

Forest-grown ginseng verification programme addresses illegal trade

American Ginseng *Panax quinquefolius* has been heavily traded since the 18th century (Robbins, 2003). It was listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 1975 making international trade in this species subject to specific permitting requirements. Despite regulation at an international level, wild populations of American Ginseng are still rapidly diminishing (Rock *et al.*, 2012), with 95% of ginseng roots harvested in the USA and Canada exported to Hong Kong and East Asia (Sinclair, 2005, p.71). Between 1990 and 2011, in 19 eastern states, CITES export permits were issued for between 20 400 and 72 000 kg of wild ginseng roots by the US Fish and Wildlife Service (Burkhart *et al.*, 2012). However, little is known about the exact provenance of the ginseng being traded, and whether it was harvested on private, state, or federal property, and harvested legally.

The permitting process for ginseng harvesting in the USA is complex and varies from state to state, with different harvesting seasons and implementation of regulations. Ginseng harvesting occurs on private and federal lands. Legal harvesting means that ginseng plants must be at least five years old, come from land where it is legally allowed (e.g. from a National Forest with a permit or from private property, with permission), and collected in the designated season. Rock *et al.* (2012) reported large increases in ginseng harvesting from federal properties, revealing alarming rates of illegal harvest on these lands, especially in National Parks, where all harvesting is illegal. Due to the volumes being collected both legally and illegally in the past five years, ginseng harvest permits have been significantly reduced or totally shut down in most state and National Forests (Forest Service, 2013).

In addition to wild-harvested ginseng, efforts have been put into both the artificial propagation and “forest grown” approaches to relieve the pressure from wild populations. “Forest grown” ginseng uses “non-timber forest product management systems (e.g. woods-cultivated, woods-grown, virtually wild, wild-simulated) in which intentional husbandry practices are used to produce a non-timber forest product in a forest environment” (PCO, 2014, p.8). This practice is in contrast with artificial propagation, in which ginseng is grown under shade cloth and produces a different shaped root and market value. Ginseng from all sources is sold in the international marketplace. Currently CITES only recognizes wild and artificially propagated ginseng, and has no way of tracking what ginseng in trade is truly “wild” versus “forest grown”. So the questions remain, where is the “wild” ginseng coming from, is it truly wild or “forest grown”, is the harvesting sustainable, and how do we know if it has been legally harvested?

The concept of developing an eco-label for ginseng is not new. In 2001, TRAFFIC conducted a study to evaluate the possibility of an eco-labelling programme for wild American Ginseng (Robbins, 2003), which would allow the buyer of ginseng to know that it had been harvested legally and sustainably. Several factors were found necessary for a successful labelling scheme: that it be voluntary; participatory, with ginseng harvesters involved in the decision-making process; and involve information

exchange between older and younger harvesters (Robbins, 2003). The FairWild Standard (FairWild Foundation, 2010) and certification scheme has since been developed to verify sustainable wild-harvesting and equitable trade practices, but it has not yet been used for ginseng.

Encouraging conservation through cultivation

To support the Forest Grown Verification Program, United Plant Savers (UpS) has partnered with Pennsylvania Certified Organic (PCO) in the development and piloting of the PCO Forest Grown Verification Program, primarily targeting the US domestic market, but with plans to expand to the international market. UpS is an organization based in the USA with a mission “to protect native medicinal plants of the United States and Canada and their native habitat while ensuring an abundant renewable supply of medicinal plants for generations to come” (UpS, 2015a).

UpS held a “Ginseng Summit” for stakeholders in 2014 (Board, 2014), which laid the foundation for a subsequent workshop, “Forest Botanicals: Working Together to Build a New Supply Chain,” held in November 2015. The workshop developed a framework for connecting domestic buyers to those producers who are interested in joining the new PCO Forest Grown Verification Program, which encourages conservation through cultivation as a solution of sustainability, quality and ethics (PCO, 2016). The programme and ginseng standards were the result of collaboration between Eric Burkhart (Pennsylvania State University) and stakeholders including growers/harvesters, industry, consumers, and federal and state agencies (Seitz, 2011).

The steps in the verification process are shown in Fig. 1. The term verification was used instead of certification, as requested by the US Fish and Wildlife Service, in order to minimize confusion since ginseng traders are required by CITES to have roots certified for legal export by state or tribal officials.

The establishment of the PCO Program for Forest Grown products that are sustainably and legally produced and harvested is a viable solution to supporting forest farmers and educating consumers. The Forest Grown Verification Program can address the issue of ginseng roots’ origin for consumers who want to choose a source that is sustainable and ethical (Rubinkam, 2015). There is a required annual enrolment and inspection in the year of harvest and development of a property management plan (PCO, 2014). The programme currently focuses on American Ginseng products from private land, and PCO is working to add several other forest products to the list including Black Cohosh *Actaea racemosa*, Goldenseal *Hydrastis canadensis*, Ramps *Allium tricoccum*, Slippery Elm *Ulmus rubra*, and other species currently in demand.

Mountain Rose Herbs of Eugene, Oregon, is the first company to become a verified distributor of Forest Grown ginseng root, leaf and tincture (Mountain Rose Herbs, 2016). Recently, ginseng leaf has been shown to have significant ginsenoside concentrations and is far more sustainable to harvest than roots (Searels *et al.*, 2013). In addition, the USDA awarded a three-year grant to support the Appalachian Beginning Forest Farmer Program to Virginia Polytechnic Institute and State

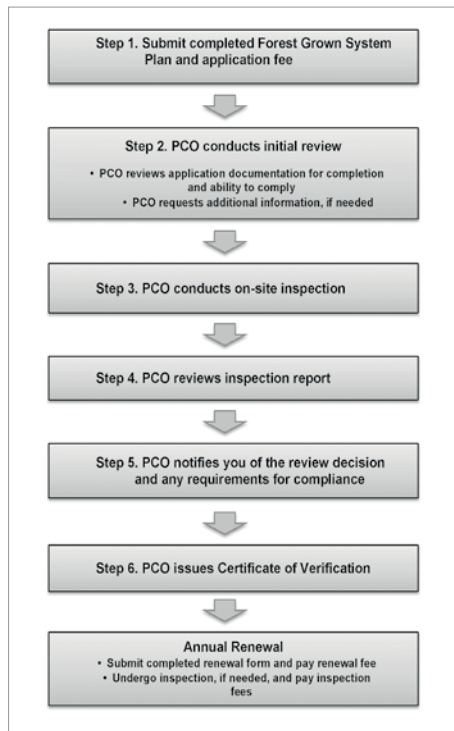


Fig. 1. Steps required to be eligible for a Certificate of Verification.

University (Virginia Tech), which will provide technical training to farmers wanting to grow forest botanicals. UpS is one of six programme partners, who are a mix of organizations, agricultural extensions, and university affiliates.

Getting more producers on board is the main focus of UpS and PCO, which have a collaborative programme designed to incentivize verification by reducing the costs to producers. The Forest Grown Cost Share programme is a joint effort to offset verification fees (UpS pays the cost of the application fee) for PCO Verified Forest Grown production operations and then only has to cover the cost of the inspector (UpS, 2015b). The programme is very similar to the organic certification process and allows the producer also to be certified organic in the same inspection, if they so choose.

Sustainable harvesting of wild-grown medicinal plants is becoming a major objective to reduce the threat to forest plant biodiversity. Wild ecologies can be fragile, and given the demand for medicinal plants, UpS supports efforts to verify the conscientious production and harvest of wild-grown products, including schemes such as the FairWild programme for sustainable harvest. Expansion of the Forest Grown programme to other species can provide critical third-party verified documentation on amounts of ginseng being “forest grown”, can improve understanding of where ginseng is being sourced, and can promote conservation of wild populations and economic value of forest lands. This programme will complement CITES by providing important insight into how much ginseng is being “forest grown” and where it is sourced. While the focus of the Forest Grown programme has been on the US domestic market, further research and sharing of experiences can address the sustainability of the international trade in American Ginseng.

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