CANADIAN FOOD INSPECTION AGENCY 59 Camelot Drive Ottawa, (Ontario), Canada K1A 0Y9 (Tel: 613-225-2342; FAX: 613-773-7204)	**D-08-05** **EFFECTIVE DATE** **February 18, 2011** **(2nd Revision)**
Title: Canadian Fruit Tree Export Program (CFTEP) for *Malus, Pyrus, Chaenomeles, Cydonia* and *Prunus* spp.	

SUBJECT:

This directive contains the requirements for the production of fruit tree nursery stock of *Malus, Pyrus, Chaenomeles, Cydonia* and *Prunus* spp. for export, including ornamental species. This program uses a systems approach in order to produce virus tested fruit tree nursery stock.

This directive has been amended to include the list of approved Canadian facilities and to update the internet link in Appendix 8 : List of fruit tree pests. Updating this link was required because the North American Plant Protection Organization (NAPPO) Regional Standard for Phytosanitary Measures (RSPM) #25 has recently been superceded by RSMP #35 Guidelines for the Movement of Stone and Pome Fruit Trees and Grapevines into a NAPPO Member Country

Canada

Table of Contents

Review

This directive will be reviewed every five years unless otherwise needed. . For further information or clarification, please contact the CFIA.

Endorsement

Approved by:

Chief Plant Health Officer

Amendment Record

Amendments to this directive will be dated and distributed as outlined in the distribution below.

Distribution

1. Directive mail list (Regions, PHRA, USDA)
2. Provincial Government, Industry determined by Author)
3. National Industry Organizations (determined by Author)
4. Internet

Introduction

The international trade of fruit trees is considered to be a high risk pathway for the movement of plant pests. Viruses and virus-like organisms are very common in the production of fruit trees. While some viruses are known to have a minor impact on infected trees, other viruses can cause very serious diseases and can lead to major crop losses (eg. Plum Pox Virus). Orchard trees that have been infected by viruses, and most other virus-like organisms, cannot be cured. The only way to remove a virus from an orchard or a block of nursery trees is by destroying the infected host plants and by replanting with tested, clean trees. A virus certification program, like the one described in this document, which is based on the propagation of trees using nuclear material (called G1 in this document) that has been thoroughly tested is the only way to produce nursery trees that are free of viruses and other virus-like organisms.

The virus certification program described in this document uses a systems approach in order to produce virus tested fruit tree nursery stock. Various independent components such as virus-testing, field inspection, isolation distances, and vector control, all work together to minimize the presence and the spread of viruses.

The CFIA can certify fruit stock for export to a country that has import requirements within the testing and production standards contained in this directive. To qualify for export, the stock must also meet the importing country's requirements for freedom from other regulated pests.

Note: Material susceptible to Plum Pox Virus (PPV) must not have been produced in areas where PPV is known to occur or where PPV is under eradication. Please see CFIA regulatory directive D-99-07: "*Policy for Importation from the United States and Domestic Movement of Plum Pox Virus (PPV) susceptible Prunus* Propagative Plant Material" and the North American Plant Protection Organization (NAPPO) RSPM 18, "*Guidelines for Phytosanitary Action Following Detection of Plum Pox Virus*".

This program was developed in accordance with the International Standard for Phytosanitary Measures (ISPM) # 14: *The use of integrated measures in a systems approach for pest risk management*, and Regional Standard for Phytosanitary Measures (RSMP) #24: *Integrated Pest Risk Management Measures for the Importation of Plants for Planting into NAPPO Member Countries.*

The CFTEP is an audit based program which uses integrated pest risk management measures as the basis for the phytosanitary certification of fruit trees. The CFTEP is a stand-alone program, however, it is also designed to be compatible with the Canadian Nursery Certification Program (CNCP).

Further revisions of this directive are expected to :

- further harmonize the CFTEP with similar programs in the U.S.
- further harmonize the CFTEP with the Canadian Nursery Certification Program (CNCP) and provide nurseries interested in both the CNCP and the CFTEP with guidelines for a single, cohesive, streamlined program.

Scope This directive covers the requirements for participation in the CFTEP and is for the use of Canadian fruit tree producers, exporters, breeders, etc. and for CFIA staff involved in compliance with this directive.

References:

- D-83-44: "Plant Health Policy Relating to the Production of *Malus*, *Prunus* and *Pyrus* spp. For Export"
- ISO 8402:1994 Quality Management and Quality Assurance
- ISPM No. 5. *Glossary of phytosanitary terms*, FAO, Rome (updated annually)
- ISPM No. 14. *The use of integrated measures in a systems approach for pest risk management,* FAO, Rome, 2002
- NAPPO, 2004. Regional Standards for Phytosanitary Measures #18. *Guidelines for Phytosanitary Action Following Detection of Plum Pox Virus*
- NAPPO 2009. *Regional Standards for Phytosanitary Measures #35. Guidelines for the Movement of Stone and Pome Fruit Trees and Grapevines into a NAPPO Member Country*

- NAPPO, 2005. Regional Standards for Phytosanitary Measures #24. *Integrated Pest Risk Management Measures for the Importation of Plants for Planting into NAPPO Member Countries.*

This directive supersedes D-83-44 dated December 21, 1983 and D-08-05 (1st Revision).

Definitions, Abbreviations and Acronyms

Definitions for terms used in the present document can be found in the Plant Health Glossary of Terms at www.inspection.gc.ca/english/plaveg/protect/dir/glosterme.shtml

1.0 General Requirements

1.1 Legislative Authority

The Plant Protection Act, S.C. 1990, c.22
The Plant Protection Regulations, SOR/95-212
*Canadian Food Inspection Agency Fees Notice, Canada Gazette, Part 1 (*as amended from time to time*)*

1.2 Fees

The CFIA is charging fees in accordance with the *Canadian Food Inspection Agency Fees Notice.* Anyone requiring other information regarding fees may contact any local CFIA office or visit us at our Fees Notice Web Site : http://www.inspection.gc.ca/english/reg/cfiaacia/feesfrais/feesfraise.shtml.

1.3 Pests Covered by the CFTEP

Fruit trees are a pathway for the movement of a number of serious pests; therefore, plants produced under the CFTEP must originate from mother plants that have been tested by the CFIA for, and found to be free from viruses and virus-like pathogens of concerns. A list of significant fruit tree pests that are covered under this program, as determined by the NAPPO Standard No. 35, is available at the following link: http://www.nappo.org/Standards/Standards(all)/RSPM35-19-10-09-e.pdf

Virus-testing methods follow closely those recommended by the International Symposium on Virus and Virus- like Diseases of Temperate Fruit Crops, which is published every three years in the journal *Acta Horticulturae*. Contact the CFIA's Sidney Laboratory-Plant Viruses and Virus-like Diseases, British Columbia (B.C.) for a list of the virus-testing methods currently authorized or for details regarding specific testing methods.

1.4 Regulated Commodities

All propagative plant parts of the genera *Malus, Pyrus, Chaenomeles, Cydonia* and *Prunus* spp. intended for export.

2.0 Specific Requirements

2.1 Program Participation

In order to export *Malus, Pyrus, Chaenomeles, Cydonia* and *Prunus* spp. nursery stock to the countries listed in Appendix 5, the material must be produced under the CFTEP. Please note that some countries may have additional import requirements, beyond the requirements of the CFTEP. Please Contact your local CFIA office for more information. A list of the CFIA area and regional offices is available at: http://www.inspection.gc.ca/english/directory/offbure.shtml.

Facilities intending to participate in the CFTEP must submit a complete application package to the local office of the CFIA by August 31st of the calendar year prior to planting. In subsequent years, a participant in good standing is not required to re-apply. If the participant withdraws, or is removed from the program, another application will be required for re-entry into the program.

To become an approved facility, the facility must:

- be located in Canada;
- complete and sign an Application for Authorization under the CFTEP for *Malus, Pyrus, Chaenomeles, Cydonia* and *Prunus* spp. Nursery Stock (see Appendix 1) indicating that the applicant is willing and able to comply with the terms and conditions of the CFTEP;
- develop a written Pest Management Plan (PMP) (please see Appendix 2 for a checklist of items that must be included in the PMP), that clearly describes the procedures or processes designed to control a pest population to a level that meets the phytosanitary standard. The plan for the facility must meet the requirements described in section 2.3, and must describe an internal system being implemented to verify compliance;

- designate a qualified individual to be the Pest Control Manager (PCM). The PCM is vested with the authority and responsibility to develop and implement a quality management system that meets the requirements of the CFTEP. The PCM may designate qualified personnel or contractors to assist in developing and implementing different components of the quality management system such as: pest management, record keeping and administration;

- develop a quality management system to meet the administrative, plant identification and record-keeping requirements of the CFTEP (See section 2.4 of this directive for instructions regarding records requirements of the CFTEP);

- complete a Facility Inventory Declaration that includes the varieties to be planted, their origin, the class of plantings, the total area to be planted, the field/block history for the past two years and the location of the fields/blocks to be planted, Universal Transverse Mercator grid reference (system of numerical coordinates to identify any point on the earth's surface) where possible, range road or lot and concession number, etc. as appropriate. Please see Appendix 4 for the Facility Inventory Declaration. Growers inventory records can be used instead of Appendix 4 provided they contain the same information;

- prepare a clear and detailed map of the facility indicating anticipated cultivar locations;

- submit the completed signed application form and a copy of the facility's PMP to the nearest CFIA Regional Office;

- work with a CFIA Regional Program Officer-Lead Auditor to undertake a Facility Evaluation (see section 2.1.1.2 of this directive).

2.1.1 Approval Process

2.1.1.1 Document Review

To finalize approval to become an approved facility :

- the CFIA RPO must review the Application for Authorization under the CFTEP;

- the CFIA RPO must review the PMP.

2.1.1.2 Facility Evaluation

Following the approval, the facility will be evaluated as follows:

- the CFIA RPO-Lead Auditor will conduct a Facility Evaluation inspection;

- the CFIA RPO-Lead Auditor will prepare a Facility Evaluation Report, which will be provided to the facility for their records.

2.1.1.3 Registration

Following a successful facility evaluation:

- a unique registration number will be assigned to the approved facility;
- the facility will be listed in a central public registry on the CFIA website. Appendix 6 lists the Canadian facilities that are currently approved under the CFTEP.

2.1.1.4 Registration Transfer from the Previous Export Program or to a New Owner

a) Approved facilities that are being transferred from the D-83-44 export program to the CFTEP.

Inspection, sampling and testing shall continue according to the new CFTEP program. A starting point will be established based on the last date of sampling and testing under the previous program.

b) Facilities that are approved under either the D-83-44 program or the CFTEP and have been transferred to a new owner.

A new owner of an approved facility shall:

- complete and sign a new Application for Authorization under the CFTEP for *Malus*, *Pyrus*, *Chaenomeles*, *Cydonia* and *Prunus* spp. Nursery Stock (see Appendix 1) indicating that the applicant is willing and able to comply with the terms and conditions of the CFTEP;
- complete all the steps outlined in section 2.1;
- either develop a new, or update the previously written PMP to ensure that it clearly describes the PMP for the facility, meets the requirements described in section 2.3, and describes an internal system to verify compliance. Please see Appendix 2 for a checklist of items that must be included in the PMP;
- develop a new, or update the previous quality management system to meet the administrative, plant identification and record-keeping requirements of the CFTEP. (See section 2.4);

Inspection shall be carried out at least twice in the first year of ownership by the new owner, and thereafter as described under this program. Sampling and testing shall continue according to the new CFTEP program, with a starting point based on the last date of sampling and testing carried out in the block while registered with the previous owner.

2.2 Certification Levels

All propagative material produced under this program must be derived from 1st generation stock, and grown under conditions that mitigate the risk of re-infection. Generation 1 level material is produced at the CFIA Sidney Laboratory in Sidney, BC, or other facilities approved in writing by the CFIA. The accession numbers relating to the plants tested at the CFIA Sidney Laboratory or other approved facilities must be retained for tracking purposes. At each stage of propagation, progeny plants drop to a lower certification level. The four certification levels are:

Generation 1 (G1) - **(Synonym : Nuclear stock)** Original mother plants tested for the viruses of concern by the CFIA Sidney Laboratory or a facility approved by the CFIA. The tests are done according to internationally accepted standards, and the plants are maintained in isolation. Example: by tissue culture or in a sealed screen house (requirements available upon request) or other secure structure approved in writing by the CFIA, and grown in accordance with the requirements of this directive.

This material must continue to be monitored for symptoms of viruses and tested as required by the CFIA.

Generation 1A (G1A) - **(Synonym : Pre-elite)** Material propagated from G1 mother plants and maintained in a fashion to mitigate the risk of re-infection or contamination, ie. as tissue culture or in a CFIA approved screen house, or some other secure structure approved in writing by the CFIA, and grown in accordance with the requirements outlined in this directive.

Generation 2 (G2) - **(Synonyms : Elite, Primary increase block)** Material must be propagated from G1 mother plants and grown in accordance with the requirements in section 2.3.2 of this directive.

Generation 3 (G3) - **(Synonyms: Foundation, Secondary increase block)** Material must be propagated from G1 or G2 mother plants, grown in accordance with the requirements in section 2.3.2 of this directive.

Generation 4 (G4) - **(Synonyms : Certified, Nursery block)** Material must be propagated from G1, G2 or G3 mother plants, grown in accordance with this directive. This is material most often grown for retail sale, ie. wholesale and retail nurseries.

2.3 Production Requirements

2.3.1 Requirements Applying to all Genera and all Certification Levels

2.3.1.1 Planting Sites

All planting sites, regardless of the level of certification, must be clean cultivated or planted with an approved cover crop (*Poaceae* (*Gramineae*) such as perennial rye grass - *Lolium perenne,* Italian rye grass - *Lolium multiflorum* or *Brassica* such as canola - *Brassica napus*) or other crop approved in writing by the CFIA in which broad-leaved weeds are actively controlled.

Planting sites should be selected to minimize contamination by virus-vectoring nematodes from surrounding land, through drainage, flooding, irrigation, or other means. Sections 2.3.2 and 2.3.3 of this directive outline the buffer zone requirements in relation to plantings. Refer to Appendix 3 of this directive for the CFIA sampling procedures for nematodes.

Material that is not regulated under the CFTEP but that may be a host of the pests regulated under the CFTEP should be located as far as possible from plantings of CFTEP approved material. Minimum distances are described in sections 2.3.2 and 2.3.3.

Expansion of blocks at planting sites is possible upon request. All of the requirements necessary for authorizing a new block must be met. The expanded block must be contiguous with the original block. Rootstock used in the expansion must originate from CFTEP approved material that was produced in the previous generation. For example, expansion of a G3 block requires the use of rootstock produced at a G2 level. Budwood or grafts may be taken from the block that is being expanded, eg. G3 or from a previous generation eg. G2 mother block (See 2.3.1.6 for an exception when using true seedlings). Sampling and virus testing of the expanded section of the block must be conducted on the same schedule as the original part of the block.

For information regarding the detection of a quarantine pest in relation to planting sites, please see section 2.8 of this directive.

2.3.1.2 Pest Management

Regular treatment schedules, or other pest management strategies, must comply with provincial recommendations and treatments must be applied to control potential virus vectors, e.g. aphids, mites, leafhoppers, etc. Records of spraying or other pest management actions must be maintained and made available to the CFIA inspector (designated pursuant to the *Plant Protection Act*) on request.

2.3.1.3 Nematode Testing

Prior to approval of a new facility, all planting sites, including the buffer zone (see Sections 2.3.2 and 2.3.3 for buffer zone requirements), must be sampled and found free of *Xiphinema* and *Longidorus* nematodes capable of transmitting nepoviruses, or fumigated in a manner that has been approved by the CFIA. If the CFIA inspector is not present at the time of fumigation, a certificate of application from a registered fumigation applicator must be retained by the grower as proof of treatment for CFIA reference.

Soil sampling must be conducted, as directed in Appendix 3 of this document, under the supervision of a CFIA inspector. Any analysis of soil samples for nematodes must be carried out by CFIA's Ottawa Laboratory (Fallowfield), or a laboratory authorized by the CFIA.

All planting sites that have been previously used under D-83-44 will be automatically transferred to and certified under the CFTEP.

New planting sites

New planting sites for **all certification levels** must be either fumigated or inspected and soil samples must be collected and analysed for the presence of virus vectoring nematodes prior to planting according to the requirements applicable to the appropriate certification level. Registration may be granted only after this has been completed and approved. If virus vectoring nematodes are found, the block must be fumigated in a manner that has been approved by the CFIA. Refer to Appendix 3 for information about sampling procedures.

Established CFTEP Blocks

Follow-up nematode testing of established blocks is suggested but not required under the CFTEP.

2.3.1.4 Sanitation and Cultural Practices

Operators must take steps to ensure that tractors and other equipment used in the CFTEP approved block are free of soil prior to entering the block. Suitable precautions must be taken to prevent the introduction of pathogen-vectoring nematodes, which may be associated with soil and could be moved into the CFTEP blocks with cultivation or spray equipment.

Production maintenance activities must be planned so that workers start with the highest fruit tree certification level block and proceed downwards through the lower levels, e.g. G2 to G3 to G4 to non-CFTEP plants in order to minimize the movement of potentially virus infected nematodes from lower level blocks with less stringent isolation and control measures to higher level blocks.

2.3.1.5 Block/Field Monitoring

The PCM must monitor the approved block for visual symptoms of viruses and other diseases at least once a month during the growing season. Records of these inspections must be kept, including the name of the person who performed them, the dates inspected, area monitored and the results of the monitoring. If signs or symptoms of a virus or other pests of significance are found during these visual inspections, the CFIA must be contacted immediately.

2.3.1.6 True Seedlings

True seedlings are plants that were propagated from seed rather than by clonal or vegetative propagation. Seedling rootstock can be used to propagate plants at any certification level. If true seedling rootstock is used for propagation, they must be grown according to the requirements listed throughout this directive such as isolation distances, nematode testing etc.

Pome fruit (*Malus, Pyrus, Chaenomeles*, and *Cydonia* spp.) seedling can be produced using seed that originate from any source in the world.

Due to the prevalence of pollen and seed transmitted viruses, ***Prunus*** seedling must be produced from seed harvested from G1, G2 or G3 mother trees that have tested negative for the pollen/seed-transmitted ilarviruses.

2.3.1.7 Identifying Marks

The RPO-Lead Auditor and the facility PCM must agree upon appropriate labels for the facility. The labels must be weather resistant and must distinguish material grown under the CFTEP from other types of material. The PCM must notify the RPO-Lead Auditor in advance if the facility wishes to modify the labeling system.

a) **Trees Planted in the Ground**
In a row of trees in which every plant consists of the same cultivar/rootstock combination, the trees at both ends of the row must be labelled to identify the cultivar/rootstock combination of that row. When more than one combination is planted in a row, each cultivar/rootstock combination must be clearly labelled within the row.

b) **Trees in Pots or Pot-in-Pot Systems (containerized material)**
Each potted G4 tree must be clearly identified to reflect its certified status and the cultivar/rootstock combination. A typical weather-resistant label attached directly to the tree and bearing that information is recommended however any weather-resistant identification method (stickers, paint, pot colour, rubber tape, etc) approved by CFIA may be used. If another identification method other than labels is used then the facility's records must include the required information and link it to the chosen identification method.

c) **Harvested Stock**
Harvests of individual trees, bundles or crates must be labeled in such a way that they can be clearly separated from material not in the CFTEP.

2.3.2 G2 and G3 Specific Requirements

2.3.2.1 G2 and G3 Specific Requirements for All Genera

Regrafting (repeating a graft or budding that has failed on a rootstock or young tree) or top working (the process of converting an established tree to a new variety by grafting multiple scions onto the main scaffold limbs of the tree) of plants in G2 and G3 mother blocks is not permitted, unless the propagative material being used is from a higher certification level.

Planting sites on which fruit trees or other Rosaceae species originating outside this certification program, or grapevines were previously grown, cannot be used for planting G2 or G3 blocks for two years after removal of these crops.

2.3.2.2 G2 and G3 Specific Requirements for *Malus, Pyrus, Chaenomeles* and *Cydonia*

Buffer Zone

Buffer zones are necessary to reduce the chance of infection by naturally transmitted viruses. G2 and G3 blocks must be separated from other non-certified material by a minimum of 8 metres. The buffer zones must be clean cultivated or planted with an approved cover crop or the buffer zone may be planted with virus tested Rosaceae or *Vitis* plants, or other woody plants such as conifers, that are not hosts to fruit tree viruses. Please contact your CFIA office for more information on approved woody plants.

Virus Testing

Follow-up virus testing of *Malus, Pyrus, Chaenomeles* and *Cydonia* material is not required.

2.3.2.3 G2 and G3 Specific Requirements for *Prunus*

Buffer Zone

Buffer zones are necessary to reduce the chance of infection by pollen-borne and naturally transmitted viruses. G2 and G3 blocks must be separated from other non-certified *Prunus* material by a minimum of 30 metres. *Prunus* seed trees must be separated from other non-tested *Prunus* material by a minimum of 100 metres.

Existing CFTEP qualified blocks which were planted using the buffer zones required under the previous directive may continue to be used for the remainder of their productive life.

The above mentioned buffer zones must be clean cultivated or planted with an approved cover crop, or the buffer zone may be planted with virus tested Rosaceae (except *Prunus*) or *Vitis* plants, or other woody plants that are not host to fruit tree viruses such as conifers.

Virus Testing

All G2 and G3 *Prunus* material (scion blocks, hedgerows, seed trees, etc) must be tested at least every two years for the pollen transmitted ilarviruses (Prunus necrotic ringspot virus and Prune dwarf virus), and at least every three years for Plum pox virus (except cherry spp.). The ilarvirus testing can be done by inoculation to Shirofugen cherry at the grower's premises under the supervision of an inspector or by laboratory tests at the CFIA Sidney Laboratory or a laboratory approved by CFIA.

Stoolbeds and hedgerows that do not flower are exempt from ilarvirus testing, but must still be tested for PPV.

Deblossoming

It is suggested that the trees be deblossomed, either by hand or by chemical spray, to reduce the spread of pollen-borne viruses.

2.3.3 G4 Specific Requirements

2.3.3.1 G4 Specific Requirements for all Genera

Planting sites on which fruit trees or other Rosaceae originating outside this certification program, or grapevines were previously grown, cannot be used for planting G4 blocks for two years after removal of these crops. Alternatively, these plants can be treated with a systemic herbicide, followed by removal of the treated host plants. This must be followed by a fallow period of one growing season.

Virus Testing

Follow-up virus testing of G4 material is not required

2.3.3.2 G4 Specific Requirements for *Malus, Pyrus, Chaenomeles and Cydonia*

Buffer

Approved planting sites must have a two decimal five (2.5) metre buffer zone separating CFTEP fruit trees from fruit trees not in the CFTEP. The buffer zones must be clean cultivated or planted with an approved cover crop. Alternatively the buffer zone may be planted with woody plants, such as conifers, that are not hosts to fruit tree viruses. Please contact your CFIA office for more information on approved woody plants.

2.3.3.3 G4 Specific Requirements for *Prunus*

Buffer

Approved planting sites must have a two decimal five (2.5) metre buffer zone separating CFTEP fruit trees from fruit trees not in the CFTEP. The buffer zones must be clean cultivated or planted with an approved cover crop. Alternatively, the buffer zone may be planted with woody plants, such as conifers, that are not hosts to fruit tree viruses. Please contact your CFIA office for more information on approved woody plants. It is suggested that G4 level *Prunus* trees be planted at least 30 m away from non-CFTEP *Prunus* trees to mitigate infection by pollen-borne and naturally transmitted viruses.

2.3.3.4 Specific Requirements for the Production of Containerized *Malus, Pyrus, Chaenomeles, Cydonia,* or *Prunus spp.*

Only G4 material may be containerized. Containerized *Malus, Pyrus, Chaenomeles, Cydonia,* or *Prunus* spp. must meet all the requirements of this program as outlined in this document, and the specific containerized requirements outlined below must also be followed:

a) Soil and growing media

i. Use of soil-free growing media

The growing media to be used in containers must consist of soil-free material, including but not limited to: expanded or baked clay pellets; ground coconut husks, coffee hulls, cocoa pods or rice husks; peat; perlite, pumice, sawdust, sphagnum, vermiculite or bark. The components of the growing media must not have been previously used for growing plants or for other agricultural purposes. The components of the growing media must be mixed and maintained under conditions which preclude soil contamination or contamination by water runoff. At the inspector's discretion, samples of the media may be taken to verify the absence of soil and/or nematodes.

The above list of growing media is not exhaustive. Other growing media may be used if approved by CFIA.

ii. Use of soil

Soil may be used for containerized plants but the soil must be tested and found free of *Xiphinema* and *Longidorus* nematodes capable of transmitting nepoviruses, or fumigated prior to planting. Other treatments may also be used if approved by CFIA. The soil must also be sieved to remove any significant root debris.

Note: Please note that further restrictions for other soil pest (ex.: Japanese Beetle or Apple Maggot regulated areas) may apply regarding the use of soil for containerized plants, for domestic movement or export to the U.S. Please contact your local CFIA office for more information.

b) Barriers to prevent soil contamination

For containerized plants grown in nursery blocks, the containers must be set on a barrier which prevents direct soil contact, such as a plastic, hard packed clay, pavement, or a minimum of five centimetres of coarse gravel. The site must be located to preclude soil contamination, either directly or through water runoff from drainage, flooding, irrigation or other means eg. raised, or protected by dams or drainage ditches.

c) Buffer zones

i. Buffer zones for containerized *Prunus* material grown outdoors and produced under this program shall be the same as required for non-containerized *Prunus* material grown under this program, to reduce the chance of infection by pollen-borne and naturally transmitted viruses.

ii. Buffer zones are not required for containerized *Malus, Pyrus, Chaenomeles* and *Cydonia*.

2.4 Records Requirements

A participating facility must maintain records on its premises. These records include:

a) records indicating the quantity, Latin (botanical) name, variety, rootstock, origin, date of introduction of fruit stock to the facility, date of propagation, field, nursery row planting and accession number. These records must be kept at the nursery for seven years after the trees have been sold or removed. The use of appendix 4, Facility Inventory Declaration, for these records is suggested. Growers inventory records can be used instead of Appendix 4 provided they contain the same information. Records must be updated to include material planted since the last systems audit inspection.

b) the Facility Inventory Declaration must be updated whenever new material is planted or new blocks are established.

c) records of sale or plant movement, export invoices, export certification requests and copies of Phytosanitary Certificates issued. The records must list all fruit stock exported under the CFTEP. These records must be kept at the nursery for seven years.

d) data collected from monitoring, control or eradication and surveillance activities. These records must be kept at the nursery for two years.

e) any cultural and treatment records including planting dates, spray records deblossoming, cultivation, virus monitoring, bud collecting, grafting and regrafting, quantities, etc. These records must be kept at the nursery for two years.

f) maps of the facility indicating planting blocks. These records must be kept at the nursery for seven years

All records must be maintained and retained in a manner so as to prevent accidental loss.

Upon request, records are to be made available to the CFIA. Failure to produce these records in a timely manner may jeopardize certification status.

2.5 Export of Non-CFTEP Origin Material to the United States

To obtain phytosanitary certification for the export of G4 nursery plants to the U.S. when the plant material or components of the plant material (e.g. rootstock) did not originate in Canada, the following requirements apply:

a) the fruit tree nursery stock must originate from a United States Department of Agriculture (USDA) recognized certification program (e.g. approved state programs) or USDA approved nursery scheme (e.g. certain European countries), that are also approved by CFIA for import into Canada.

b) the fruit tree nursery stock must be planted and maintained according to the G4 requirements of this program.

c) material imported from approved foreign sources may be self-rooted, grafted, or budded and grown in Canada under the Generation 4 requirements. The plants may be exported to the U.S. if they meet the U.S. import requirements. As specified by the USDA requirements 7 CFR 319.37-5(b) the following declaration, with respect to the virus and virus-like pests, can be used on the phytosanitary certificate : "*The requirements of 7 CFR 319.37-5(b) have been met*". Any U.S. requirements for other pests must also be met before this declaration can be used. Although the parent stock of the re-exported plant material is not indexed in Canada, it will have been indexed in a U.S. approved or authorized program that is eligible for export to Canada.

For material that originates in an approved European country:
In order to meet the post-entry requirements of 7 CFR 319.37-7 for material that originates in an approved European country, the material must be grown for a minimum of two (2) growing seasons under the CFTEP before becoming eligible to be exported to the US**.**

d) except as described above in c), this imported material cannot be further propagated and re-exported to the U.S.

e) other import requirements for regulated pests not dealt with under this program, must also be met.

2.6 CFIA Inspection and Testing Requirements

The CFIA will conduct one systems audit inspection per year and a minimum of one surveillance audit inspection during the production season at a time when disease expression can be observed in the plant material. Audit inspections will take place at a time agreed to by CFIA and the approved facility. Facility management representation during the audit is recommended.

The systems audit inspection will be led by a qualified CFIA RPO-Lead Auditor, who will be accompanied by another RPO-Auditor or an inspector with audit training. The systems audit inspection is a review of the organizational structure, procedures, processes and resources used in implementing the CFTEP in the designated facility. This inspection will assess all system elements of this policy using the checklists in Appendix 2 and may include a hands-on product and/or block/field inspection for viral symptoms or other regulated pests.

The surveillance audit inspection will be performed by an RPO-Lead Auditor or an inspector with audit training. The surveillance audit inspection involves an inspection of the plant material, culture of plant material, and documents in the facility to ensure that these conform to the requirements of the CFTEP.

All G2, G3, and G4 blocks must be inspected by a CFIA inspector at least once during each growing season, and at other times as deemed necessary by the inspector to ensure that the program requirements are met. The inspection includes the stock, the land, and any associated documentation.

If an inspector suspects that material may be infested with a regulated pest, samples of plant parts or the soil surrounding the plants may be taken and tested, at the facility's expense, in order to ensure that the approved block continues to meet the requirements of this program.

2.6.1 Testing requirements

Any testing for viruses, virus-like diseases, phytoplasmas or viroids must be carried out by the CFIA's Sidney Laboratory or a laboratory authorized by the CFIA. Any testing for pests other than viruses must be carried out by the CFIA's Ottawa Laboratory (Fallowfield) or a laboratory authorized by the CFIA. All testing for pests and diseases will be at the expense of the approved facility. For more information on the testing procedures, please contact CFIA's Sydney Laboratory or Ottawa Laboratory (Fallowfield).

2.7 Non-Compliance, Suspension or Cancellation of Registration

The CFIA reserves the right to suspend a facility from the CFTEP if any non-compliance is found that threatens the integrity of the program. Elements of the program of a non-critical nature which are evaluated as not in compliance during the facility surveillance or systems audit inspection must be corrected within a timely fashion, as determined in consultation with the RPO-Lead Auditor.

The program does not limit the regulatory actions which may be taken in response to violations of the *Plant Protection Act*. The PCM must attend the Facility Evaluation and annual systems audit inspection and is responsible for ensuring appropriate corrective actions are undertaken.

The RPO-Lead Auditor must, based on the recommendation of the audit inspection team, determine if the facility should be removed from the program, and must notify the facility by issuing a written notice that it is no longer able to export plants. In addition, the facility must be informed in writing of the corrective actions required for compliance.

Non-compliance with any requirements in this directive may result in the registered status of the block or facility being cancelled or suspended until corrective action has been undertaken. Registration of a block may be suspended, at the discretion of the inspector, if tests are positive for any regulated virus or virus-like pest.

If corrective action is feasible, and is undertaken within one growing season, registration of a block may be reinstated. Any infected material and its progeny or parents will cease to be eligible for export under this program until pest freedom can be re-established and confirmed.

If corrective action is not feasible or is not undertaken within the growing season, CFTEP authorization of a block will be cancelled and the facility will be prohibited from shipping plants under the CFTEP.

Any plant material, infected or suspected of being infected with a graft transmissible regulated virus or virus-like organism, and its progeny or parents at subsequent or previous certification levels will cease to be eligible for export under this program until pest freedom can be re-established and confirmed.

2.7.1 Re -Registration for Blocks with Lapsed Registration

When a facility wishes to re-register a block with lapsed registration, the CFIA will evaluate the block on a case-by-case basis. The CFIA will only re-register such a block, if it is satisfied that the block meets the criteria for the requested level of authorization. Significant sampling and testing over a period of time, may be required before the CFIA is confident that the block meets the criteria.

2.8 Detection of a Quarantine Pest to Canada

If a quarantine pest to Canada is detected in an approved facility, the movement of plants domestically and internationally from that facility will be prohibited until the pest is eradicated or is under official control.

The CFIA inspector must notify the facility by a *Notice of Prohibition / Restriction of An Activity* that the facility is no longer able to ship regulated plants within Canada or to any country in which the pest is a regulated quarantine pest. In addition, the facility in question must be informed in writing of the corrective actions required for compliance. Depending on the severity of the pest infestation, the facility may be suspended from the CFTEP.

2.9 Corrective Actions

When appropriate corrective actions have been taken and the facility meets all the requirements of a Facility Evaluation and all other conditions of this directive, the RPO responsible for this facility may allow reinstatement in the program.

3.0 Appendices

Appendix 1	Application for Authorization under the CFTEP for *Malus, Pyrus, Chaenomeles, Cydonia and Prunus* spp. Nursery Stock
Appendix 2	Critical Elements for the Evaluation of the Application, Facility Declaration and the Facility Pest Management Plan.
Appendix 3	CFIA Sampling Procedures for Nematodes Capable of Vectoring Viruses of Fruit Trees
Appendix 4	Facility Inventory Declaration
Appendix 5	List of Countries Accepting Exports from the CFTEP
Appendix 6	List of Canadian Approved Facilities
Appendix 7	CFIA Audit Inspection Protocol
Appendix 8	List of Fruit Tree Pests

APPENDIX 1

Application for Authorization under the Canadian Fruit Tree Export Program (CFTEP) for *Malus, Pyrus, Chaenomeles, Cydonia* and *Prunus* spp. Nursery Stock

Name of Facility: _____

Location of Facility: _____

_____

Owner/Person having the possession, care or control of the facility:

_____

Pest Control Manager: _____

Address: _____

_____

_____

Telephone No.: _____ **Fax No.:** _____

Intended country(ies) of export: _____

Genera intended for the CFTEP: _____

_____

Conditions for Exporting Fruit Tree Nursery Stock under the CFTEP:

1. any facility intending to participate in the CFTEP must apply to the Canadian Food Inspection Agency (CFIA) for approval prior to August 31st of the calender year prior to planting.

2. only fruit tree nursery stock of *Malus, Pyrus, Chaenomeles, Cydonia* and *Prunus* spp., derived from a G1 mother plant tested in Canada or at a facility approved in writing by the CFIA, and produced according to the CFTEP requirements are eligible for export as Canadian approved material.

3. the participant must develop a systems approach that describes the processes used to address the requirements of this directive. A systems approach is defined as the integration of different pest management measures at least two of which act independently, and which cumulatively achieve the appropriate level of phytosanitary protection (ISPM 5).

4. pest management strategies, according to provincial recommendations, must be followed to control harmful organisms. The facility must describe the schedules they are following in their PMP.

5. records, as described in the CFTEP, must be maintained at the approved facility. Records must include the registration numbers of the facility that produced the plants, and a list of all suppliers providing plants and products for export. Maps indicating the location of the participating blocks within the facility must be maintained. Records of sale and distribution of the stock produced under the CFTEP must be maintained and kept for seven years. All records must be made available to the CFIA upon request.

6. any fruit tree nursery stock intended for export must be inspected by a CFIA authorized inspector prior to export.

7. appropriate measures must be taken to ensure that the plants to be exported are packaged and stored in a manner to preclude contamination by regulated pests and to remain practically free of other injurious pests.

8. CFIA must be notified immediately of any change in the identity of the Pest Control Manager at the facility and of any finds of significance (i.e. viral symptoms on plants, atypical or uncommon pest damage or symptoms are observed, when other regulated pests are suspected).

I agree to immediately suspend shipment of regulated commodities if notified by the CFIA that the designated facility is in non-compliance with the CFTEP. I will immediately notify the CFIA if viruses or any other regulated pests are found in the facility. I will allow the name and location of my facility to be included on a publicly accessible website list of nurseries approved under the CFTEP.

I, _____ the owner/person in possession, care, or control of the above named nursery have read and understood all the conditions and obligations stated herein by which I may export fruit tree nursery stock, *Malus, Chaenomeles, Cydonia, Pyrus,* and *Prunus* spp., in accordance with the CFTEP.

Dated _____, 20__ at _____,

Province of_____

Applicant's Signature_____

Pest Management Plan Approved by:

_____ _____
Regional Program Officer Date
CFIA

Facility Evaluation Completed and Facility Recommended for Participation by:

_____ _____
Regional Program Officer Date
CFIA

Approved for Participation in the Plant Protection Export Certification Program for fruit tree nursery stock, *Malus, Pyrus, Chaenomeles, Cydonia* and *Prunus spp.*:

Facility Registration Number		
Canadian Fruit Tree Export Program	**Province**	**Individual registration number**
F		

ex : F-ON-0021

Dated _____, 20__ at _____,

Province of_____

_____ _____
Regional Program Officer Date
CFIA

APPENDIX 2

Critical Elements for the Evaluation of the Application, Facility Declaration and the Facility Pest Management Plan

	ITEM	CHECK
1.	Has the facility developed and implemented a Pest Management Plan (PMP) that meets the requirements of the CFTEP.	
2.	Does the PMP describe, specify, all details (when, where, by whom, how, what is done if pests are found) the procedures for:	
2.1	examination of plant material entering an approved facility	
2.2	examination of production areas (Is there a map of the facility provided in the PMP?)	
2.3	examination of shipping areas and export shipments	
2.4	pest controls	
2.5	handling, storage and delivery areas	
2.6	ensuring that all pest finds are entered into a Pest Log and that the Pest Control Manager (PCM) and the CFIA are notified immediately of any pest finds of significance.	
2.7	ensuring that the persons designated to carry out particular components of the PMP are qualified to do so.	
3.	Does the facility has a system in place to ensure that only eligible nursery stock that complies with the requirements described in this directive is certified under the CFTEP.	
4.	Records management: (see section 2.4)	
4.1	Are they kept for 7 years?	
4.2	Is there a responsible person named?	
4.3	Do the records adequately record import and export examinations, verifications, corrective or preventive actions ordered, invoices, list of all suppliers providing plants and products, proof of Canadian or U.S. origin, export invoices, export certification requests and copies of Phytosanitary Certificates issued, data collected from monitoring, treatment, control or eradication and verification activities?	

APPENDIX 3

CFIA Sampling Procedures for Nematodes Capable of Vectoring Viruses of Fruit Trees

The following recommendations apply to the sampling of soil for the purpose of testing for the presence of virus-vectoring nematodes such as *Xiphinema* spp. and *Longidorus* spp. These are long, delicate, ectoparasitic nematodes. Sampling and handling techniques are designed to minimize nematode damage, to optimize recovery. Any questions regarding these procedures, including unusual situations where these procedures do not seem to apply, may be addressed by contacting the CFIA Nematology Laboratory. The contact information for the CFIA Nematology Laboratory is listed at the end of this appendix.

Composite Sampling: Soil samples shall be submitted as a composite sample of a minimum of forty (40) individual sub-samples obtained from sites of 0.2 hectares to 2 hectares, or of twenty (20) individual sub-samples obtained from sites of 0.2 hectares or less. Where sites are greater than 2 hectares, additional composite samples should be taken, such that each composite sample represents no more than a 2 hectare portion. For example, if the site to be sampled is 3 hectares, the area should be divided into two portions of 1.5 hectares each, and two, 40 subsample composite samples should be submitted. When large sites are divided in this manner, this must be noted on the label. (Sampling results from contiguous portions will apply to the entire site sampled). When possible, submit entire composite samples. Otherwise, mixing and subsampling of composite samples should be performed with care, ensuring root tissue is included.

Sampling Pattern: Sampling of fallow or cover crop, pre-planting sites should follow a structured pattern rather than randomly walking the block/field. For row crops, a zig-zag pattern along the rows, alternating between adjacent rows and collecting sub-samples within the drip line or root zone, is recommended. Nematodes are usually found in proximity to young host roots (including weeds).

Manner of Collection: Each soil sub-sample shall be collected using a soil core probe (or other similar device) of minimum dimensions 2.5 cm X 30 cm. Larger diameter probes, trowels or narrow shovels may be used, providing that all the sub-samples are collected in the same manner. The top two and a half to five centimetres of soil should be removed from the sample, since extreme environmental conditions render this portion of the soil inhospitable to nematodes.

Depth of Sampling: Nematodes will be found where moisture is adequate, and in association with young roots of host plants. Optimum depth of collection is usually 10 to 20 cm. Dry surface soil may be discarded. Sampling of established fruit trees may require sampling to depths of up to 90 cm. Root tissue from the fruit trees should be included with the sample.

Conditions for Sampling: Sampling should be carried out when the soil is moist but not overly saturated.

Conditions for Handling: Samples should be placed into polyethylene bags which are then sealed in order to keep the soil moist. It is important to protect from heat, freezing, and direct sunlight. Samples should be stored at approximately 10°C. Coolers should be used for temporary storage and transportation.

Conditions for Shipping Samples: Samples should be well cushioned for shipping. For example, sample bags could be cushioned with bubble packing or styrofoam chips, with cold (not frozen) gel pacs. Note that jarring or severe bumping of the samples can damage the nematodes sufficiently to seriously compromise recovery and identification.

Labelling: Each composite sample should be labelled with:

a) sample identification number
b) facility name and address
c) the collection date;
d) location of the collection site;
e) name and variety of the crop last grown in the soil;
f) name and variety of the crop currently growing or to be grown in the soil;
g) information identifying other samples taken from contiguous areas, when the total area has been subdivided for sampling and submission purposes.

Destination for Identification:

Ottawa Plant Laboratory, Nematology Lab
Canadian Food Inspection Agency
Ottawa Laboratory (Fallowfield)
3851 Fallowfield Road, Building 201
PO Box 11300
Ottawa, Ontario K2H 8P9

Telephone: 613-228-6698
Facsimile: 613-228-6676

APPENDIX 4

Facility Inventory Declaration

Facility Name:_____
Registration #_____
Pest Control Manager:_____
City: _____ Province:_____ Range or County:_____
Telephone No.: _____ Date: _____

Block / Field No.	Variety	Source	No. of ha	Gene-ration	Quantity Planted	Proposed Date of Planting	Block/Field History		Location of Field
							Previous Year	2nd Year Previous	

APPENDIX 5

List of Countries Accepting Exports From the CFTEP

- **United States**

APPENDIX 6

List of Canadian Approved Facilities

www.inspection.gc.ca/english/plaveg/protect/dir/cftepe.shtml

APPENDIX 7

CFIA Audit Inspection Protocol

Approval Process

Document Review

A CFIA Regional Program Officer (RPO) will review the Application for Approval under the CFTEP (Appendix 1) to ensure that the application is complete and signed. The RPO will also review the Pest Management Plan (PMP) and the quality management system to ensure that they contain all the required elements outlined in Appendix 2 and that it is sufficient to meet the requirements of the CFTEP. The RPO may require the facility to revise or rewrite their PMP or quality management system prior to proceeding to the next step in the approval process. Once the RPO has determined that the PMP and quality management system satisfy the requirements of this directive, the RPO will recommend that the facility undergo a Facility Evaluation.

Facility Evaluation

Once the RPO approves the application and the PMP, a CFIA audit inspection team will be established to carry out a Facility Evaluation inspection. The RPO-Lead Auditor will prepare a written Audit Inspection Report summarizing the findings of the Facility Evaluation. The purpose of a Facility Evaluation is to determine whether a facility has the infrastructure and staff in place to permit it to successfully implement its PMP and quality management system and to meet the requirements of the CFTEP.

Facility Registration

Once the Facility Evaluation has been completed and the RPO-Lead Auditor is satisfied that the facility has the capacity to effectively implement all the requirements of the CFTEP, the facility can be considered an approved facility. Each facility approved under the CFTEP will be assigned a unique registration number by the CFIA at the time of registration. The registration number will be composed of three letters and four numbers. The first letter of the registration number is always a 'F' and indicates that the shipment originates from a facility approved under in the CFTEP. The second two letters indicate the province where the approved facility is located, and the remaining digits are assigned by the Horticulture Section Assistant in a manner that ensures there is no duplication. For example, F-ON-0021, indicates that the approved facility is a participant in the CFTEP, is located in Ontario and is the 21st facility to be certified in that province. The registration number permits traceback to the particular approved facility where the fruit stock was produced. The RPO will advise the Horticulture Specialist and the individual who maintains the list of approved facilities on the CFIA website.

In addition, each facility certified under CFTEP will be listed in a central public registry on the CFIA website. This registry will be maintained by the Horticulture Section Assistant, CFIA, Ottawa. The RPO is responsible for providing the Horticulture Section Assistant with all updates to the registry. Separate facilities under autonomous management will each receive a unique registration number and will be authorized and inspected separately.

The CFIA public website will include the name(s) and address(es) of all approved facilities that are in compliance with the requirements of the CFTEP. Should a facility withdraw, or be suspended from the program, the facility's name and address will be removed from the central registry and the facility will not be permitted to export, or otherwise ship plant material under the CFTEP.

List of fruit tree pests

Fruit trees are a pathway for the movement of a number of serious pests. A list of pests has been developed within the following NAPPO Standard:

NAPPO 2009. Regional Standards for Phytosanitary Measures #35. Guidelines for the Movement of Stone and Pome Fruit Trees and Grapevines into a NAPPO Member Country

http://www.nappo.org/Standards/Standards(all)/RSPM35-19-10-09-e.pdf