INTERNATIONAL MOVEMENT OF SMALL LOTS OF SEEDS

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The seed industry, in conjunction with research institutions, have seed breeding and increase programs in several countries to evaluate material adaptations to different climates, growing conditions and production systems. This implies extensive international movement of small lots of seeds.

The definition of "small lot" is a lot of seeds for which the sample size (number of seeds) required for a given test will result in the consumption of all or a significant portion (i.e., greater than 10%) of the lot. Given that there are different sample sizes per host by pathogen combination, the designation as small lot will vary per crop and pest target.

Analyzing the official phytosanitary regulations of different countries or trading blocs, it is observed that most NPPOs do not differentiate phytosanitary requirements between consignments of seeds for different purposes (commercial sales, seed increases, small lots, etc.).

This situation creates difficulties when seed testing for pest diagnosis is a phytosanitary requirement by the NPPOs of importing countries, as well as the verification of the requirement at destination, since many times the volume of the lot is not sufficient to carry out the analysis or involves the use of a large part of the lot or the total of the seed.

SAA emphasizes the need to deepen the understanding of this issue, considering the different purposes of small lots, proposing alternative phytosanitary measures to facilitate the movement of seed, minimizing the phytosanitary risk.

In the pests risk analysis (PRA) conducted by the NPPOs, the phytosanitary risk analysis should be different depending on the purpose for which the seed is imported and therefore, the management of that risk may imply different phytosanitary measures.

The draft ISPM "International Seed Movement", which is in the final process for approval by the IPPC, considers the different purposes for which a seed can be imported.

As mentioned, most of the NPPOs in the Americas establish phytosanitary requirements for commercial seed (field sowing) and do not perform a risk assessment for different purposes of import. Only a few NPPOs differentiate for what is considered germplasm and have mandatory post-entry quarantine requirements.

Seeds can be imported for three main purposes, among others: seeds that will not be planted, seeds that will be planted in confined conditions and seeds that will be planted in open fields.

a) Seeds which will not be planted.

- The seed is used for destructive analysis only, or it will be destroyed immediately following non destructive analysis, and in no case will it be planted.

In this case, the risk of pest introduction is very low or negligible because the seed will be destroyed and not planted in an open environment; therefore, the application of phytosanitary measures is not justified.

b) Seeds to be planted under confined conditions.

- Seed is germinated and the resulting plants are kept in laboratory, growth chambers or confined greenhouses, and then plants and its production is destroyed at the end of the analysis.
- Initially imported seeds are planted / kept in laboratory growth chambers, confined greenhouses or, but progeny seed is harvested for subsequent sowing.

In the first situation where the plants are destroyed, the phytosanitary risk is the same as in case (a) above, which means negligible. In the second, the risk must be evaluated by the NPPO of the importing country, for regulated pests of concern, given the specie, to establish phytosanitary measures for the imported seeds or their progeny.

Options of phytosanitary measures may be:

- The imported seeds comply with the phytosanitary requirements established by the NPPO of importing country and, as such, maybe imported for this purpose.

OR, the seed is imported with the following quarantine post entry measures:

- Mother plants could be visually inspected and tested if any suspicious presence of regulated pests of concern are detected.

OR,

- if enough seed is produced to take a sample, progeny seed could be tested.

c) Seeds to be planted in field. (line increases, experimental trials)

In this case, like the last case above, the phytosanitary risk for regulated pests of concern should be assessed and appropriate phytosanitary measures put in place, which may include plant inspection during active growth period and tissue sampling of any suspicious plants for analysis, or testing of progeny seed. It is necessary that the NPPO of the importing country take into consideration certain parameters, such as:

i. Percentage of plants to be inspected and grow stage.

ii. Assay to use for testing.

iii. For seeds, sample size and methodologies for regulated pest testing.

For this paper, the SAA collected and reviewed phytosanitary regulations of the NPPOs from North and South America, from the European Union, Australia and New Zealand, as well as from the NAPPO RSPM N° 36, the ISPM draft for International movement of seed (currently out for country consultation by IPPC members), and the proposed ASTA protocol for small seed lots.

We consider that although the draft IPPC provides clear guidelines in relation to purposes of seed it offers insufficient guidance for sampling and phytosanitary certification of small seed lots. Therefore, further analysis in regard to phytosanitary aspects of small seed lots is needed since most NPPOs in the Americas do not have specific phytosanitary regulations to facilitate the entry of these small lots.

There is an important difference in the documentation required by NPPOs (import permit or phytosanitary certificate). For example, the US, Australia and New Zealand issues import permits, and do not require phytosanitary certificates for small seed lots. Chile does not require an import permit but does require a phytosanitary certificate, in the rest of the Americas, import permits are mandatory and all regulated products must be imported with a phytosanitary certificate. In other words, small seed lots are addressed the same as commercial consignments.

When the phytosanitary requirement needs a laboratory analysis, of plants or seeds, the NPPO of the importing country do not specify the sample size and methodology of the analysis.

The recommendation of the ISPM No. 31 to use of hypergeometric model to determine the sample size is not appropriate for small lots because its application would destroy a large percentage or all of seed lot.

Based on this analysis, the SAA believes that there is sufficient information available to the NPPOs of importing countries to consider alternative phytosanitary measures, based on the purpose of the small lots of seeds.

When larger sample sizes are needed for a given test, alternatives such as the taking of a composite sample is possible. The difficulty with this methodology is that in those cases where the test result is positive, it is not easy to determine which lot(s) is (are) positive.

In the case of small lots, there are ongoing research initiatives at the international level on the development of a new concept for estimating sample size, which results are expected to be released soon.

In the search for a solution to the problems raised by the National Seed Associations in this topic, the SAA considers that it is necessary to have a direct dialogue with each NPPO and with NAPPO and COSAVE to consider the following:

- Jointly assess the use of a specific application form, for importers to request the importation of small lots of seeds and for NPPOs to analyze requirements based on purpose. For example, APHIS has a specific import permit for small lots and some others NPPO for trials.

- For those NPPOs who have not established phytosanitary requirements for different purposes, request the possibility of considering alternative phytosanitary measures or the equivalent to those applied to commercial seeds.

- When the phytosanitary requirement is a laboratory test for the diagnosis of regulated pests, request specific protocols that detail sampling requirements, considering the size of the lots.

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