INDUSTRY / USDA-APHIS-PPQ OFFSHORE GREENHOUSE CERTIFICATION PROGRAM FRAMEWORK

BACKGROUND AND PROGRAM PARTICIPATION

PPQ and the U.S. nursery industry are working together to protect American agriculture by ensuring that imported plant cuttings are free from potentially harmful regulated pests and diseases. Growing plants in certified greenhouses under a systems approach can effectively mitigate most of the pest risk offshore. Channeling the bulk of the high-volume, highly seasonal vegetative cutting trade into a certification program will not only safeguard American agriculture, but will also address peak season challenges at PPQ's plant inspection stations. By inspecting low risk plant material at a reduced intensity or frequency, PPQ inspectors can focus inspections on higher risk imports.

To do this, PPQ and the nursery industry partnered to implement the offshore greenhouse certification program (OGCP). As part of this program, participating facilities will benefit with a reduced inspection frequency at the U.S. plant inspection stations when shipping pest free plant cuttings for shipments that meet the following criteria:

- Consist of only unrooted cuttings from the approved taxa list (see Appendix 1)
- Cuttings must be produced in an APHIS-certified facility
- Use APHIS CORE Message Set[1] single window system to submit APHIS-required import data

Participation in the program is voluntary. Certification will require a mandatory facility inspection by APHIS and meeting or exceeding minimum standards for facility construction, security, production and sanitation, pest management, training, and record-keeping. APHIS will work with the nursery industry and appropriate national plant protection organizations (NPPOs) to inspect and issue/re-issue the facility certificate once a year.

QUALIFYING COMMODITY AND PRODUCTION PROTOCOL

Only unrooted cuttings (URC) of approved taxa will be included in the program (see Appendix 1). Commodities approved for the program must meet all permit and import requirements as stated in 7 CFR 319.37. For the purpose of this program, unrooted cuttings are defined as a section of a plant that is removed and used for propagation. While roots are not present, callus tissue (a mass of large, thin-walled, undifferentiated cells that typically form as a precursor to rooting) may be present. Several types of cuttings can be taken from the parent stock depending on the point at

[1] For more information about APHIS CORE Message Set please visit: https://www.cbp.gov/document/guidance/aphis-ace-pga-message-set-implementation-guide-core and https://www.aphis.usda.gov/aphis/ourfocus/importexport/ace.

which the cutting is taken, including stem cuttings, leaf cuttings, and leaf-bud cuttings. For stem cuttings, the stage of the cutting shall be herbaceous or softwood only.

While similar to the APHIS Minimum Sanitation Protocols for Offshore Geranium Cutting Production[2], OGCP will remain distinct from the *Pelargonium* program, a greenhouse certification program designed to mitigate the risk of introducing the select agent *Ralstonia solanacearum* race 3 biovar 2, a serious pathogen of tomatoes, potatoes, and eggplants.

PLANT PRODUCTION PROCESS

- Nuclear Block- The first generation (G1) refers to the tissue culture or original nuclear plants that have been tested and found free of pathogens of concern. Nuclear stock plant blocks are subject to periodic renewal.
- Increase Block- Generation two (G2) or generation three (G3-second increase block) plant material is propagated from G1 or G2, respectively, in separate, defined growing zones or increase blocks subject to the minimum facility, production, and sanitation standards mentioned in this document.
- Production Block- Generation four (G4) plant material is propagated from G3 in dedicated structures or production zones that are separate from increase blocks, and subject to the minimum facility, production, and sanitation standards. Plant material destined for delivery to the nursery's customer.
- Under this systems approach, there is a unidirectional flow of plants for planting which starts with nuclear stock, then increase, then production (Figure 1). Production stock is not used to renew the nuclear stock unless plants are subjected to the clean-up and testing process used to develop the nuclear stock in the first place.
- In order to safeguard against cross-contamination of the increase and production block growing zones, there must be a physical barrier between increase and production blocks through the use of dedicated growing zones.
- Access to increase blocks and production blocks is only allowed when adequate preventive hygiene measures are taken.

[2] https://www.aphis.usda.govplant_health/plant_pest_info/ralstonia/downloads/ralstoniaworkplan.pdf

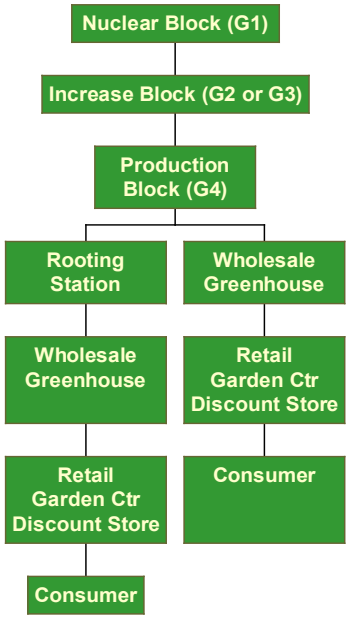

FIGURE 1: VEGETATIVE CUTTING PRODUCTION PROCESS

MINIMUM STANDARDS FOR GREENHOUSE STRUCTURE

PLACE OF PRODUCTION INFRASTRUCTURE

- A place of production (or facility) is considered the regulated physical entity for purposes of this program and is defined by the International Plant Protection Convention as any premises or collection of fields operated as a single production or farming unit. Specific to this program, a facility is "a contiguous property that is used to produce vegetative cuttings of plants for planting." Entry to places of production must be secured to avoid passage of contaminated plant materials. Trucks entering the facility must have tires cleaned and disinfected before entry into the production area or vehicles should be excluded from the production area.
- All plant material grown for the purpose of production of approved plants for planting destined for the United States must be propagated and maintained in greenhouses (see Appendix 1).
- Greenhouses must be covered with an approved material (glass, polycarbonate, or polyethylene). The sides of greenhouses must be enclosed with an approved covering or screen with openings of 0.6mm x 0.6mm or less. Screens and other physical barriers must be used to prevent entry of pests into the structure.
- A buffer composed of gravel, crushed rock, concrete, or covered by weed cloth must surround the outer perimeter of the greenhouses. This buffer must be at least one meter wide, sloped so that water drains away from the greenhouse, and free of plants, grass or weeds.
- Greenhouse floors must be a hard surface such as concrete, crushed rock, or weed cloth with a layer of gravel (at least 10 cm) covering all bare soil. Floors must drain properly to prevent puddles of water.

- Equipment surfaces that comes in contact with stock production plants (*e.g.*, ends of hoses or watering wands) must be surface disinfected before each use and may not come in contact with the floor while in use (see Appendix 2).
- Production stock plants shall be rooted and grown in approved growing media (see Appendix 3) on benches raised at least 46 cm above the floor to prevent contamination from splashing water.
- Entry to the greenhouse must be through a vestibule with automatically closing doors to deter the entry of pests. The vestibule must have double-doors; a double door is considered as two doors that form a distinct enclosed environment separating the outdoors from the inside of the greenhouse. The vestibule must provide direct access to the sanitation station- an area equipped with wash station(s), foot bath(s), and protective clothing (*e.g.,* aprons, lab coats, gloves).
- At the discretion of APHIS and NPPO representatives, resolutions of pest problems may involve actions against only certain greenhouses within a place of production, as individual structures can effectively isolate pest problems.

Minimum Production and Sanitation Standards

All facility employees must wear protective clothing and follow the sanitation practices described below to mitigate the risk of introducing regulated pests into production areas. Sanitation practices in greenhouses, grading, and packing facilities will be strictly enforced. See Appendix 2 for a list of surface, skin and clothing APHIS-approved disinfectants.

Wash Stations:

Facilities must have sanitation stations in greenhouses for employees to clean all exposed body parts (*e.g.,* hands, arms, legs) that may come in contact with plant material. All exposed body parts must be washed with antibacterial soap and/or disinfectant prior to entering the production area of the greenhouse. Latex or vinyl gloves that are disinfected before and after each use or are changed between uses may be used as an alternative option.

Footwear:

Facilities must provide a sanitation area for employees to clean their footwear (brush or rinse free from soil and debris) prior to entering the facility. Facilities must provide foot baths or footwear to be worn specifically within production zones. The volume of disinfectant used in footbaths is to be adequate to ensure that soles and lower portions of footwear are submerged. Disinfectant must be changed a minimum of twice daily, with debris in reservoirs being removed prior to replacements of the disinfectant. The facility must maintain a log of disinfectant type, and the time and personnel responsible for changing the foot bath(s).

Protective Clothing:

All personnel upon entry into plant stock increase or production areas must wear protective clothing (e.g., clean lab coats, aprons, or clothing dedicated for use within specific plant production zones). Protective clothing designed to come into contact with the plant material must be dedicated

to each greenhouse. Personnel will put on protective clothing after leaving the sanitation station but prior to entering plant production areas.

Personnel must remove greenhouse-specific protective clothing prior to entering the sanitation station. If lab coats are worn between greenhouses within a production area, then they should be covered with or exchanged for a clean apron upon entering the production area of each greenhouse. Protective clothing must be stored to avoid coming into contact with the floor. Clothing is to be maintained free of debris, potting media, soil, or plant material. Protective clothing should be washed in detergent weekly or replaced in the case of disposable aprons.

PERSONAL HYGIENE:
While in the greenhouse facility during production, personnel must regularly disinfect hands and forearms that come into contact with plants and/or gloves by either dipping in or spraying hands or forearms with disinfectant. Personnel must regularly disinfect their hands and forearms or gloves by dipping or spraying with disinfectant every 10 plants or between definable production units.

TOOLS AND EQUIPMENT:
Knives, scalpels, scissors, and other equipment that comes into contact with plants must be routinely disinfected every 10 plants or between definable production units or plant types. Carts and collection baskets are to be sprayed with disinfectant on all surfaces that are likely to come into contact with the plants or equipment used in processing the plant cuttings. The volume of disinfectant used to surface disinfest tools should be adequate to submerge entire blade or portions of tools that make contact with the plants.

HANDLING OF CUTTINGS AND TRACEABILITY:
The facility must demonstrate trace forward/trace back capability to a specified level at the place of production (*e.g.,* farm, greenhouse, growing zone).Upon harvest, cuttings will be placed directly into new plastic bags or into plastic containers that can be disinfected between each use. Waterproof labels must accompany each bag of cuttings; these labels will allow cuttings to be traced forward through rooting stations (if the cutting is sold as un-rooted or callused) to the first wholesale grower customer.

When transferring cuttings to grading facilities, bags or containers of cuttings may not come in contact with any material that could expose them to regulated pests.

GREENHOUSE FLOORS:
Greenhouse floors must be free of debris and weeds. Greenhouse personnel who are in the process of handling production stock plants should not retrieve plant parts (*e.g.,* cuttings, trimmings) that fall to the floor. Other workers (or same workers after harvesting of cuttings) should remove and dispose the debris daily. Floors must be sanitized routinely, at a minimum before each new production cycles begins. Floors must drain properly to prevent long-standing puddles of water. Water in contact with flooring must never come in contact with surfaces upon which plants are

grown (splashing, watering, etc). Disinfesting hose ends that have been in contact with greenhouse floors or other potentially hazardous surfaces may be treated with surface disinfectants such as quaternary ammonium-based products.

GROWING MEDIA:

Stock plants must be grown in APHIS-approved media (see Appendix 3) sourced, stored, treated, and/or handled to prevent pest contamination. Only new plastic bags or pots, or pots that have been surface disinfested may be used as stock plant containers. Growing media and pots intended for use in greenhouses must be stored in a manner that prevents contact with the ground, soil/dirt or turf surfaces. Growing media and pots may be reused if sterilized by an APHIS-approved method:

1) Steam sterilization:

    - Media has to reach and hold a temperature of 80° Celsius (176° Fahrenheit) for two hours. Ten sensors are used. All sensors have to reach 80°C before start counting the two hour exposure.
    - Sensors must be placed 2 inches below surface.
    - Sensors must be evenly spaced on left, right, and center.
    - Sensors must be tested and calibrated before use.

2) Fumigation:

    - If methyl bromide is used, the fumigation rate is 3 grams per liter of media for 72 hours at 21° Celsius (70° Fahrenheit) or above.
    - If Vapam 3% is used, 50 ml per 5 liter pot or bag, keep it covered for 72 hours.

IRRIGATION:

Treatment requirements differ depending on the source, water storage, and delivery system for irrigation water. Treatment is not required for potable municipal water or water collected from sealed deep wells, provided the water is used immediately or stored in tanks that cannot be contaminated by native soil or plant material/debris. An APHIS-approved treatment is required for water collected from unsealed wells, rainwater collection systems, ponds, lakes, streams, or any other type of open body of water and recycled or recirculated water.

A minimum of two <u>independent</u> water purification systems are to be instituted for each plant production facility to safeguard the crop from infection. An independent back up water purification system is required to ensure that the crop does not become infested with pathogens due to failure of the primary water purification system.

Any water purification system <u>must</u> consist of filtration of water through <u>reed-bed systems and slow sand filters</u> <u>in combination with one</u> of the following purification methods:

- Ozonation (0.4 ppm residual ozone for a minimum of 4 minutes)
- Ultraviolet irradiation: 300J/m2 of UV light at 254 nm with at least 50% light transmission.

- Peroxygen products: a minimum residual level of 4 mg per liter of peracetic acid for 2 minutes. This may be achieved by injection of irrigation water during pumping at 15-35 m^3 per hour) with a commercial formulation of 50-100 ml/m^3 of peracetic acid.
- Chlorine dioxide: Dosage of 0.1mg per liter of residual chlorine dioxide sustained for a two minute minimum reaction time. This may be achieved by injecting irrigation water with 5 mg per liter using a chlorine dioxide generator.

Records must be maintained of any breaches that occur in any part of the irrigation system, including the date, exact location, and remedial measures taken, and tests performed to ensure that the irrigation system remains free of pathogens.

Plants may not be irrigated using ebb, overhead, and flow or flood irrigation systems as these methods may contribute to spread of regulated pests. Irrigation systems should be constructed so that emitters are not in contact with potting media and/or are equipped with backflow devices to prevent contamination of the watering system.

Other Pest and Pathogen Best Management Practices

Each facility must have a pest management plan that covers the aforementioned standards as well as the following elements, including recordkeeping practices.

- Identification of a designated facility pest manager.
- Periodic structure inspections to ensure compliance with minimum facility standards (*e.g.*, integrity of insect screening).
- Basic pest control program appropriate for crops being produced and to mitigate against the introduction of pathogen-carrying insects, mollusks, pathogens, and any other pest of concern.
- Crop scouting, removal, and disposal of infested/infected plants. For known pests and pathogens, schedule scouting according to predicted emergence dates and or key life cycle events. Schedule scouting at intervals that are frequent enough to prevent or manage outbreaks. Records of pest monitoring and management activities must be maintained and made available to APHIS upon request.
- Traceability mechanisms to facilitate targeting, port of entry clearance, and trace back/trace forward in the event of noncompliance.
- Corrective action if pests and diseases are found, including documentation of the detection and corrective action applied.
- Process for submitting unidentified plant pests to subject matter experts (as designated in the pest management plan) for identification.
- A training program managed by the designated pest manager. Personnel instruction is an important component of good management practices. The designated pest manager will be responsible for training all personnel in proper practices required to prevent regulated pests from entering and becoming established. This training will include not only practices performed in the greenhouses, but should also provide a fundamental understanding of how plant pests (especially regulated pests) can spread from plants commonly found in workers'

yards or environs and required sanitary practices to prevent infection. Personnel will be trained at least annually, more often if required. Facilities must maintain records of training and personnel certifications and provide to APHIS upon request.

- Access to production facilities is limited to individuals certified to work in facilities and authorized visitors. Facilities must maintain lists of approved personnel.

GREENHOUSE CERTIFICATION PROCESS

Facilities interested in participating in the OGCP must contact APHIS to establish a cooperative service agreement and coordinate the mandatory facility inspection and certification. APHIS will provide industry with a budget with estimated costs to cover the inspector's salary, benefits, and travel costs associated with certification activities. Facilities will deposit funds for the visits into a trust fund with an accounting code used to charge APHIS expenses.

Certified APHIS inspectors will perform the certification site visits for the program during the facility's peak production season. The APHIS inspector will observe the harvesting process and evaluate the candidate facilities using the Certification Site Visit Checklist (Appendix 4). APHIS will publish the list of approved facilities in the USDA Plants for Planting Manual.

PORT OF ENTRY CLEARANCE PROCESS

Facilities participating in the program must submit the required import information and the facility certification number using the APHIS's CORE message set. This system allows for an expedited inspection process at the USDA plant inspection stations. Shipments from participating facilities will be inspected at a reduced rate, unless pest or problems are experienced, expediting the transit time from the facility to the end customer.

APPENDIX 1: APPROVED TAXA LIST

Unrooted, vegetative cuttings from approved facilities will be eligible when listed in the table below.

For the purpose of this program, unrooted cuttings are defined as a section of a plant that is removed and used for propagation. While roots are not present, callus tissue (a mass of large, thin-walled, undifferentiated cells that typically form as a precursor to rooting) may be present. For stem cuttings, the stage of the cutting shall be herbaceous or softwood only.

The following are not eligible: 1) Tissue culture/in vitro plantlets; 2) Genetically engineered varieties; 3) Plants for planting having specific requirements in addition to requirements listed in the USDA Plants for Planting Manual, *Chapter 2: General Restrictions*; and 4) Hybrids and varieties that lack parental information.

Notes:

1) Participants exporting hybrids and/or varieties must provide parental or source species information to USDA in order to establish eligibility.
2) Each genus designated with 'spp.' (*e.g. Abelia* spp.) should be interpreted to mean all species and hybrids derived from within the genus are eligible. Identification of the species/hybrid is strongly preferred.
3) When a taxon is at species level (*e.g. Artemisia abrotanum*), that specific species must be indicated on the phytosanitary certificate.
4) Some taxon have one or more synonyms. Only one of the synonyms needs to be provided in the phytosanitary certificate.

Taxon	Comment
Abelia spp.	
Achillea spp.	
Aegopodium spp.	
Agapanthus spp.	
Agastache spp.	
Ageratina altissima	Synonym *of Eupatorium rugosum*
Ageratum spp.	
Aglaonema spp.	
Ajuga spp.	
Alternanthera ficoidea	
Alyssum spp.	
Amsonia ciliata	

Taxon	Comment
Amsonia tabernaemontana	
Angelonia spp.	
Anisodontea spp.	
Antirrhinum spp.	*Antirrhinum* spp. was proposed for Not Authorized Pending Pest Risk Analysis (NAPPRA) round 3 (84 FR 64825, Docket No. APHIS-2018-0066) for all propagules except seeds and cut flowers and greenery: NAPPRA from all countries except Canada, Colombia, Costa Rica, France, Guatemala, Indonesia, and Israel.
Aptenia spp.	
Apteria spp.	
Argyranthemum spp.	
Arisaema spp.	
Armeria spp.	Synonym of *Statice* spp.
Artemisia abrotanum	
Artemisia absinthium	
Artemisia arborescens	
Artemisia dracunculus	
Artemisia schmidtiana	
Artemisia stelleriana	
Aster spp.	
Asteriscus spp.spp.	
Aubrieta spp.	
Aurinia spp.	
Bacopa spp.	
Begonia spp.	
Bergenia spp.	
Bidens bipinnata	
Bidens ferulifolia	
Bidens pilosa	
Boltonia asteroides	
Brachyscome spp.	
Bracteantha spp. spp.	*Synonym of Xerochrysum* spp.
Browallia spp.	
Buddleja spp.	
Calamintha spp.spp.	Synonym of *Clinopodium* spp.
Calceolaria spp.	Synonym of *Fagelia* spp.
Calendula spp.	
Calibrachoa spp.	
Calocephalus spp.	
Campanula carpatica	*Synonym of Campanula turbinata*
Campanula garganica	*Synonym of Campanula garganica var. hirsuta hort*

Taxon	Comment
Campanula glomerata	
Campanula incurva	Synonym of *Campanula leutweinii Heldr*
Campanula portenschlagiana	Synonym of *Campanula muralis Port ex A. DC*
Campanula poscharskyana	
Campanula punctata	
Campanula turbinata	Synonym of *Campanula carpatica*
Canna spp.	
Carex morrowii	
Carex oshimensis	
Carex pensylvanica	
Caryopteris spp.	
Catharanthus spp.	*Catharanthus* spp. was proposed for Not Authorized Pending Pest Risk Analysis (NAPPRA) round 3 (84 FR 64825, Docket No. APHIS-2018-0066) for all propagules except seeds and cut flowers and greenery: NAPPRA from all countries except all countries except Costa Rica, Guatemala, India, and Japan
Centaurea spp.	
Ceratostema spp.	
Ceratostigma spp.	
Chamaecyparis spp.	
Chamaesyce hypericifolia	Synonym of *Euphorbia hypericifolia*;
Chelone spp.	
Chrysocephalum spp.	
Chrysogonum spp.	
Cleome spp.	
Clinopodium spp.	Synonym of *Calamintha* spp
Coleus spp.spp.	*Synonym of Plectranthus* spp
Coreopsis spp.	
Cosmos spp.	
Crossandra spp.	
Cuphea spp.	
Dahlia spp.	
Delosperma spp.	
Diascia spp.	
Digitalis spp.	
Dipladenia spp.	
Echinacea purpurea	
Erysimum linifolium	
Eupatorium dubium	Synonym of *Eutrochium dubium*
Eupatorium maculatum	Synonym of *Eutrochium maculatum* var. *maculatum*;
Eupatorium purpureum	Synonym of *Eutrochium purpureum* var. *purpureum*

Taxon	Comment
Eupatorium rugosum	Synonym of *Ageratina altissima*
Euphorbia amygdaloides	
Euphorbia characias	
Euphorbia characias subsp. wulfenii	
Euphorbia dulcis	
Euphorbia epithymoides	Synonym *Euphorbia polychroma*
Euphorbia graminea	
Euphorbia hypericifolia	Synonym of *Chamaesyce glomerifera*, *Chamaesyce hypericifolia*, *Euphorbia glomerifera*
Euphorbia hyssopifolia	Synonym *Chamaesyce hyssopifolia, Euphorbia brasiliensis*
Euphorbia nicaeensis	
Euphorbia polychroma	Synonym of *Euphorbia epithymoides*
Euphorbia pulcherrima	
Euphorbia seguieriana	
Euphorbia wulfenii	Synonym of *Euphorbia characias* subsp. *wulfenii*
Euphorbia x martini	
Euryops spp.	
Eutrochium spp.	
Evolvulus spp.	
Fagelia spp.	*Synonym of Calceolaria* spp
Faucaria spp.	
Felicia spp.	
Fuchsia spp.	
Gaillardia spp.	
Galeopsis spp.	
Galium odoratum	
Gaura lindheimeri	Synonym of *Oenothera lindheimeri*
Gazania spp.	
Geranium x oxonianum	
Gerbera spp.	
Geum chiloense	Synonym of *Geum quellyon*
Geum chiloense x rivale	
Geum quellyon	Synonym of *Geum chiloense*
Geum rivale	
Geum ternatum	Synonym of *Waldsteinia ternate*
Glandularia spp.	
Glechoma spp.	
Gomphrena globosa	
Gypsophila spp.	

Taxon	Comment
Hedera spp.*	Exemptions* Not Authorized Pending Pest Risk Analysis (NAPPRA) from all countries except Canada, Colombia, Costa Rica, Guatemala, Israel, Kenya, and Mexico. It needs to meet Asian Long horned Beetle (ALB)/ Citrus Long horned Beetle (CLB) conditions of entry. Please see USDA Plants for Planting Manual, Chapter 6.
Helenium autumnale	
Helianthemum spp.	
Helianthus annuus	
Helianthus salicifolius	
Helichrysum spp.	
Heliconia spp.	
Heliopsis spp.	
Heliotropium spp.	
Helleborus spp.	
Heuchera spp.	
Heucherella spp.	
Houttuynia spp.	
Hypericum calycinum	
Hypericum x inodorum	
Hypoestes spp.	
Iberis spp.	
Impatiens hawkeri	
Impatiens walleriana	
Iresine spp.	
Isotoma spp.	
Jamesbrittenia spp.	
Kniphofia spp.	
Lamiastrum spp.	Synonym of *Lamium* spp.
Lamium spp.	Synonym of *Lamiastrum* spp
Lantana spp.	
Lavandula spp.	
Leucanthemum spp.	Please provide specific species. Species are regulated by the synonym which is regulated under the Chrysanthemum restrictions.
Leucophyta spp.	
Lithodora spp.	
Lobelia cardinalis	
Lobelia erinus	
Lobelia xalapensis	
Lobelia × speciosa	
Lobularia spp.	
Lomelosia spp.	

Taxon	Comment
Lophospermum spp.	
Lychnis coronaria	Synonym of *Silene coronaria*
Lychnis flos-cuculi	Synonym of *Silene flos-cuculi*
Lychnis flos-jovis	Synonym of *Silene flos-jovis*
Lysimachia congestiflora	
Lysimachia nummularia	
Lysimachia punctata	
Mandevilla spp.	
Margaritaria spp.	
Matisia spp.	
Mazus spp.	
Mecardonia spp.	
Melissa spp.	
Mentha spp.	
Monarda spp.	
Muehlenbeckia spp.	
Nemesia spp.	
Nepeta spp.	
Nierembergia spp.	
Ocimum spp.	
Oenanthe spp.	
Oenothera berlandieri	
Oenothera lindheimeri	Synonym of *Gaura lindheimeri*
Oenothera macrocarpa	
Oenothera macrocarpa subsp. fremontii	
Oenothera speciosa	
Origanum spp.	
Osteospermum spp.	
Oxalis spp.	
Pachysandra spp.	
Pellaea spp.	
Penstemon barbatus	
Penstemon digitalis	
Penstemon hartwegii	
Penstemon parryi	
Pentace spp.	
Pentas spp.	
Pericallis spp.	
Perilla spp.	

Taxon	Comment
Perovskia spp.	Synonym of *Hessesa* spp.
Petchoa spp.	
Petrea spp.	
Petunia spp.	
Phlox divaricata	
Phlox drummondii	
Phlox maculata	
Phlox paniculata	
Phlox stolonifera	
Phlox subulata	
Phygelius spp.	
Physalis spp.	
Physostegia spp.	
Plectranthus spp.	Synonym of *Coleus* spp.
Polemonium spp.	
Portulaca grandiflora	
Portulaca oleracea	
Prunella spp.	
Pulmonaria spp.	
Rhodanthemum spp.	
Rosmarinus spp.	
Rudbeckia spp.	
Ruellia spp.	
Sagina spp.	
Sagittaria subulata	
Salvia spp.	
Santolina spp.	
Sanvitalia spp.	
Saxifraga spp.	
Scabiosa spp.	
Scaevola aemula	
Scrophularia macrantha	
Sedum spp.	
Sempervivum spp.	
Setcreasea spp.	
Silene coronaria	
Silene dioica	Synonym of *Lychnis coronaria*
Silene flos-cuculi	Synonym of *Lychnis flos-cuculi*
Silene flos-jovis	Synonym *of Lychnis flos-jovis*
Silene uniflora	

Taxon	Comment
Solenostemon spp.	
Solidago canadensis	
Solidago rugosa	
Stachys spp.	
Statice spp.	Synonym of *Armeria* spp.
Stevia spp.	
Strobilanthes spp.	
Sutera spp.	
Syngonium spp.	
Tarenaya spp.	
Teucrium spp.	
Thunbergia spp.	
Thymus spp.	
Torenia spp.	
Tradescantia spp.	
Tricyrtis spp.	
Tropaeolum spp.	
Verbena bonariensis	
Verbena canadensis	Synonym of *Glandularia canadensis*
Verbena hortensis	Synonym of *Glandularia ×hybrida*
Verbena litoralis	
Verbena officinalis	
Verbena peruviana	Synonym of *Glandularia peruviana*
Veronica austriaca	
Veronica gentianoides	
Veronica longifolia	
Veronica peduncularis	
Veronica prostrata	
Veronica repens	
Vinca spp.	*Vinca* spp. was proposed for Not Authorized Pending Pest Risk Analysis (NAPPRA) round 3 (84 FR 64825, Docket No. APHIS-2018-0066) for all propagules except seeds and cut flowers and greenery: NAPPRA from all countries except countries except Costa Rica, Dominican Republic, El Salvador, Ethiopia, Guatemala, Israel, Japan, and Kenya.
Viola cornuta	
Viola pubescens	
Waldsteinia ternate	Synonym of *Geum ternatum*
Xerochrysum spp.	Synonym of *Bracteantha* spp.
Zinnia spp.	

APPENDIX 2: LIST OF APPROVED DISINFECTANTS**

Table 1: The following table provides a list of APHIS-approved surface disinfectants. Any product used for disinfection should be approved for use by the NPPO, labeled for use by the appropriate authority in the country where the facility is located, and must be efficacious against regulated pests.

Examples of APHIS-approved Surface Disinfectants			
Trade Name	EPA Reg. No.	Active Ingredients	Use Sites
ANTHIUM DIOXCIDE 5% AQUEOUS STABILIZED CHLORINE DIOXIDE	9150-2	Chlorine dioxide	Boot wash/shoe wash
BIO-FRESH CD	9804-3-65516	Chlorine	Greenhouses, hard non porous surfaces (flower buckets, floors, walls, coolers, benches and counter tops)
COIL & DUCT SPRAY	9804-3-46463	Chlorine	Greenhouses, hard non porous surfaces (flower buckets, floors, walls, coolers, benches and counter tops)
ECOTREAT	9804-3-7909	Chlorine	Greenhouses, hard non porous surfaces (flower buckets, floors, walls, coolers, benches and counter tops)
ENVIROCON	9804-3	Chlorine dioxide	Greenhouses, hard non porous surfaces (flower buckets, floors, walls, coolers, benches and counter tops)
TOTALINE COIL & DUCT SPRAY	9804-3-40536	Chlorine	Greenhouses, hard non porous surfaces (flower buckets, floors, walls, coolers, benches and counter tops)
Zero Tol	70299-1	Hydrogen dioxide	Greenhouse structures, benches, pots, watering systems, evaporative coolers, storage rooms, ventilation equipment, floors and other equipment

Examples of APHIS-approved Surface Disinfectants			
Trade Name	EPA Reg. No.	Active Ingredients	Use Sites
AFCO 4330	4959-16-833	Iodine	Greenhouses, hard non porous surfaces (flower buckets, floors, walls, coolers, benches and counter tops)
BIOSENTRY IODINE DISINFECTANT	65020-4	Nonylphenoxypolyethoxyethanol	Greenhouses, hard non porous surfaces (flower buckets, floors, walls, coolers, benches and counter tops)
CSAN 2339 IDOPHOR SANITIZER	4959-16-67829	Iodine	Greenhouses, hard non porous surfaces (flower buckets, floors, walls, coolers, benches and counter tops)
OAKITE TRISANITE	4959-16-1020	Iodine	Greenhouses, hard non porous surfaces (flower buckets, floors, walls, coolers, benches and counter tops)
SANI DINE	4959-15-64328	Iodine	Greenhouses, hard non porous surfaces (flower buckets, floors, walls, coolers, benches and counter tops)shoe/boot wash
WESCODYNE	4959-16-1043	Iodine	Greenhouses, hard non porous surfaces (flower buckets, floors, walls, coolers, benches and counter tops)
WEST AGRO ZZZ DISINFECTANT	4959-16	Iodine	Greenhouses, hard non porous surfaces (flower buckets, floors, walls, coolers, benches and counter tops)
ZEP-I-DINE	4959-16-1270	Iodine	Greenhouses, hard non porous surfaces (flower buckets, floors, walls, coolers, benches and counter tops)
Lonza Formulation S-18	6836-77	Quat. Ammonium	Farm, Poultry, Swine, and Mushroom Premise Sanitation Veterinary Practice/Animal Care/Animal Laboratory Disinfection
MAQUAT 128-MT	10324-112	Quat. Ammonium	Outer clothing, field harvesting equipment, walls/floors of coolers, flower buckets, and greenhouse packing areas

Examples of APHIS-approved Surface Disinfectants			
Trade Name	EPA Reg. No.	Active Ingredients	Use Sites
MAQUAT 615-HD	10324-72	Quat. Ammonium	Greenhouses, hard non porous surfaces (flower buckets, floors, walls, coolers, benches and counter tops)
MAQUAT 64 MN	10324-113	Quat. ammonium	Florist shops, wholesale florist, shippers, greenhouse packing areas, flower buckets, floors/walls of coolers, benches, and counter tops)
Physan 20	55364-5	Quat. Ammonium	Greenhouses, hard surfaces, lawn and turf grass, seedlings, cut flowers, decorative fountains, pools, birdbaths, and plants

Table 2. List of (a) active ingredients for skin disinfectants (CDC recommendations) and (b) examples of specific products labeled for use on skin or clothing in the United States. Any product used for disinfection should be approved for use by the NPPO, labeled for use by the appropriate authority in the country where the facility is located, and must be efficacious against plant pathogens.

a) Skin disinfectant

Active Ingredient(s)
Alcohols (>60% ethanol)
Chlorhexidine (0.5%-4% depending on preparation)
Chloroxylenol (0.3%-3.75%)
Iodine and Iodophors (7.5%-10% povidone-iodine)
Quaternary Ammonium Compounds (efficacy data lacking)
Triclosan (0.2%-2%)

b) Examples of specific products useful for disinfection of skin and clothing used

Product	**Company**
*GX-1027 Antimicrobial Soap	Galloway Chemical
Hibiclens; Hibistat	AstraZeneca
*Canker Guard	Flo Tech. Inc.
*Csan 154 QT Soap	Bell Chem Corporation
EcoCare 250, EcoCare 260, EcoCare 350, *EcoCare 360	Ecolab
AgriCure; Pure & Clean Antibacterial Handwash with Germsafe	International Laboratory Technology Corp.
FS Antimicrobial Hand Cleaner; FS E-2 Sanitizing Hand Soap; Acclaim Antibacterial Liquid Hand Soap	ZEP Manufacturing Co.
*C-Soap	Genesis Technologies

*Disinfectant for clothing

**Disclaimer: Mention of companies or commercial products does not imply recommendation or endorsement by the U.S. Department of Agriculture over others not mentioned. USDA neither guarantees nor warrants the standard of any product mentioned. Product names are mentioned solely to report factually on available data and to provide specific information.

APPENDIX 3: APPROVED GROWING MEDIA

1. Baked expanded clay pellets
2. Phenol formaldehyde
3. Stockosorb super absorbent polymer
4. Coal Cinder
5. Plastic particles
6. Ureaformaldehyde
7. Coir
8. Polyethylene
9. Vermiculite
10. Cork
11. Polymer stabilized starch
12. Volcanic rock
13. Glass wool
14. Polystyrene
15. Zeolite
16. Organic and inorganic fibers
17. Polyurethane
18. Peat Rock wool
19. Perlite Sphagnum moss
20. Any combination of the above

APPENDIX 4: CERTIFICATION SITE VISIT CHECKLIST FOR OFFSHORE GREENHOUSE CERTIFICATION PROGRAM

1: Facility Information		
Country of Inspection: Facility Name: Date of Inspection:		
Name & Address of Company as on phytosanitary certificate used for CBP consignment clearance: Listed in online Plants for Planting Manual?: *Yes* *No* Parent Company: Finance officer email at the parent company headquarter:		
Physical Address of inspected site: GPS Coordinates of inspected site (office):	Facility Manager: Email: Phone:	Trust Fund Manager at site: Email: Phone:
Total facility area[3]: OGCP-eligible area:	Total No. of greenhouses: OGCP-eligible No. of greenhouses:	Total No. of plants at facility: [4]OGCP-eligible No. plants at facility:

[3] Attach map with layout of facility/greenhouses

[4] Attach list of OGCP-eligible plant taxa

U.S. Importer(s):	Are plants or cuttings currently exported: *Yes* *No* If yes, to what countries: Dates of typical shipping season: Peak season?	Greenhouses being audited today? Which greenhouses were audited during last inspection?
What day(s) does the facility harvest cuttings for shipment? S M T W Th F S What day(s) of operation does the facility ship material? S M T W Th F S	Where does the facility source their nuclear stock[5]? Primary means of shipment: Air Land Sea	Certified Facility Number:

2: Place of Production Infrastructure

Entry to the main facility is secure and excludes any external source of plant pathogen or contaminant from entering the facility: *Yes* *No*

Trucks entering the facility have tires cleaned and disinfected before entry into the production area or are excluded from the production area: *Yes* *No*

All plants are located within an enclosed greenhouse during all stages of growth: *Yes* *No*

Is there complete separation between increase (G2 or G3) and production (G4) blocks? *Yes* *No*

Do employees work exclusively in production block greenhouses or increase block greenhouses during a single workday? *Yes* *No*

3: Greenhouse Buffer Zone

Size	There is at least a one meter buffer zone around the entire greenhouse: *Yes* *No*

[5] Provide facility name and physical address.

Sanitation	Buffer zone free of weeds and dicotyledonous plants: *Yes* *No*
Composition	*Gravel* *Crushed Rock* *Grass* *Concrete* *Weed Cloth* Other:
Slope	Buffer zone sloped away from the greenhouse: *Yes* *No* Buffer prevents seasonal rain or flood waters from entering the greenhouse: *Yes* *No*
4: Greenhouse Construction	
Material	Top: *Glass* *Polycarbonate* *Polyethylene* *Other:* *Condition:* Describe (optional):Sides: *Glass* *Polycarbonate* *Polyethylene* *Screen (opening of 0.6 mm or less)* *Other:* *Condition:* Describe (optional): All openings in greenhouse are covered with screening to prevent the entry of quarantine pests *Yes* *No*
5: Entry and Sanitation Station	
Entry	Single entrance into the greenhouse: *Yes* *No* Direct access to vestibule with wash station(s), foot bath(s), and protective clothing (aprons, lab coats, etc) prior to entering plant production areas: *Yes* *No* Vestibule area with automatically closing double-doors: *Yes* *No* Entry to production area restricted to authorized personnel: *Yes* *No* Are personal items stored before entry to greenhouse: *Yes* *No*

Footbath	There is a footbath with bottom surface rough in texture prior to entering the greenhouse: *Yes* *No* Disinfectant: Volume of approved disinfectant adequate to ensure that soles and lower portions of footwear are moistened: *Yes* *No* Is the disinfectant changed twice daily: *Yes* *No* If No, explain: There is a log to show when the solution is changed: *Yes* *No*
Wash/Disinfection Stations:	There is a sink or disinfection station for handwashing prior to entering the production area: *Yes* *No* List disinfectant: If sinks are used, sink drains immediately to outside of production area: *Yes* *No* Water source for sink: Sealed Well Municipal Other: Treatment: Workers wear latex or vinyl gloves: *Yes* *No*
Dressing Area	There is a protective clothing dressing area outside the production area: *Yes* *No* Protective clothing stored to prevent contact with the floor: *Yes* *No*
Protective Clothing	Protective clothing worn by all personnel on entry to production area: *Yes* *No* Type: *Washable lab coats* *Washable or disposable aprons* *Washable or disposable aprons over lab coats* Other: Protective clothing dedicated to each greenhouse and removed before exiting: *Yes* *No* If lab coats are worn between greenhouses, are they covered with or exchanged for an apron at each greenhouse? *Yes* *No* If No, explain:

	Clothing is maintained free of debris, potting media, soil, or plant material: *Yes* *No* Protective clothing washed in detergent weekly or replaced in the case of disposable aprons: *Yes* *No* Other:
6: Greenhouse Production Area	
Floors and Walkways	Walkways: *Gravel* *Crushed stone* *Concrete* Other: Floors: *Gravel* *Crushed stone* *Concrete* Other: Is native soil present on floors or walkways: *Yes* *No* If yes, describe: Debris-free: *Yes* *No* Weed-free: *Yes* *No* Free of standing water (puddles): *Yes* *No* If No, describe: Floors and walkways are swept at least weekly? Yes No Describe: If floors and walkways are swept daily, is debris removed after or during harvesting or pruning? After During Floors and walkways sanitized at least annually: *Yes* *No* How often: Disinfectant:
Production Surfaces	Plants elevated at least 46cm above greenhouse floor: *Yes* *No* How high? Does/Can water from the floor come in contact (ie. splashing, watering) with plants or benches? Yes NoAll hard surfaces (e.g. floors and benches) were disinfested prior to use: *Yes* *No* Disinfectant: Production surface design and composition ensures drainage: *Yes* *No* Irrigation water does not make pot to pot contact: *Yes* *No*

Irrigation System	Ebb and flow irrigation system present? *Yes* *No* Evidence of flood or sub-irrigation system? *Yes* *No* Emitters are separate from media in pots: *Yes* *No* Emitters equipped with backflow devices or raised above media: *Yes* *No* Hose ends (last 1.2 meters) and irrigation nozzles are off greenhouse floor or production surface: *Yes* *No* If contact is made, hose and watering equipment treated with surface disinfectant? *Yes* *No* Disinfectant: Are hooks or racks used to store hoses from making contact with floor when not in use? *Yes* *No*
Personal Hygiene	Are hands or gloves and forearms disinfected by dipping or spraying with approved disinfectant?: *Yes* *No* Disinfectant: Hands or gloves are disinfected every 10 plants or definable production unit: *Yes* *No* Production unit: _____ Food excluded from greenhouse: *Yes* *No*
Tools and Equipment	Carts and collection baskets sprayed with disinfectant on surfaces that are likely to contact cuttings or equipment used in processing cuttings: *Yes* *No* Disinfectant: Tools for cutting (knives, etc.) used to harvest cuttings soaked in disinfectant prior to use: *Yes* *No* Tools for cutting (knives, etc.) used to harvest cuttings soaked in disinfectant every 10 plants or definable production unit: *Yes* *No* Unit: Tools for cutting (knives, etc.) used to harvest cuttings rotated between each stock plant or stock plant container: *Yes* *No* If No, are tools permanently assigned to a specific bench and appropriately rotated and disinfected between plants on that bench? *Yes* *No* If No, are tools appropriately rotated and disinfected between plants in a definable production unit? Yes No Unit: What is the total number of knives in a bucket used for harvesting**?**

	Disinfectant volume adequate to submerge entire blade and portions of tools that make contact with plants: *Yes* *No*
Bags / Containers	Only new plastic bags or disinfected plastic containers are used for collection of harvested cuttings: *Yes* *No* Disinfectant:
Cuttings:	Cuttings placed in plastic bags labeled with non-water soluble ink: *Yes* *No* Labels accompany each bag of cuttings: *Yes* *No* Label system allows trace forward through rooting stations or directly from farm to first wholesale customer: *Yes* *No* Transfer to grading facilities or cold room are such that cuttings or containers do not contact soil or other material harboring pathogens: *Yes* *No*
Grading	Is grading done during harvest? Yes No If No, is Grading done in a separate room: *Yes* *No*
	If YES, grading facilities satisfy same conditions as greenhouses with respect to: Wash Stations: *Yes* *No* Hand Washing: *Yes* *No* Footbaths: *Yes* *No* Protective Clothing: *Yes* *No* Personal Hygiene: *Yes* *No* Tools: *Yes* *No* Handling of Cuttings: *Yes* *No* Floors: *Yes* *No* Production Surfaces: *Yes* *No* Water Treatment: *Yes* *No* Training Personnel: *Yes* *No*
	Table/counter surfaces surface disinfested between bags or baskets of cuttings processed: *Yes* *No*
7: Growing Medium	

Type	APHIS-approved growing medium (*e.g.* Scoria or Volcanic rock): *Yes* *No* If no, describe media: Potting mix soil-less: *Yes* *No* Describe:
Safeguarding	Media and pots are stored on soil/dirt or turf surfaces: *Yes* *No*
Sterilization	Media is sterilized: *Yes* *No* Method (Check one): □ Steam (one hour after all ten sensors reach 80˚C) □ Fumigation: Methyl Bromide (3g/liter for 72h @ ≥70˚F) or Vapam 3% (equivalent to 50 ml per bag covered for 72 hours) Media is fumigated on a non-porous surface? Yes No
Containers	*Plastic pots* *Plastic bags* Are pots/bags new each year? *Yes* *No* FOR POTS ONLY: If No, then describe how and when they are disinfected:

8: Water Treatment

Source	Municipal: *Yes* *No* Deep, Sealed Well: *Yes* *No* Other:
	If water is stored, is storage such that there is no opportunity for water to be contaminated by native soil or plant material/debris *Yes* *No* If "other" water source, indicate treatment: Reed-bed filtration systems and slow sand filters <u>in combination with</u> one of the following: • Ozonation (0.4 ppm residual ozone for ≥4 minutes) • Ultraviolet irradiation (300J/m2 UV @ 254 nm, ≥ 50% transmission) • Peroxygen products (residual level ≥ 4mg / liter per acetic acid for 2 min) • Chlorine dioxide (residual level ≥ 0.1 mg / liter chlorine dioxide for ≥ 2 min)
	Independent backup water treatment system in place in case primary system fails: *Yes* *No*
	Is there a log of any breaches in irrigation system kept on site? *Yes* *No*

Detailed description of water treatment:

9: Survey and Detection

Pest/pathogen of concern	List of pests/pathogens of concern specifically targeted for monitoring by testing and/or visual inspection in the facility pest management plan: Water testing for pathogens of concern: *Yes* *No*

Diagnostics	What testing methods, if any, are used (*e.g.*, ELISA, PCR, microscopy): Tests conducted at approved/certified: In-house laboratory *Yes* *No* NPPO laboratory *Yes* *No* Third party laboratory *Yes* *No* Other: Tests conducted by, or under the supervision of, the plant protection organization of the country of origin or their designee: *Yes* *No* Records available for inspection: *Yes* *No*
Sampling	Production stages sampled: Nuclear/Foundation stock (G1): *Yes* *No* Sampling rate: Increase block (G2 or G3): *Yes* *No* Sampling rate: Production block (G4): *Yes* *No* Sampling rate: Sampling done prior to first shipment and throughout shipping season: *Yes* *No* Plants scouted regularly for signs of pests; suspects tested as necessary: *Yes* *No* Any plants discarded for any reason (except when all plants destroyed at end of season) tested prior to destruction: *Yes* *No*
10: Training	
Employee Training	Number of Employees on site (Maximum during peak season): There is a training program covering proper greenhouse procedures: *Yes* *No*

	Description: How often is training provided? (note all that apply) *Annual* *Monthly* *Bimonthly* *Weekly* Other: A list of trained personnel is maintained: *Yes* *No* List the last date of training conducted: Access to greenhouses is limited to trained and certified individuals: *Yes* *No* Facility maintains record of training of personnel and certifications: *Yes* *No*

11: Summary, Corrective Action Requests and Follow-up	
Observations and Summary	
Corrective Actions and Follow up	*Please list and deficiencies noted, recommendations for resolution, corrective actions and agreement on follow up (complete Corrective Action Request (CAR)), if available:*

I have reviewed and agreed with the above and will immediately resolve outstanding issues detected:

APHIS Inspector: _____ Email: _____ Date:_____

NPPO Inspector: _____ Email: _____ Date: _____

Production Manager: _____ Email: _____ Date: _____