

# **The assessment of insects associated with traded tree seeds and seeds from botanical gardens in Europe**

Short Term Scientific Mission (STSM), COST Action FP1401

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## **Summary**

The growing volume of the international trade in plants for planting is causing an increase in the number of alien pests (insect pests and pathogenic fungi) and damage they cause in invaded areas. The improvement of risk assessment and management methods is therefore important in order to reduce the risk of new introductions, especially since pest risk analysis (PRA) is usually conducted only for known pests while the majority of introduced pests were unknown before introduction. Sentinel plantings offer a unique opportunity to detect and identify unknown pests before they are introduced to new area and to help in prioritisation of pests that should be covered with PRA, but the study of sampling design for sentinel plantings is needed.

This STSM assessed insects associated with seeds from selected tree species that were obtained from botanical gardens and arboreta across Europe and from commercial seed suppliers. We assessed 83 seed lots (seed lot=100 seeds of each tree species from one location) for the insects by x-raying and insects were extracted. The extracted insects will be identified by sequencing. The work in this STSM revealed that most seed lots from the native range of the tree species contained insects, while the lots from the introduced range contained fewer or no insects. These results will be used in my PhD project where we assess seed-borne insects and endophytic fungi of twelve selected European, North American and Chinese tree species on each of the three continents with the aim to assess the phytosanitary safety of traded seeds, which is still poorly known and to improve sampling design in sentinel plantings. The results of this STSM and my PhD studies will inform WG2 of the Action.