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of Seed Potatoes**

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Food loss/waste – the case of seed potato certification

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The following document, drafted by the delegations of France, Israel, and the United States, contains a short overview on the possible use of seed potatoes that do not meet certification requirements as well as the impact of a seed potato quality standard on the progeny and the potato production chain. The text of this document is submitted to the Specialized Section for review.

* Submitted on the above date to include all contributions of delegations.

Food loss and waste – the case of seed potato certification

A. Introduction

Potatoes are one of the most economical staple foods in the world. Potatoes rank as the world's fourth most important food crop, after maize, wheat and rice and grow in about 130 countries, 95 of which are developing countries. In 2013, the world potato production was about 368 million tonnes (325 million in 2007). In 2007 it was estimated that more than 165 million tonnes were produced by developing countries (FAO).

B. How certification of seed potatoes contributes to limit food losses

Given the importance of this major crop, the quality of seed potatoes is of strategic importance because it is a key element for the success of the potato production. Indeed, it is essential for the grower to plant seeds that correspond to the expected variety, that have a sufficient varietal purity, that present appearance defects at the lowest possible level and that are healthy.

For this purpose, the implementation by countries of seed certification schemes and marketing rules allow to ensure the supply of high quality seed potatoes to growers. In this respect, the UNECE Standard S-1 concerning the marketing and commercial quality control of seed potatoes is a very useful tool. It is an international reference to be used by countries or international organizations to help them set up their regulations. It is a very comprehensive standard for certification and takes into account all the necessary characteristics to be checked and related to varietal, health and presentation quality. Through its meetings of experts from many different countries, representing various production areas of the world, the UNECE's Specialized Section on Seed Potatoes (under the Working Party on Agricultural Quality Standards), regularly improves and updates this Standard. The definition of the provisions, the appropriate rules and norms on seed is therefore the result of the compromises between the willingness to limit, in the most efficient way, the possible risk of poor quality of potato production and their technical and financial feasibility.

The main focus of the seed certification standard is evidently the phyto-sanitary quality. Potatoes are affected by plant health issues, in particular due to their vegetative propagating type, which is conducive to the spread of various pathogens causing different types of diseases. These diseases are responsible for the deterioration of the quality, yield losses, rotting in store and, therefore, are the main source of food waste and financial losses in the potato production chain. Specialists estimate that approximately 22 per cent of potatoes are lost every year owing to viral, bacterial and fungal diseases and pests, which corresponds to an annual loss of over 65 million tonnes (Ross H., 1986).

Many of these diseases, like the widespread "Blackleg" and Potato Virus Y, which cause severe losses in the potato production, can be limited by preventive measures consisting mainly of planting healthy seeds produced within the parameters of a certification scheme.

In fact, experience and studies have shown that use of non-certified seeds may contribute to the expansion of diseases, which can dramatically reduce both tuber yields and quality. In some situations, where there is a lack of awareness or training among potato growers combined with the use of non-certified seeds, yield shortfalls can reach up to 80% due to viral diseases.

While not all the diseases and defects addressed by the UNECE Standard result in loss of yield or loss during the storage, some of them affect the tuber appearance and make

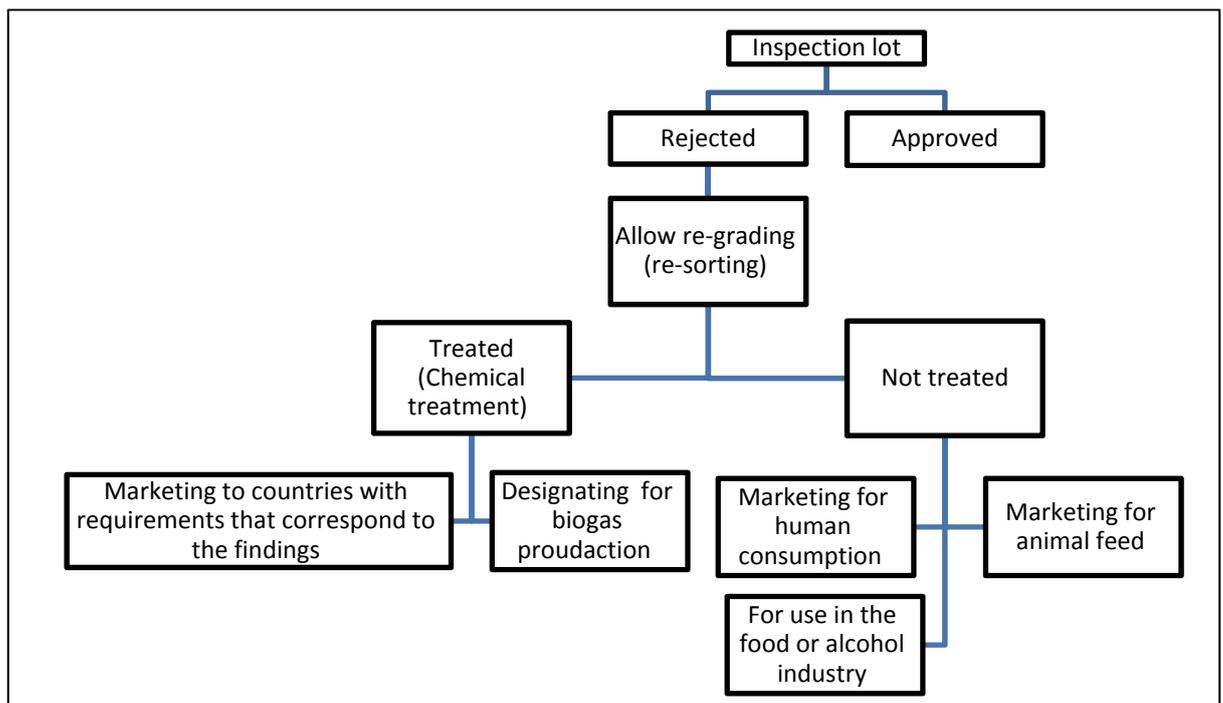
potatoes unsuitable for marketing and sale. This is the case of the bacterial disease “Common scab” which is responsible for skin blemishes on tubers. This disease results not only in financial loss because the product is downgraded but also in food waste because it obliges the consumer to peel very deeply in order to remove the scabbed skin.

It is therefore evident that setting up an efficient system of certification for the marketing of high quality seed potatoes, as it is promoted by the UNECE Specialized Section, contributes to a sustainable potato production and, indirectly, to the reduction of food loss and waste.

C. Possible use of seed potatoes that do not meet certification requirements

That said, certification can lead to rejection of crops or harvested lots of seed potatoes when the inspection reveals that they do not meet the requirements. These rejected potato tubers that can no longer be used as seeds could theoretically be considered as waste. However, in practice, different other uses are possible for the rejected seed potatoes. In particular, instead of being used as seeds, the tubers can be used for human food or animal feed when they are not treated.

The following scheme illustrates the main possible alternative uses for an inspected lot that is rejected as seed:



It is obvious that rejected seed potatoes shall be destroyed when they are contaminated by quarantine pests, which present the risk of spreading to the environment. In those cases, destruction is the safest solution to protect the potato production area of a country and may be considered as the lesser evil.

D. Conclusion

In a context where sustainable development, food security and waste reduction are of concern, there is a need to support the work which contributes to an improvement of quality

production of one of the major global staple crops – potatoes. The work of the UNECE to promote the certification of seed potatoes in the world helps to achieve this objective.

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