soil.

Understory ginseng plants, particularly herbaceous perennials growing beneath the sugar maples in the Uihlein forest, are the same species that are often associated with wild ginseng populations growing elsewhere. In April of 1998 a soil sample was collected from the Uihlein sugar bush and analyzed for nutrient content at Cornell's Soil Testing Laboratory. The soil appeared to have very similar characteristics as soils in which healthy populations of wild ginseng are found in New York State.



Ginseng

Although many regions of New York have a long anecdotal history of wild ginseng growing within the region, the area near Lake Placid does not seem to share this history based on conversations with long time residents. In 1998, a ginseng research project was started at the Uihlein Field Station to determine if ginseng could be cultivated in a sugar maple forest in the Lake Placid region.

Why Ginseng?

Ginseng is a very popular food supplement, and is in high demand particularly in China and surrounding countries. Raising ginseng is something that can be very profitable in combination with maple sugaring. It requires patience, hard work, some capital investment and is by no means guaranteed income. Age, appearance, and method of cultivation determine the price received by the grower. Ginseng is sorted into 40 different grades based on root shape, color, taste, and age. The current estimated market price for field cultivated ginseng can be between \$12 to \$20 per dry pound. Woods cultivated ginseng may bring between \$25 and \$100 per dry pound. Wild simulated ginseng may bring between \$150 and \$250 per dry pound. Finally, wild ginseng may bring between \$250 and \$600 per pound or higher for the more unusual rare root. The higher prices are reserved for older plants (over ~25 years).

The Research

During the summer of 1998 six test plots approximately 6 feet wide by 33 feet long were prepared within the Uihlein sugar bush by removing the surface vegetation and rototilling the soil to a depth of six inches. Soil samples were collected and analyzed from each of the six plots. Calcium levels varied substantially from plot to plot. Calcium is a crucial element for healthy ginseng growth. Calcium levels ranged from 430 pounds per acre to 1,710 pounds per acre. Phosphorous, potassium, and Magnesium levels were not significantly different from plot to plot.

Ginseng plot

Each of the six plots was divided into three sections. Each section received two ounces (approximately 700 seeds) of ginseng seed from a commercial source, two ounces of seed from a different commercial source, and approximately 50 one-year-old ginseng rootlets. With the exception of the control, a unique amount of gypsum (calcium sulfate) was added to each of the plots.

Ginseng seed germination and growth has been monitored for the past three years. In the fall of 2001 a workshop was held at the Uihlein Field Station for clients and cooperative extension agents to discuss what makes a good ginseng planting. The results of growth in the six plots after three years varied from poor to excellent. The factors that influenced the success of the plots were compared to a Visual Site Assessment and Grading Criteria form to be used with soil analysis data to help further determine the sites with best potential.

In the October of 2001 a second study was initiated to determine under what alternate dominant tree species ginseng would grow best. Many indications are that ginseng will grow best under sugar maple. However, farmers and growers that want to grow ginseng may lack the sugar maple resource. Five trees of four species, sugar maple, beech, yellow birch, and hop hornbeam, were chosen. Soil samples were taken from around each tree to determine soil type and nutrient qualities and saplings of species other than the sample were removed. Fifty 3 and 4 year old rootlets were planted in one-foot spacings on two, four, and six-foot radii under the drip line of the sample trees. Survival and growth will be monitored over the next four years.

Also situated at the Uihlein Field Station Sugarhouse is a demonstration plot of ginseng grown from seed and goldenseal, another rare herbaceous perennial that has income potential. A demonstration of gourmet mushrooms will also be established this spring. These demonstration plots will be used to show producers and visitors some sources of alternative income available in their forests.

A repository of ginseng from six southern states was also established to observe the ability of the transplants to survive a northern climate and to provide germplasm and genetic material for future projects.

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