



Economic Commission for Europe**Steering Committee on Trade Capacity and Standards****Working Party on Agricultural Quality Standards****Seventy-sixth session**

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Item 5 of the provisional agenda

Specialized Section on Standardization of Seed Potatoes**Amendments to Annex I and Annex VII of the Standard for Seed Potatoes****Submitted by the secretariat**

The following document is submitted to the Working Party for adoption as amendments to Annex I and Annex VII of the UNECE Standard for Seed Potatoes.

This document is submitted according to ECE/CTCS/2019/10 section IV, ECE/CTCS/2019/2 Decision 2019-8.6, and A/75/6 (Sect.20) and supplementary information.

I. Annex I**Minimum conditions to be satisfied in the production of Pre-basic Tissue Culture (TC) seed potatoes**

1. Pre-basic Tissue Culture (TC) seed potatoes must be produced from initial stock.
2. The initial stock used to produce pre-basic Tissue Culture (TC) seed potatoes shall be known to be free from, at least, the following pests:
 - *Clavibacter michiganensis* spp. *sepedonicus* (ring rot)
 - *Ralstonia solanacearum* (brown rot)
 - *Pectobacterium* spp. and *Dickeya* spp. (syn. *Erwinia* spp.)
 - *Candidatus Liberibacter solanacearum*
 - *Candidatus Phytoplasma solani*
 - Potato spindle tuber viroid
 - Potato viruses X, Y, S, M and A
 - Potato Leaf Roll Virus
3. The satisfaction the conditions under item 2 shall be established by appropriate tests as approved by the Certification Authority (CA).

Production of Pre-basic TC seed potatoes (e.g. minitubers)

4. The facilities and procedures used for the production of Pre-basic TC seed potatoes may be approved at the discretion of the CA.

The facilities and procedures used for the production of Pre-basic TC seed potatoes should include:

- Measures to avoid contamination from pathogens and pests, e.g. protected environment, double door entry, protective clothing, dedicated footwear or disinfection. The record-keeping system should document the source of the material and the volume of production;
- Pest-free growing medium;
- All reasonable husbandry practices for the prevention or spread of pathogens and pests.

5. The satisfaction of conditions and the tolerances prescribed for Pre-basic TC seed potatoes in annexes II, III and IV shall be established by official inspection and/or testing as approved by the CA.

II. Annex VII

Definitions of terms applicable to the Standard

The definitions provided herein apply specifically to certified seed potatoes moving into international trade under provisions of this Standard and their meaning may therefore differ from their classical meaning.

Incorporation of the terms in this glossary signifies their unique use by countries, which have adopted the Standard.

Blackleg:

Commonly used name of a bacterial disease of potatoes, generally caused by *Pectobacterium atrosepticum* (syn. *Erwinia carotovora* subsp. *atroseptica*). Similar symptoms may, however, be caused by *Pectobacterium carotovorum* (formerly *E. carotovora* subsp. *carotovora*) and *Dickeya* spp. (syn. *E. chrysanthemi*).

Certification:

An official control procedure, which aims at ensuring the production and supply of seed potatoes which satisfy the requirements of this Standard.

Chilling injury:

Consists of internal damage to the tuber caused by exposure to temperatures slightly below or slightly above freezing, even for a relatively short period of time. A greyish discoloration predominantly of the vascular tissue can occur within hours after exposure. Chilling injury results in a tuber with no, or very poor, germination.

Clonal selection:

A system of potato propagation that starts from selected plants that fulfil the requirements of the pre-basic seed.

Clonal stock:

Propagation stock of a particular variety descended from a clonally selected mother plant. Clonal stocks are subject to visual inspection (diseases and varietal identity)

Consignment:

A quantity of seed potatoes consisting of one or more lots which have been consigned to one commercial party and is covered by one set of documents.

Contaminated field:

A field made subject to regulatory action because of the presence of a designated pathogenic organism in the soil.

Crop

A defined area of seed potatoes that is limited to one variety and class and is registered as a single unit for certification. The origin is documented.

Certifying Authority (CA):

Organization(s), agency or agencies designated by government and/or industry to administer the certification of seed potatoes.

Disease:

Any disturbance of a plant caused by pathogenic organisms which interferes with its normal structure, function or economic value.

External defects:

Any tuber defect that can be detected externally. Countable tubers are those which may have a negative impact on yielding capacity or storability, or which are likely to lead to secondary infection.

Field:

A defined area of land used for cultivation of seed potatoes.

Free from:

Not present in numbers or quantities that can be detected by the application of appropriate sampling, inspection and testing procedures.

Field generation number:

The number of growing cycles since the first introduction in the field after micropropagation or clonal selection.

Homogeneous:

Uniform in composition and appearance.

Initial stock:

Initial or nuclear stock refers to the pathogen-tested microplants that form the basis of tissue culture seed potato propagation cycle.

Inspection:

Visual examination of plants, tubers, container, equipment or facilities by an authorized person, to determine compliance with regulations.

Lot:

A quantity of seed potatoes of the same variety and class, derived from the same crop and bearing a unique reference number. There may be multiple lots per crop.

Micropropagative multiplication:

The process of propagating microplants of initial stock by taking nodal cuttings under aseptic conditions to produce large numbers of microplants. The resulting microplants are retained for further multiplication cycles or grown to maturity to provide harvestable tubers usually of the class PBTC.

Mother plant:

An identified plant or tuber from which material is taken for propagation. The mother plant is used for initial stock or for clonal selection.

Origin:

The crop from which the seed potatoes are derived and which can be identified.

Phytosanitary provisions:

Provisions in accordance with the International Plant Protection Convention.

Potato leaf roll disease:

A severe virus disease caused by potato leaf roll virus (PLRV). Plants are usually smaller than healthy plants and sometimes stunted. The top of the plant is paler and the leaves are more erect than usual. Older lower leaves roll upward and become brittle, such that they can be easily broken (metallic rustling) when squeezed gently. Primary infection may cause a slight rolling of the upper leaves, sometimes accompanied by discoloration.

Primary virus infection:

Infection occurring during the current growing season and not arising from the seed tuber.

Quality:

The sum of all characteristics that determine the acceptance of seed potatoes in relation to the specifications of this Standard.

Quality Control:

The control by the CA of all activities encountered in the process of producing and marketing seed potatoes in conformance with the Standard.

Quality pest:

A pest carried by planting material, subject to official regulatory control, but not a quarantine pest.

Quarantine pest:

A pest of potential national economic importance to the country thereby endangered and not yet present there, or present but not widely distributed and being actively controlled.

Regulated non-quarantine pest:

A non-quarantine pest whose presence in plants for planting affects the intended use of those plants with an economically unacceptable impact and which is therefore regulated within the territory of the importing contracting party.¹

Rot:

Rot is the disintegration of tissue as a result of the action of invading organisms, usually bacteria or fungi.² Rot can be triggered by environmental factors. A tuber rot may be classified as either a wet (also called soft) or dry rot according to its external and internal appearance, and the diseases causing these types of rots are specified in the List of Diseases and Pests.

Wet rot: tuber softening to maceration, associated with a fluid exudate, which has arisen due to a primary or secondary bacterial and/or fungal infection.

Dry rot: tuber tissue exhibiting a sunken, necrotic lesion without the loss of fluid exudates, which may remain localized or enlarge by becoming wrinkled and mummified to encompass the whole tuber.

Sampling:

The procedure of drawing at random a number of tubers, plants or parts of plants, which may be taken as representative of the lot or the field.

Severe Mosaic:

Disease symptom caused by a virus, characterized by discolouration and distortion of foliage, and easily discernible by visual inspection.

Sprout inhibitor:

A chemical substance, applied either to the plants during the growing season or to the tubers after harvest, which suppresses or prevents the normal development of sprouts.

¹ International Standard for Phytosanitary Measures 5 (ISPM 5, 2012).

² From "Holliday P (1989). A Dictionary of Plant Pathology. Cambridge University Press.

Substantially free:

Not present in numbers or quantities in excess of those that can be expected to result from and be consistent with normal handling and good cultural practices employed in the production and marketing of the commodity.

Testing:

The use of one or more procedures, other than inspection for determining the presence of a pathogenic agent or for varietal identification.

Traceability:

A system of documentation that enables the source and performance of a lot to be tracked during the classification process.

“Virus diseases:

Manifest themselves by deformations of the foliage with or without discolouration. The determination is based on the count of plants with virus symptoms in a crop at the time of the inspection. Simple diagnostic field kits are available that can aid identification of many of the viruses and there are laboratories that offer comprehensive testing, if required. If a virus is suspected the inspector may seek confirmation using approved diagnostic tests.

Virus symptoms in potato plants can be discolouration, mottling, rugosity, crinkling, rolling and brittleness of the leaves or dwarfing of the plant, as with mosaic or/and potato leaf roll disease. It is important to note that the actual virus, virus strain, potato variety, environmental conditions all may affect the expression of the virus symptoms.

The following viruses or virus combinations are normally associated with symptoms of virus:

PLRV, PVY, PVA or PVM

PVY + PVX, PVA + PVX or PVX + PVS.

PVS, PVX, and other viruses, depending on the strain and variety, may be latent or show mild symptoms.”
