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**Specialized Section on Standardization
of Seed Potatoes**

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Item 12 of the provisional agenda

True potato seed

Update on true potato seed *

The following document contains updates provided by the delegations of the European Commission and the Netherlands on developments regarding the listing and marketing of potential varieties derived from true potato seed, which are currently not covered by the scope of the UNECE standard. It is presented to the Specialized Section for discussion.

* Submitted on the date indicated to include the most recent information.

I. Update on true potato seed

A. Hybrid breeding of potatoes – true potato seed

Currently seed potato tubers are the main source of propagation material for potato production. However, for many years true potato seed (TPS) has been used in different parts of the world for the production of ware crops. The main problem however, is the heterogeneity of the potato crops grown from TPS.

Compared to other major food crops, progress in potato breeding is relatively slow. New developments in hybrid potato breeding (crossings from inbred lines) promise to reduce the duration of breeding programs considerably, allow access to more genetic variation and permit the development of new varieties with combinations of useful traits.

These new scientific developments also allow the propagation of potatoes by seeds, so-called true potato seeds. Established practices of seed potato production rely on the vegetative multiplication of potato tubers over several generations. Multiplication practices including true potato seed promise to shorten the time necessary to produce sufficient numbers of seed potatoes considerably, even if, depending on agro-climatic conditions, vegetative field multiplication of seed potato tubers still has to take place. Furthermore, there could be a significant impact on international trade as true potato seeds are very easy to ship in comparison with seed potato tubers.

B. Varietal context

The TPS concept has so far not been able to come up with homogeneous progenies. Earlier DUS testings showed too much heterogeneity. These (tetraploid) varieties did not fit into the UPOV DUS requirements. New hybrids are (partly) based on diploid inbred lines, resulting in sufficiently homogeneous varieties. That is the expectation (or claim) of breeding companies involved in hybrid breeding at diploid level. Results of DUS testing of recently developed hybrid varieties are expected within the foreseeable future.

C. European Union context

- Marketing (2002/56/EC) of TPS is not regulated, including TPS derived tubers, since it is not clear whether tuber production from TPS can be considered as an “accepted method of maintenance”.
- An experiment is being set up by the EU Commission to facilitate the marketing of TPS, TPS seedlings and TPS derived tubers, pending necessary changes of the marketing directive (2002/56/EC) and the phytosanitary directive (2000/29/EC); present phytosanitary requirements do not cover true seeds of potatoes of commercial varieties (or in trial for listing).

This new development poses a number of regulatory challenges:

- The UNECE Standard only applies to seed potato tubers. The definitions always refer to seed potatoes as being derived from a previous generation of seed potatoes (except Pre-Basic TC).
- The use of true potato seed leads to more complexity in seed potato production systems, as seedlings might be an intermediate production step. A variable number of field multiplications of TPS derived tubers might take place. Breeders indicate this will be limited to one or two.

- The use of TPS in potato/seed potato production systems requires the adoption of standards for (first generation) TPS tubers, seeds, and possibly seedlings. Little is known about the quality standards TPS can and should fulfil.

Plant health aspects are outside the scope of the UNECE seed potato standard.

D. Proposal

- Discuss developments in hybrid breeding, including ‘regulatory challenges’.
 - Follow developments regarding the EU experiment.
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