



Woodland Botanical Crop Security

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The concept of growing woodland medicinal plants in the forest is not a new one. Anecdotal evidence indicates that landowners have been quietly growing ginseng, for example, in West Virginia for the last 50 years or more. Substantial research and fieldwork over the past two decades have produced a solid body of knowledge to guide current and potential producers in their quest to bring to market medicinal herbs of top quality and high price. This is particularly the case with the most widely recognized and valuable of the woodland botanicals— American ginseng. Guidance is available for virtually any question regarding the production and marketing of wild-simulated or woods-grown ginseng. But in the midst of this wealth of information and market potential, one thorny issue continues to rear its troublesome head— crop security.

The issue of crop security in relation to ginseng production typically elicits comments along the lines of “How do I keep those thieving scoundrels from stealing my patch?” Although this question is central to the problem, deeper reflection leads to a broader view of what woodland crop security encompasses. The point, after all, is not to see how much “seng” can be planted, but rather how much can be successfully brought into the marketplace. No matter what the agent of destruction, be it disease, insects, rodents, birds, deer, or humans, a plant removed from production is a plant taken from the potential market.

Security must be viewed as a larger idea tied to the concept of maximum valuation. In other words, the grower’s goal should be to get the highest financial return for a given unit of input. For this to become reality, crop security must be an element of planning from the beginning. Even though most wooded sites in West Virginia of more than a few acres will have at least some high-quality ginseng habitat, there will probably be other areas of the

woodland that are better suited to other market-worthy crops such as goldenseal, black cohosh, or bloodroot. It may be that some of the best sites, as far as soil, water, shade, and indicator plants are concerned, have the inherent flaw of being located too near a highway, utility access road, or neighbor’s house to be sensible places to plant the highest value crops. In the case of ginseng, the desired market form of the plant must be taken into consideration. A scattered distribution of roots destined for the mature root market will be handled differently from producing young rootlets for planting stock or dense, fenced-in stands destined for seed production. A different format altogether would be potted ginseng plants for landscaping, land regeneration, or personal consumption.

A general rule of thumb would be that the wild-simulated technique of ginseng production can forestall many problems. This approach, which relies heavily on site selection, indicator plants, no-tillage, a diversity of species growing in sustainable mini-ecosystems, and wide initial seed spacing, generally creates planting of substantial natural resiliency. Wild-simulated beds are far less susceptible to fungus infection and rodent damage and are less tempting to deer predation.

Of course, less-optimal sites or different market goals may dictate a more conventional approach to growing methods. These ideas assume that the landowner is in the position of picking and choosing sites, but on occasion many of the decisions are made for him or her. Restricted land availability and less-attractive site indicators do not preclude production, but they do carry additional burdens for growing and security.

So far we have considered what may be considered passive security measures—those that are inherent in the structure of the production planning.

As plantings age, the grower will at some point be confronted with predation of some sort and will then be forced to take a more active stance. A certain percentage of mortality is to be expected. The discussion, after all, concerns living plants with long life spans. Some loss is natural and can be factored in. But left unchecked, some types of crop predation can quickly develop into totally unacceptable destroyers of a valuable cash crop.

Fungus diseases are common in shade-grown, monoculture ginseng plantations. Considerable research has been conducted on control measures in Ontario and Wisconsin where this technique is widespread. Wild-simulated plantings are far less likely to suffer from these infections. Close spacing of plants and soil tillage frequently increase the chances of this problem. Few synthetic fungicides are certified for woodland use in Appalachia, and great caution is urged in their application. Bordeaux mixture, which is widely used in China as an organic fungicide, is a possibility for those desiring both organic status and a more aggressive approach. Research has just begun on the use of designed compost extracts as a more benign solution. Growers must assess their own situation and make informed decisions.

Rodents, primarily voles, meadow mice, and chipmunks, can be devastating given the right combination of factors. Although tilled soil is more conducive to these critters becoming a problem, the natural vagaries of population extremes can bring rodents into the most carefully planned wild-simulated stands. The summer of 2001 saw a huge explosion of rodent numbers in West Virginia, for example, and thousands of dollars' worth of high-quality ginseng become mouse chow. The use of rodenticides containing zinc phosphide proved effective, but careful monitoring is always called for because damage can occur very quickly. Another approach is to encourage the growth of natural predators such as owls, hawks and cats.

Turkeys can, on occasion, be a serious nuisance when they eat newly planted seeds or simply scratch in freshly disturbed soils for other food sources. On rare occasions, damage may be severe. Avoiding planting in areas with high turkey populations is effective. Allowing hunting for turkey in planted areas may also discourage such attacks. One West Vir-

ginia grower has had success with tying large black plastic garbage bags in trees and bushes around his plants on the theory that the unnatural shape and rustling noise caused by the slightest breeze unnerve the birds causing them to move to quieter neighborhoods.

As deer populations throughout West Virginia expand greatly so does their effect on the environment at large. Vehicle accidents, orchard destruction, and garden and truck crop damage are only the most widely known examples of the negative impacts of uncontrolled whitetail numbers. Some woodlands have even experienced substantial loss of natural regeneration of young trees, resulting in many acres with virtually no young tree seedlings. The results of this depredation will be seen for many years. It is not surprising that ginseng also has suffered. Particularly susceptible are closely spaced, monoculture plantings where deer are known to graze the tops of hundreds of plants in short order. Although older stands suffer little long-term damage from this activity, the effect on first-year seedlings without adequate root growth may be terminal. Wild-simulated plantings with wide spacing and many small plots, as opposed to a few large plots, are less prone to severe damage. Deer do not eat ginseng preferentially but will consume it when it is convenient. In older plants the damage tends to occur later in the summer when most root growth has already taken place, although the tops and seeds, both market worthy are, of course, lost. Avoiding areas having obvious deer travel is logical. The use of single-strand, electrified fence at knee height powered by solar chargers has proven effective in sites where the fencing is maintained to provide uninterrupted current flow. The genuine value of hunting as a control measure is widely debated. Some growers feel that herd size reduction is a meaningful approach, but others postulate that more animals simply move in from adjoining properties. Wildlife control officials are increasingly willing to issue nuisance animal control permits in such cases but this is a decision that should not be made lightly.



Theft by humans is always a topic of discussion among growers. The true economic impact of such larcenous behavior is difficult, if not impossible, to assess, but such activity can be highly discouraging and is a prime factor in the decision of many woodland owners not to attempt ginseng production. Andy Hawkins at Virginia State calls them “low-life rogues,” but most growers use language that is far less printable. There are many opinions on how to mitigate this danger. Widely spaced plantings on many small plots may be beneficial. Fencing and posting of land is widely supported. The use of motion detectors linked to cameras and/or noise generators has been used in New York. Implantation of microchips for post-theft root identification has been proposed but is not a deterrent to theft. No topic separates growers like the question of confidentiality. Some are proponents of total confidentiality, not even telling family members where their patches are located. Others vehemently state their opinion that being totally open and upfront about their activities provides a greater sense of security. Indeed what is being produced is a legal, valuable, and medically significant crop, and no taint of shame or embarrassment should ever be connected with it.

Visiting plantings frequently and at irregular intervals makes sense as a general control measure. Working in conjunction with neighbors to have adjoining blocks of land all planted in series will encourage a condition of communal watchfulness as families work together to safeguard each other.

Alerting the county sheriff or other law enforcement officials has been suggested frequently although the beneficial effect this may have will vary greatly from place to place. Some growers plant in areas that they believe will not attract poachers. These areas can simply be less optimal by nature of site selection, less accessible, or simply unexpected: fenced areas in the middle of a bull pasture, the verges of cemeteries or housing developments, and others.

It must be recognized that each site is different and must be evaluated on its own merits and individual characteristics. Ginseng growing is an art, not a pure science although much good science is involved. Working in partnership with natural processes rather than trying to dominate them is always a sound approach. More and more growers are organizing into groups for their common good, and this inevitably results in a sharing of knowledge and resources. Two components of woodland crop security have been discussed—the passive and the active. A third has been mentioned at times—the religious. In other words, plant wherever and however you wish and pray for the best. It is probably safe to assume that whatever higher power may be involved probably would appreciate whatever careful and rational consideration we can bring as our share of the equation.