

Quarantine requirements for the importation of fresh American ginseng (*Panax quinquefolius* L.) from Wisconsin of the United States

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1. The importation of fresh American ginseng (*Panax quinquefolius* L.) from the State of Wisconsin of the United States of America, must comply with the “Quarantine Requirements for the Importation of Plants or Plant Products into The Republic of China” (hereinafter referred to as “PQR”) and comply with these quarantine requirements.
2. Requirements for the designated production sites:
 - (1) Producers of each designated ginseng production site must register with the United States Department of Agriculture, Animal and Plant Health Inspection Service (APHIS) or organizations approved by APHIS (hereinafter referred to as “APHIS”). APHIS must issue a registration number to each designated production site.
 - (2) The designated production site must have clear delimitations with recognizable boundaries, and may be an entire farm, or blocks which are clearly defined within a farm. If the designated production site is for an entire farm, the land must be contiguous. The designated production site are characterized by clearly visible cedar (*Cedrus* spp.) posts at the perimeters or anchor wiring along the perimeters or other ways to distinguish from other production areas, and the exact location, boundaries and areas must be identified on a map.

- (3) The boundaries of the designated production site are marked with signs which state that the area is a burrowing nematode (*Radopholus similis* and *R. citrophilus*) pest free production site and trespassing is not allowed.
- (4) The designated production needs to be fumigated as a precautionary measure for site preparation before ginseng planting.
- (5) APHIS must conduct soil surveys on the pest status of burrowing nematode in the designated production sites in the summer before harvest to confirm that the area is free of burrowing nematode and to ensure compliance of these quarantine requirements.

3. Benchmarks for soil testing

- (1) Soil samples shall be taken systematically to represent the production site (See Appendix). If the designated production site is less than or equal to 1 hectare, 25 sampling positions shall be selected; for each additional hectare, 25 more positions are to be sampled. Each sample shall be approximately 13 cm deep and contain a minimum of 10 g soil. The sampling positions shall be chosen as close to the roots of ginseng as possible.
- (2) Up to 50 soil samples can be mixed and used as a composite soil unit for testing. The composite soil unit shall be stored in a plastic or other moisture-retaining bag.
- (3) Soil samples shall be stored in cool and shaded places, avoiding extreme high or low temperatures. Plastic bags must be well

labeled and sealed to retain soil moisture. If hand delivery to the laboratory is not possible, soil samples shall be shipped in insulated containers using express next day service.

(4) Soil samples must be labeled and submitted to APHIS approved nematology trained laboratory for nematode testing, and laboratory must report the test result within 10 working days. If nematodes in the genus *Radopholus* (*Radopholus* spp.) are found in the soil samples, the species shall be identified and the plant quarantine authority of Taiwan (hereinafter referred to as “BAPHIQ”) must be notified.

(5) APHIS, APHIS approved soil testing laboratory and ginseng growers must maintain a file of soil testing records for reference. The records shall include the sampling date, registered number of the designated production sites, areas, number of soil cores, soil sample number, name of nematode identification personnel, identification date, and results of identification.

4. Requirements on the operation of designated production sites

(1) During production period, producers shall manage and control the pests that are of concern.

(2) Producers must maintain a production diary with details of ginseng growing procedures, sowing area, dates of sowing, and control measures for targeted pests and diseases and implementation dates, including management measures for the movement and entry of machinery, vehicles, other equipment and people for the designated

production site.

(3) The production diary must be available for audit inspection by APHIS and BAPHIQ.

(4) After soil samples are taken for burrowing nematode testing, the production site must take the following measures to maintain the pest free status and to prevent the introduction of burrowing nematode into the designated production site:

a. Not to allow any PQR-listed host plants or plant parts of burrowing nematode except ginseng into the production site.

b. Using site specific tools, equipment, machinery and vehicles, if they are from unconfirmed burrowing nematode free area, washing all of them before entering designated production site. Tools, equipment, machinery and vehicles must be power-washed to remove soil particles and sprayed with disinfectant prior to entering the site.

c. Ginseng producers and personnel shall wear new disposable plastic gloves and Tyvek coveralls to cover clothing. Footwear must be new shoes or new disposable footwear cover provided by designated production sites, or boot bath to clean and disinfect the footwear.

5. Requirements for harvest, packing and storage operation

(1) All equipment and containers used in the harvesting and post-harvest storage and transportation of ginseng roots must be

clean and free of soil every time before use.

- (2) Each field harvest container must be labelled with its designated production site registration number to ensure traceability of the product from harvest, loading to harvest container through to export.
- (3) Ginseng shall only be packed and stored in facilities approved by APHIS designated facility. Managers of the packing or storage facilities must maintain an operation diary available for audit.
- (4) Producers shall place the harvest containers from each designated production site separately in the receiving area and must keep records of the dates, weight and the number of field harvest containers.
- (5) Fresh ginseng for export to Taiwan shall be cleaned, selected and packed separately by designated production site for traceability; all processing equipment shall be disinfected before processing fresh ginseng export to Taiwan or between different designated production sites.
- (6) Prior to packing, fresh ginseng shall be inspected and sorted by hand for pest infestation and quality by individual trained in quality control.
- (7) After harvesting and during processing and packing, soil attached to the outer surface of the ginseng shall be cleaned, suspected pest damaged or non-qualified ginseng shall be culled.

(8) Ginseng from non-designated production sites shall not be packed with ginseng from the designated production site at the same time; and they shall be packed and stored separately.

(9) Each export package (plastic bag, box, or drum) shall be clearly labelled with the designated production site registration number, lot number or packed date and the establishment identification number of packing and storing facilities for traceability.

6. Confirmation of quarantine operation

(1) APHIS shall provide a list of designated production site, packing, and storage establishments to BAPHIQ. BAPHIQ shall be informed if there is withdrawal or amendments to the designated production site, packing or storage establishments.

(2) In the first two years of trading of ginseng under these quarantine requirements, APHIS shall invite BAPHIQ to conduct an on-site audit of the operation of ginseng for export to Taiwan annually. The invitation shall be provided two months prior to the audit. BAPHIQ may send inspectors to conduct the audit. All costs related to the audit visit shall be borne by the United States of America.

(3) If APHIS has implemented the relevant measures set accordingly in the quarantine requirements to maintain its burrowing nematode pest free production sites, and when the following conditions are met, the audit may be conducted by APHIS on behalf of BAPHIQ that year, provided that APHIS must invite BAPHIQ to conduct an

audit at least once in every three years:

1. The producers have been audited and approved by BAPHIQ at least once within the past three years;
2. Significant volume of ginseng trade has occurred in the previous year. The trade volume is enough for making an assessment that the production and export operations comply with these quarantine requirements.
3. There are no detections of burrowing nematode or other BAPHIQ designated quarantine pests during import quarantine inspection in the previous year.

(4) APHIS must inform BAPHIQ immediately if there are any changes to the pest status of the burrowing nematode in the US.

7. Export quarantine inspection procedures

(1) Export quarantine inspection must be conducted in designated packing or storage establishments approved by APHIS.

(2) APHIS must ensure that fresh ginseng for export to Taiwan meets the following requirements:

1. Fresh ginseng were sourced from designated production sites and in compliance with the relevant operation requirements.
2. Fresh ginseng were packaged in a designated packing establishment approved by APHIS.
3. Fresh ginseng were stored in a designated storage establishment

approved by APHIS.

- (3) Ginseng samples for inspection and nematode testing must not be returned to the lot for export to Taiwan.
- (4) Soil test results must be presented when applying for phytosanitary certification. Ginseng that pass quarantine inspection must be accompanied with a phytosanitary certificate issued by APHIS with an additional declaration stating; “The registered number of designated production site” and “The ginseng has been produced in a pest free production site for burrowing nematode and has been inspected and found free of burrowing nematode and other BAPHIQ designated quarantine pests” will be added to the certificate.

8. Import Quarantine Inspection Measures

- (1) The phytosanitary certificate with additional declaration issued by APHIS must comply with quarantine requirements.
- (2) Import quarantine procedure, measures, sampling and inspection must comply with the “Plant Protection and Quarantine Act” and relevant regulations of Taiwan.
- (3) If the contents listed on the phytosanitary certificate do not meet the quarantine requirements or other related regulations, the certificate shall be re-submitted with correct information, the consignment will be returned, re-exported or destroyed.
- (4) If any quarantine pests other than burrowing nematode are detected

in the fresh ginseng shipment, the consignment will be treated in accordance with Taiwan's relevant quarantine regulations and BAPHIQ will inform APHIS immediately. APHIS must conduct an investigation and take appropriate corrective actions within seven days and report the results of the investigation to BAPHIQ.

(5) A fresh ginseng shipment would be prohibited into Taiwan if any of the following situations occur:

1. Fresh ginseng roots are sourced from non-designated ginseng production sites.
2. The consignment is not accompanied by a phytosanitary certificate issued by APHIS.
3. Soil is attached to the fresh ginseng.

(6) If burrowing nematodes are detected in the imported fresh ginseng, BAPHIQ will immediately inform APHIS to suspend temporarily the export of fresh ginseng from the State of Wisconsin regulated by these quarantine requirements to Taiwan. The consignment is prohibited into Taiwan and will be returned or destroyed.

(7) APHIS must immediately suspend the export of fresh ginseng from the State of Wisconsin regulated by these quarantine requirements to Taiwan. Fresh ginseng consignments from the pathway that completed export quarantine inspection and were issued with a phytosanitary certificate prior to the date of suspension could still be exported to Taiwan under more strict import quarantine

inspection conditions.

(8) APHIS must investigate the cause for the presence of burrowing nematode and provide a report with improved measures to BAPHIQ for approval. BAPHIQ will review the relevant report submitted by APHIS and may send inspectors to the US for an audit visit of the proposed corrective actions. All expenses associated with the visit will be borne by the United States of America.

(9) Temporary export suspension may be lifted after BAPHIQ has approved the corrective actions.

Appendix: The Procedure of Systematical Soil Sampling in Designated Production Site

- (1) When APHIS receives a request for taking soil samples for burrowing nematode testing, the officer shall review the production site map, size, and develop a field sampling plan.
- (2) This is an example for taking soil samples from a square ginseng production site to meet the sampling intensity of 25 locations per hectare (2.5 ac). Sampling route will be 20 m (65 ft) apart, and soil samples will be taken along the route at locations 20 m (65 ft) apart. The detailed field procedure is described as following:
 - a. At the corner of the subsection, walk along the edge for 10 m (33 ft). From that point aim for a straight line cross the field, parallel to the edge of the production site.
 - b. Chose a random number between 10 and 30 m (33 and 100 ft) and use the number as the distance to the first soil sampling point along the sampling line.
 - c. Pace (or using measuring tape) 20 m (65 ft) to the next sampling point. Continue taking samples at every 20 m (65 ft) until the edge of production site is reached.
 - d. From the end point of the line at the edge of the production site, move 20 m (65 ft) away from the first sampling line and set up the point as the beginning of second sampling line.
 - e. Repeat steps b – d, until the edge of subdivision is reached.

