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	<b>EFFECTIVE DATE</b>  <b>September 15, 2010</b> <b>(3<sup>rd</sup> revision)</b>
<b>Title:</b> Phytosanitary requirements for soil and related matter, and for items contaminated with soil and related matter	

## SUBJECT

This directive contains the plant protection requirements for soil and related matter, and for items contaminated with soil and related matter, excluding plants and plant parts.

*This revision does not include import requirements for soil and related matter in association with plants and plant parts. This information, along with the distributions of regulated soil pests and the additional declarations for soil pests, have been removed from this directive and can be found in directive D-08-04: Plant Protection Import Requirements for Plants and Plant Parts for Planting: Preventing the Entry and Spread of Regulated Plant Pests Associated with the Plants for Planting Pathway. Cleaning requirements have also been removed with this revision, as cleaning things contaminated with soil upon arrival in Canada are generally prohibited. Some limited exceptions may apply; contact the Canadian Food Inspection Agency for details.*

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**Review**

This directive will be reviewed every five years or when policy changes are necessary. For further information or clarification, contact the Canadian Food Inspection Agency (CFIA).

**Endorsement**

Approved by:

<hr/> Chief Plant Health Officer
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**Amendment record**

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

**Distribution**

1. Directive mail list (Regions, Plant Health Risk Assessment Unit, United States Department of Agriculture)
2. Provincial government, industry organizations (determined by author)
3. National industry organizations (determined by author)
4. Internet

**Introduction**

Soil is a high-risk pathway for the movement and introduction of pests. The position paper on soil movement signed on April 24, 2003 by the three member countries of North American Plant Protection Organization (NAPPO) describes the risks and complexities associated with soil and associated pests:

“Soil, as evidenced from the international restrictions and prohibitions concerning its movement, is considered to be a high risk pathway for spreading a wide range of pests including, but not limited to: bacteria, fungi, insects, nematodes and weeds. Numerous soil-borne pests can survive for many years, with or without suitable hosts. Some of these pests can be detected visually while the detection of others requires sophisticated diagnostics.”

The number and complexity of organisms in soil render assurances of freedom from pests of concern virtually impossible. As a result, strict phytosanitary measures in relation to soil are necessary in order to limit the risks of introduction and spread of significant soil-borne quarantine pests into Canada. Such measures are also required for matters related to soil which, by their nature, are indistinguishable from soil or highly likely to be contaminated with soil.

**Scope** This directive specifies the phytosanitary requirements for the import and domestic movement of soil and related matter. It includes requirements for soil and related matter, and for items contaminated with soil and related matter, such as logs/lumber, vehicles, equipment, tools and containers.

**References**

- ISPM 4: *Requirements for Establishment of Pest Free Areas*. FAO, Rome.
- ISPM 5: *Glossary of Phytosanitary Terms*, FAO, Rome.
- ISPM 10: *Requirements for the Establishment of Pest Free Places of Production and Pest Free Production Sites*. FAO, Rome.
- *NAPPO Position on Soil Movement*. 2003. NAPPO, Mexico City.
- *Plant Health Import Inspection Manual*. Policy and Programs Branch, Plant Health Biosecurity Directorate. CFIA, Ottawa.
- *Guidelines for Laboratory Submission of Imported Plants, Plant Pests and Related Materials*. Science Branch, Laboratory Operations. CFIA, Ottawa.
- D-97-04: *Application, Procedures, Issuance and Use of a Permit to Import under the Plant Protection Act*. CFIA, Ottawa.
- D-08-04: *Plant Protection Import Requirements for Plants and Plant Parts for Planting: Preventing the Entry and Spread of Regulated Plant Pests Associated with the Plants for Planting Pathway*. CFIA, Ottawa.
- D-01-06: *Canadian Phytosanitary Policy for Notification of Non-Compliance and Emergency Action*. CFIA, Ottawa.
- D-96-20: *Canadian Growing Media Program , Prior Approval Process and Import Requirements for Plants Rooted in Approved Media*. CFIA Ottawa.
- D-94-26: *Plant Protection Import Requirements for Roots for Consumption or Processing*. CFIA, Ottawa.

**This directive supersedes D-95-26 (2<sup>nd</sup> revision) and Operations Directive No. 003-2 (dated January 19, 1988).**

### **Definitions, abbreviations and acronyms**

Definitions for terms used in this document can be found in the *Plant Health Glossary of Terms* located at <http://www.inspection.gc.ca/english/plaveg/protect/dir/glosterme.shtml>

## 1.0 General requirements

### 1.1 Legislative authority

*Plant Protection Act*, S.C. 1990, c.22

*Plant Protection Regulations*, SOR/95-212

*Canadian Food Inspection Agency Fees Notice*, *Canada Gazette*, Part I (as amended from time to time)

### 1.2 Fees

The CFIA and the Canada Border Services Agency (CBSA) are charging fees in accordance with the *Canadian Food Inspection Agency Fees Notice*. For information regarding fees associated with imported product, please contact the National Import Service Centre at <http://www.inspection.gc.ca/english/imp/importe.shtml>. Anyone requiring other information regarding fees may contact any local CFIA office or visit our Fees Notice Web Site:

<http://www.inspection.gc.ca/english/reg/cfiaacia/feesfrais/feesfraise.shtml>.

### 1.3 Regulated pests

The following list names the major soil-borne quarantine pests regulated by Canada, for which specific requirements have been developed. This is not an exhaustive list of soil-borne regulated pests and is subject to change.

Alfalfa snout beetle, *Otiorhynchus ligustici* (L.)

Apple maggot, *Rhagoletis pomonella* Walsh

Blueberry maggot, *Rhagoletis mendax* Curran

Columbia root knot nematode, *Meloidogyne chitwoodi* Golden, O'Bannon, Santo & Finley

European brown garden snail, *Cornu aspersum* (Müller), syn. *Helix aspersa* (Müller)

Golden nematode, *Globodera rostochiensis* (Wollenweber) Behrens

Japanese beetle, *Popillia japonica* Newman

Pale cyst nematode, *Globodera pallida* (Stone) Behrens

Potato rot nematode, *Ditylenchus destructor* Thorne

Potato wart, *Synchytrium endobioticum* (Schlib.) Percival

Ralstonia (potato brown rot), *Ralstonia solanacearum* Race 3 (Smith) Yabuchi et al.

Ramorum blight and dieback (sudden oak death), *Phytophthora ramorum* Werres et al.

Soybean cyst nematode, *Heterodera glycines* Ichinohe

The *List of Pests Regulated by Canada* can be found at:

<http://www.inspection.gc.ca/english/plaveg/protect/listpespare.shtml>

## **1.4 Regulated areas**

Regulated areas include:

- all countries
- all areas of Canada regulated for soil-borne pest(s)

## **1.5 Commodities regulated under this directive**

Soil and related matter (in bulk, i.e., not in association with plants or plant parts). Appendix 1 provides a list of materials that are not considered to be soil and related matter.

Items contaminated with soil and related matter, such as logs/lumber, containers, equipment, blocks of stone, machinery, tools, vehicles, military equipment and vehicles, etc.

Commodities covered under this directive may also require approval and/or a Permit to Import under the *Health of Animals Act* and/or the *Fertilizers Act*. For information regarding requirements for products under the *Health of Animals Act* contact the Animal Health Directorate, Import/Export Section. For information regarding requirements for products under the *Fertilizers Act*, contact the Plant Health and Biosecurity Directorate of the CFIA.

## **2.0 Import requirements**

### **2.1 Soil and related matter (in bulk, i.e., not in association with plants or plant parts)**

The importation of soil and related matter from all countries is prohibited, except when imported under Section 43 of the *Plant Protection Regulations* for scientific research, education, processing, industrial or exhibition purposes (see Appendix 2).

### **2.2 Items potentially contaminated with soil and related matter**

The importation of items contaminated with soil and related matter from all countries is prohibited. Inspection of items that could be contaminated with soil should be conducted at the first point of entry (seaport, airport or land border) to ensure that items are free of soil and related matter. Some exceptions may apply for plants for planting (see directive D-08-04) and root crops (see directive D-94-26).

## **3.0 Domestic movement requirements**

A Movement Certificate issued by the CFIA is required to transport soil and related matter, plants with soil and items contaminated with soil and related matter from a regulated area of Canada to non-regulated areas. The appropriate condition(s) must be stated on the Movement Certificate.

Movement Certificates may be issued when one of the the following conditions is satisfied:

1. The soil originates from an area found to be free from the regulated pest(s) on the basis of official surveys; or
2. The soil has been treated (heat, steam, fumigation, irradiation, etc.) to render the material free from viable forms of the regulated pest(s); or
3. The soil is moving between facilities or to a facility approved under Appendix 2 of this directive.

#### **4.0 Inspection procedures**

Refer to the following manuals:

*Plant Health Import Inspection Manual*, Version 2.0, April 2009. CFIA, Ottawa. Plant Health and Biosecurity Directorate, Policy and Programs Branch.

*Guidelines for Laboratory Submission of Imported Plants, Plant Pests and Related Materials*, Version 1.0, January 2008. CFIA, Ottawa. Laboratory Operations, Science Branch.

#### **5.0 Non-compliance**

In case of non-compliance with the above requirements, the regulated commodity in question will be refused entry into Canada, ordered removed from Canada or may be disposed of. The person in care or control of the commodity is responsible for any and all costs related to quarantine, destruction, treatment, disposal, disinfection or removal, including any costs incurred by CFIA or CBSA to monitor the action taken. A Notification of Non-Compliance will be issued in accordance to *D-01-06: Canadian Phytosanitary Policy for the Notification of Non-Compliance and Emergency Action*.

#### **6.0 List of appendices**

Appendix 1: Soil and related matter – Exclusions

Appendix 2: Conditions of entry for soil and related matter for Permits to Import issued under Section 43 of the *Plant Protection Regulations*

Appendix 2A: Soil-importing facility/laboratory inspection checklist

Appendix 2B: Standard operating procedure requirements for soil-importing facilities

## SOIL AND RELATED MATTER – EXCLUSIONS

The following are examples of types of commodities that are not considered soil and related matter and, when free from soil and related matter, are not subject to the import or movement requirements listed within this directive. They may, however, be subject to import and movement requirements listed in other policy directives.

- Inert substances used as packing material (see D-08-04: *Plant Protection Import Requirements for Plants and Plant Parts for Planting: Preventing the Entry and Spread of Regulated Plant Pests Associated with the Plants for Planting Pathway*).
- Soil-free growing media and plants rooted in soil-free growing media that have been imported under the Canadian Growing Media Program (see [D-96-20](#), *Canadian Growing Media Program, Prior Approval Process and Import Requirements for Plants Rooted in Approved Media*).
- Tissue culture medium (alone, without plants).
- Silica sand and pure minerals such as barite, greensand, kaolin, rock phosphate, rottenstone and tile clay (for industrial, cosmetic, therapeutic or environmental cleanup applications).
- Sand from salt-water beaches and seashells that are free from all animal matter.
- Gravel.
- Geological samples, ore samples from mining operations and core samples from well-drilling operations.
- Submerged sea-bed sediments and soil that originates from below the water level of a sea or a permanent lake.
- Peat originating from a non-agricultural area that has not been used previously for growing plants or for other agricultural purposes.
- Moss that has been dried or treated (see D-08-04: *Plant Protection Import Requirements for Plants and Plant Parts for Planting: Preventing the Entry and Spread of Regulated Plant Pests Associated with the Plants for Planting Pathway*).



## APPENDIX 2

**CONDITIONS OF ENTRY FOR SOIL AND RELATED MATTER FOR PERMITS TO IMPORT ISSUED UNDER SECTION 43 OF THE *PLANT PROTECTION REGULATIONS***

1. The importer must apply for a Permit to Import prior to importation. The procedure for applying for a permit is described in directive [D-97-04: Application, procedures, issuance and use of a permit to import under the Plant Protection Act](#). The maximum duration for permits issued for the importation of soil is one year. The conditions for a Section 43 Permit to Import differ depending on the end use of the soil. Conditions have been established for research facilities and for industrial facilities. For importation from outside the continental United States, importers require a separate Permit to Import for each country from which they wish to import soil. For soil imported for research purposes from the United States, only one Permit to Import is required for all states in the continental United States but separate permits are required for each United States location outside of the continental United States (American Samoa, Hawaii, Virgin Islands, the territory of Puerto Rico, etc.). For soil imported for industrial purposes from the United States, a separate Permit to Import is required for each state and territory from which the soil originates.
2. Before a Permit to Import is issued, a CFIA inspector must inspect the facility and complete the checklist in Appendix 2A verifying that procedures are in place to sterilize the soil and/or to prevent the potential spread of soil pests. All facilities must develop and implement written standard operating procedures (SOPs), as per Appendix 2B, which will be reviewed by the CFIA inspector to ensure all requirements have been addressed. Facilities wishing to be designated as an approved facility for soil importations must be inspected every two years and Appendix 2A completed and forwarded to the Plant Health and Biosecurity Directorate Permit Office with a copy of the facility's SOP.
3. Material must be routed directly to the importer's plant, premises, research facility or laboratory. A Movement Certificate is required to transport the materials to destinations other than those specified in the Permit to Import.
4. Material must be packaged and transported in sturdy leak-proof containers. The material must be contained until processed. All residue, other than residue from destructive analysis, must be treated to prevent the potential introduction and spread of pests into Canada. The transport containers and packaging material must be treated or disposed of in a manner that will prevent pest introduction.
5. The material shall be clearly and uniquely identified at all times (i.e. during importation, transportation, testing, processing, research, storage and disposal).

6. The importer shall keep a log book of all importations. This book shall indicate the date soil was received, the Import Permit number, the country of origin, where the soil is in the facility and its status (e.g., treated, stored, disposal method, date).
7. Material must be treated to destroy living stages of pests before disposal in a manner approved in writing by CFIA. Any movement of soil outside the facility prior to disposal must be authorized by CFIA.
  - a. When methods have been used that mitigate potential pest risks associated with the soil (e.g., sterilization by heat, digestion by laboratory acids or chemicals), the disposal of the soil and related matter may not require CFIA supervision. The processes must be described in the operating procedures and approved by CFIA as appropriate for mitigating potential pest risks.
8. Movement Certificates can only be issued to facilities moving soil within Canada to other approved facilities or to approved disposal sites. The expiry date of the Movement Certificate shall not extend beyond the date of the next biennial facility inspection/approval.

**SOIL-IMPORTING FACILITY/LABORATORY INSPECTION CHECKLIST****NOTE: This document is to be completed and signed by a CFIA inspector**

<b>Part A - Laboratory/facility Information</b>	
Facility name: _____	
Facility contact person: _____	
Facility address: _____ _____	
Email address: _____	
Phone number: _____ Fax number: _____	
Date of inspection:	_____
Inspected by:	_____

<b>Part B - Documentation Checklist</b>			
Item	No	Yes	Notes
Is the Standard Operating Procedure (SOP) valid and up to date? Please attach or email a copy of the SOP to the Permit Office with this inspection report (see SOP sample in Appendix 2B)	<input type="checkbox"/>	<input type="checkbox"/>	
Is internal movement of soil traceable via paperwork and records?	<input type="checkbox"/>	<input type="checkbox"/>	
Is import paperwork (incoming logs, etc.) complete and valid?	<input type="checkbox"/>	<input type="checkbox"/>	
Are disposal records, including autoclave calibration logs, accurate and up to date?	<input type="checkbox"/>	<input type="checkbox"/>	
Are staff aware of risk involved with the material (e.g. training and awareness)?	<input type="checkbox"/>	<input type="checkbox"/>	
Is this a university lab? If so, the permit and lab inspection report must be issued under the name of the professor (or officer) with responsibility for the lab.	<input type="checkbox"/>	<input type="checkbox"/>	Name of person responsible for lab: _____

<b>Part C - Inspection Checklist</b>			
Item	No	Yes	Notes
Are samples labeled to prevent them being mixed with non-regulated materials?	<input type="checkbox"/>	<input type="checkbox"/>	
Is the material delivered and stored in secured, leak-proof containers?	<input type="checkbox"/>	<input type="checkbox"/>	
Is storage facility adequate, safe and secure such that stored samples cannot contaminate surrounding land or groundwater? Does it contain and segregate international and regulated domestic soil from non-regulated domestic soil?	<input type="checkbox"/>	<input type="checkbox"/>	
Are spill-kits located effectively where needed? Are staff trained in their use? Does the SOP include provisions for dealing with spills?	<input type="checkbox"/>	<input type="checkbox"/>	
Are tools, equipment and surfaces appropriately sterilized/disinfected?	<input type="checkbox"/>	<input type="checkbox"/>	
Is protective gear (lab coats, disposable gloves and footwear) available and used when appropriate?	<input type="checkbox"/>	<input type="checkbox"/>	
Are all soil-contaminated liquids captured and treated as is soil (e.g. autoclaved) or sent to a drain where water enters a municipal system, without bypass (storm overflow), for treatment?	<input type="checkbox"/>	<input type="checkbox"/>	
Is soil treated, prior to disposal, using one of the following processes: <b>Autoclave:</b> 30 minutes, 15 psi pressure, at 121° C. Soil must be moist and be placed in water permeable packages (e.g., paper bags) or in trays with soil in layers no thicker than 4.5 cm. <b>Dry oven:</b> Soil in a layer 2.5 cm thick or less heated to 121°C for a minimum of 6 hours.	<input type="checkbox"/>	<input type="checkbox"/>	
Is another disposal method used? If so, please provide information.	<input type="checkbox"/>	<input type="checkbox"/>	

<b>Part D - Notes (include any corrective actions required)</b>

<b>Part E - Signature and Date</b>			
Item	No	Yes	Notes: Provide reasons if not recommended
Recommended for approval?	<input type="checkbox"/>	<input type="checkbox"/>	
CFIA INSPECTOR (printed name): _____			
SIGNATURE: _____ DATE: _____			

**STANDARD OPERATING PROCEDURE REQUIREMENTS FOR  
SOIL-IMPORTING FACILITIES**

1. All facilities must have written operating procedures for handling imported soil and related matter.
2. The facility must notify CFIA of any significant changes to their procedures or of any change in personnel handling regulated soil.
3. Movement of untreated soil and related matter outside the facility is only permissible with written approval from CFIA (Movement Certificate), as specified in the Permit to Import.
4. The following may serve as a guideline as to the information to include in standard operating procedures.

**COMPANY:** The import of soil is prohibited unless imported under Section 43 of the *Plant Protection Regulations* for scientific research, educational, processing, industrial or exhibition purposes. Provide a general description of your company as it relates to the importation of soil, including the origin(s) of the soil, quantities and purpose of importation, and list most recent soil Permit to Import number(s).

**RESPONSIBILITY:** Everyone handling the soil must be aware of the required procedures. List all the people responsible for handling the soil and have them sign the following statement indicating they have read and understand the requirements for importing soil as stated in the operating procedures and conditions of entry for soil and related matter authorized by a Permit to Import issued under Section 43 of the *Plant Protection Regulations*.

The following staff have read and understand the import requirements and operating procedures:

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**RECORDS:** A record of all soil importations and their disposition must be kept by the facility. A record of the location of any soil in the facility as well its disposition must be readily available at all times. Describe the method by which soil importations are recorded, as well as the system used for tracking the location of the soil, its treatment and its disposal.

**SHIPPING:** All soil must be sent in sturdy leak-proof containers to ensure proper containment while in transit. Describe how your shipping procedure will accomplish this.

**STORAGE:** All imported soil must be stored in a manner which ensures that it is easily identified as such and is not mixed with any non-regulated domestic soil which may be present (if the two are mixed, all of the material would then be considered as regulated and have to be disposed of accordingly). Labels should be used which clearly identify any regulated soil and can be easily cross-referenced to the company records mentioned above. The containers should be leak-proof and be organized and labeled to separate regulated material from non-regulated material. Describe how your company will meet these requirements. Specify if your company will retain soil samples and, if so, for how long.

**PROCESSING & HANDLING:** Precautions must be taken to ensure that untreated regulated soil does not leave the premises. Procedures must be in place to prevent cross-contamination of non-regulated soil with regulated soil, to ensure that contaminated equipment and any accidental spills are properly dealt with using CFIA-approved methods, and to identify where spill kits are located. Describe your facility's processing and handling procedures including the location and staff operating instructions for use of spill kits.

**DISPOSAL:** Unless otherwise authorized by CFIA, imported soil must be sterilized prior to disposal as follows:

Dry oven: Soil in a layer 2.5 cm thick or less heated to 121°C for a minimum of 6 hours.

Autoclave: 30 minutes at 15 psi and 121°C. The soil must be moist and be placed in water permeable packages (e.g., paper bags) or in trays with soil in layers no thicker than 4.5 cm.

What is the maintenance schedule for your drying oven/autoclave?

How does your company manage liquids combined with soil? All liquids contacting the soil must be captured and treated as is soil (e.g., autoclaved) or sent to a drain where water enters a municipal system (with no storm overflow) for treatment.

Include complete details of disposal and treatment in your facility's operating procedures.

**MOVEMENT:** Is your company affiliated with any other soil labs? Will there be any domestic movement of soil to other approved facilities? Movement of untreated soil outside the facility is not permissible without written approval from CFIA, as specified in the Permit to Import. Describe your facility's domestic movement of imported soil, if applicable.

FACILITY NAME, CONTACT NAME, ADDRESS, PHONE and FAX NUMBERS, EMAIL ADDRESS:

Officer in charge of facility (printed name): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_