



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington, D.C. 20240

September 9, 2005

To: Chief, Division of Management Authority

From: Chief, Branch of Consultation and Monitoring, Division of Scientific Authority
/s/ Javier Alvarez

Subject: CITES permit applications for wild-simulated and woodsgrown American ginseng
harvested in 2005

This document constitutes our finding on the export of specimens of wild-simulated and woodsgrown American ginseng, *Panax quinquefolius*, harvested in 2005.

Please, be advised that, based on our analysis of available information, we find that the export of wild-simulated and woodsgrown American ginseng roots of **5 years of age or older** (i.e., with four or more bud-scale scars on the rhizome neck) harvested during the 2005 season in the States listed below will not be detrimental to the survival of the species in the wild provided that the roots were certified by the State of origin. The following States are covered in this finding: Alabama, Arkansas, Georgia, Idaho, Illinois, Indiana, Iowa, Kentucky, Maine, Maryland, Michigan, Minnesota, Missouri, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Tennessee, Vermont, Virginia, Washington, West Virginia, and Wisconsin.

Individual applications from States not listed above or that fail to meet the criteria outlined above should be referred to Division of Scientific Authority (DSA) for further review.

BASIS FOR ADVICE

1. To ensure that American ginseng (hereafter referred to as “ginseng”) remains viable throughout its range in the United States and to determine whether the export of ginseng will not be detrimental to the survival of the species in the wild, the DSA annually reviews available information from various sources (other Federal and State agencies, industry and associations, non-governmental organizations, and researchers) on the status and biology of the species.
2. Ginseng is a slow-growing, long-lived herbaceous perennial of the Araliaceae family. The species is endemic to eastern North America, occurring from southern Canada (Ontario and Quebec), west to South Dakota and Oklahoma, and south to Georgia (Small and Catling 1999; NatureServe 2005). Although ginseng has a large geographic range, it occupies a narrow ecological niche, resulting in sparsely distributed populations across extensive areas (Lewis and Zenger 1983; Charron and Gagnon 1991; McGraw et al. 2003).

3. There are several agroforestry production systems (e.g., wild-simulated, woodsgrown, and woods-cultivated) that are commonly used in the United States to commercially produce ginseng. These types of growing methods for ginseng production have steadily increased in the last decade. However, many States do not recognize these alternative methods in their respective regulations, and therefore, annually report the harvested amounts of wild-simulated and woodsgrown roots to the Division of Management Authority as “wild.” A few States do report woodsgrown roots as artificially propagated. Accurate and current data on the amount of ginseng produced using alternative production methods are lacking.
4. According to a report prepared by the North Carolina Consortium on Natural Medicinal Products for North Carolina State University, approximately 16,000 pounds of wild simulated roots and 80,000 pounds of woods cultivated roots were harvested in 2001 (www.naturalmedicinesofnc.org. Accessed June 23, 2005). In 2000, an informal survey conducted in the 19 approved States for the export of wild ginseng estimated that approximately 500 acres of woods-cultivated ginseng and approximately 1,300 acres of wild-simulated ginseng were being grown (S. Persons, pers. comm. 2005). However, because growers are known to be secretive due to fear of having their ginseng poached, it is believed that there may be more acres in production than what has previously been reported (URL: <http://www.ext.vt.edu/pubs/forestry/354-312/354-312.html>. Accessed August 9, 2005).
5. With the exception of field-cultivated ginseng, consistent terminology for different growing methods used are not universally applied, and, as previously stated, not all States report ginseng grown using such methods (e.g., wild-simulated and woodsgrown). Therefore, with the exception of field-cultivated ginseng, we are unable to categorically determine that any of these alternative methods would qualify as artificial propagation according to Resolution Conf. 11.11 (Rev. CoP13) of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES; at URL: <http://www.cites.org/eng/res/11/11-11R13.shtml>). Without clarification from individual States, we currently consider ginseng grown using these alternative methods to be wild when they are from the States covered by this finding.
6. The two most popular growing methods in a forested environment are wild-simulated and woodsgrown. We have reviewed available information on these methods from various sources, including State Cooperative Extension programs, universities, non-profit organizations, and public literature. Although we recognize that there may be variation in their application, the following information is a brief summary of these two alternative growing methods.

Wild-simulated ginseng

7. According to one source “Asian dealers now want only wild or "wild-simulated" U.S. ginseng, easily identified by an experienced botanicals dealer” (URL: <http://attra.ncat.org/attra-pub/ginsgold.html#ginseng>. Accessed August 9, 2005). Wild-simulated ginseng is simply growing ginseng in a natural forested environment that mimics those conditions found in the wild (URL: <http://ohioline.osu.edu/for-fact/0056.html>. Accessed August 9, 2005). In general, harvested roots closely approximate the appearance of truly wild ginseng roots, such as in color, texture, and shape of root (URL: <http://www.unl.edu/nac/afnotes/ff-4/index.html>; <http://www.uky.edu/Ag/NewCrops/introsheets/ginsengintro.pdf>; <http://ohioline.osu.edu/for-fact/0056.html>. Accessed August 9, 2005). Because this type of ginseng production requires little investment by growers and receives higher net profits, it has grown in popularity in the last several years.
8. Wild-simulated ginseng is typically grown in a forested environment within the range of the species, which includes forested areas of the Appalachian-Allegheny Mountains in Kentucky, New York, Pennsylvania, Tennessee, and West Virginia, and a lesser amount from the Ozark Plateau of Arkansas and Missouri (URL: <http://attra.ncat.org/attra-pub/ginsgold.html#ginseng>. Accessed August 9, 2005).
9. Ginseng requires 70–80% shade. Forested areas selected usually require minimal site preparation and maintenance (URL: <http://ohioline.osu.edu/for-fact/0056.html>. Accessed August 9, 2005).
10. There are about 20 commercial sources of ginseng seed sold by experienced ginseng growers, who have developed large-scale ginseng farms (URL: <http://www.ext.vt.edu/pubs/forestry/354-312/354-312.html>. Accessed August 9, 2005). The vast majority of the ginseng seed sold is stratified seed which is planted in the autumn after trees drop their leaves (URL: <http://ohioline.osu.edu/for-fact/0056.html>; <http://www.ext.vt.edu/pubs/forestry/354-312/354-312.html>. Accessed August 9, 2005). Growers can also buy small transplant roots for planting (S. Harris, pers. comm. 2005).
11. Ginseng plants are usually left to grow naturally in the forest with only occasional vegetation control as necessary (Beyfuss 1999). Typically, minimal use of pesticides and fertilizers are applied to the ginseng plants (Beyfuss 1999; URL: <http://www.conservation.state.mo.us/nathis/plantpage/flora/ginseng/>. Accessed August 9, 2005).
12. Wild-simulated ginseng grown from seed is usually harvested at 6-10 years of age (average 9-12 years) (URL: <http://www.conservation.state.mo.us/nathis/plantpage/flora/ginseng/>; <http://ohioline.osu.edu/for-fact/0056.html>; <http://www.ext.vt.edu/pubs/forestry/354-312/354-312.html>. Accessed August 9, 2005).

Woodsgrown ginseng

13. Woodsgrown or “woods-cultivated” ginseng refers to ginseng grown under a forest canopy with various amounts of human intervention. Typically, large continuous forested areas that provide 70%-80% natural shade are selected for woodsgrown ginseng (Scott et al. 1995; Beyfuss 1999; URL: <http://www.conservation.state.mo.us/nathis/plantpage/flora/ginseng/>; <http://www.uky.edu/Ag/NewCrops/introsheets/ginsengintro.pdf>; <http://www.hort.purdue.edu/newcrop/newcropsnews/94-4-1/ginseng.html>. Accessed August 9, 2005).
14. Much of the literature available on cultivation of woodsgrown ginseng recommends using intensive management techniques, as described below (Scott et al. 1995; Beyfuss 1999; URL: <http://www.conservation.state.mo.us/nathis/plantpage/flora/ginseng/>; <http://www.hort.purdue.edu/newcrop/newcropsnews/94-4-1/ginseng.html>. Accessed August 9, 2005).
15. Site preparation for woodsgrown ginseng includes clearing understory vegetation and undesirable trees, shrubs, and large rocks (Scott et al. 1995; Beyfuss 1999; URL: <http://www.hort.purdue.edu/newcrop/newcropsnews/94-4-1/ginseng.html>; <http://www.uky.edu/Ag/NewCrops/introsheets/ginsengintro.pdf>; <http://www.sfp.forprod.vt.edu/factsheets/ginseng.pdf>. Accessed August 9, 2005). The soil is tilled usually 4–8 inches either by a rototiller or by hand (Beyfuss 1999; <http://www.sfp.forprod.vt.edu/factsheets/ginseng.pdf>. Accessed August 9, 2005). Depending on the site location, soil amendments such as limestone, gypsum, and chemical or organic fertilizers may be added to the soil as necessary (Davis 1997; Beyfuss 1999; Das et al. 2001; URL: <http://www.ext.vt.edu/pubs/forestry/354-312/354-312.html>. Accessed August 9, 2005).
16. Although non-stratified ginseng seed can be planted, most references recommend planting stratified seed in the late summer or fall. A typical application rate is 40-50 pounds per acre (Scott et al. 1995; Beyfuss 1999). There are approximately 7,000 to 8,000 ginseng seeds per pound (Beyfuss 1999; URL: <http://www.hort.purdue.edu/newcrop/newcropsnews/94-4-1/ginseng.html>. Accessed August 9, 2005). To ensure a more uniform stand of plants and to reduce the time from planting to harvest of roots, some references recommend planting cultivated seedlings or cultivated transplant roots (rootlets) (Davis 1997; Beyfuss 1999; Das et al. 2001).
17. Typically, ginseng seed is planted in raised beds, which are routinely manually cleaned of competing vegetation (URL: <http://www.ext.vt.edu/pubs/forestry/354-312/354-312.html>. Accessed August 9, 2005). Pesticides are applied as necessary for insect, disease, and rodent control (Beyfuss 1999). The more intensive the cultivation practices are used for woodsgrown ginseng (e.g., tilled beds) the more the roots look like cultivated field-grown roots rather than wild roots (URL: <http://www.ext.vt.edu/pubs/forestry/354-312/354-312.html>. Accessed August 9, 2005).
18. In general, woodsgrown ginseng from seed requires 6–8 years to obtain a size suitable for harvesting (Scott et al. 1995; Davis 1997; Beyfuss 1999;

URL:<http://www.uky.edu/Ag/NewCrops/introsheets/ginsengintro.pdf>. Accessed August 9, 2005). A general “rule of thumb” is that 100 to 300 dried ginseng roots yield one dried pound of roots (Beyfuss 1999).

19. Based on our review of the wild-simulated and woodsgrown ginseng production practices, we have concluded that the export of ginseng roots grown under these methods and harvested in 2005 will not be detrimental to the survival of the species in the wild, provided that the roots to be exported were certified by States included in this finding and the roots are from plants **5 years of age or older**. (Age of ginseng roots at the time of harvest can be determined by counting the number of annual bud-scale scars on the rhizome. A single scar is produced after abscission of the plant’s aerial stem each year).

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