

PONTE Project

Methods for eradicating *Hymenoscyphus fraxineus* in ash fruits

- A specific part of the PONTE Project was dedicated to microorganisms affecting woodland trees. Among these plant pathogens, *Hymenoscyphus fraxineus*, a fungus, is known as the primary cause of the ash-dieback in many parts of Europe. The infection starts when the fungus infects the ash leaves.

Hymenoscyphus fraxineus

Hymenoscyphus fraxineus is a fungus causing ash dieback on European ash trees.



- After the detection of *Hymenoscyphus fraxineus* in the UK in 2012, a plant health order was made which effectively prohibits all imports of ash seeds, plants and trees into Great Britain, and all inland movements of the same material. Northern Ireland has a similar measure in force. However, the regulation does not prohibit imports or inland movement of ash logs, sawn timber, chips and firewood. These are considered to be low-risk pathways for spreading *Hymenoscyphus fraxineus* infection, especially if they are kiln dried.

- Within the **POnTE Project**, the fungus was detected on ash fruits and this was investigated further to determine whether the fungus was only present externally due to the airborne nature of the spores or the fungus was also present internally.

POnTE Project

The EU Horizon 2020 financed POnTE Project started in 2015 and concluded in 2019. POnTE gathered 25 organizations and 120 researchers from 10 EU and three non-EU countries to foster and share knowledge for the prevention, detection, control, and management of a group of plant pests threatening crops, biodiversity, and the economy in Europe.

Hot water treatment

Hot water treatment is a way to reduce the risk of plant pests spreading and to facilitate the movement of plants or parts of plants (seeds, fruits, grafts) between infected and non-infected areas, as well as domestic and international trade for nursery production. It consists of putting the vegetal material into hot water. Nevertheless, tests are needed to find the right temperature and the right timespan for different plants and their parts.

- Furthermore, within the POnTE project, researchers tested various methods to eradicate the fungus from the infected ash fruits and, consequently, the seeds.
- The experiments with **hot water treatment** were successful. Ash seeds survived hot-water treatment for 5 hours at 44°C, resulting in not-infected seeds when germinated.



New findings, new questions

Hot water treatment proved to be an effective methodology to ‘wash’ away *Hymenoscyphus fraxineus* from ash fruits and seeds. After the treatment, the fungus was not detected on either control or treated seeds, while the water used in the treatment did contain *Hymenoscyphus fraxineus* DNA. That suggests that the spores may have been washed off the fruits. The achievements of the POnTE Project on the eradication of the pest from ash fruits is significant for nurseries and plant trade.