#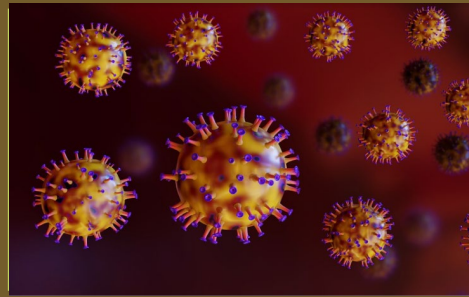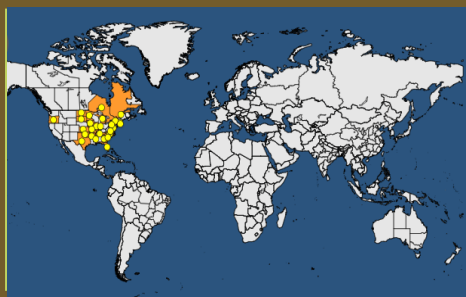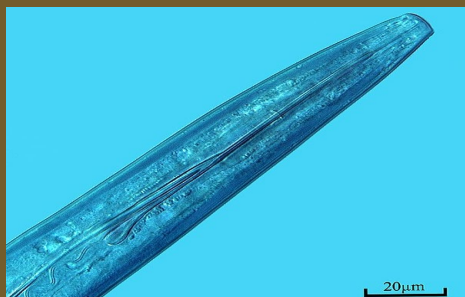 Detecting virus-carrying *Xiphinema* spp. as an alternative to *Xiphinema* identification up to species level in trade (XiphiVIR)

07/2020-06/2022

Funding

Mixed funding mechanism funding mechanism. Each funder only pays for the participation of their own national researchers. Total funding € 272 000

Research consortium

ILVO (BE), IPP (PL), VNIIKR (RU), KIS (SI), INIA (ES), FERA (GB), CU (TR), TVRI (TR), JHI (GB)

Contact information

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Goals

Nematodes of the genus *Xiphinema* (dagger nematodes) are migratory root ectoparasites with a broad host range. The non-European populations of this group have a quarantine status as some of the species can transmit certain nepo- and cheraviruses. The identification up to species level based on morphological and morphometric data is quite difficult. The aim of the project is to validate diagnostic protocols for the identification of *Xiphinema* spp.

Objectives

The project's objectives are:

• To gather information on the current methods to detect nepoviruses in plants and nematodes and select of the best generic methods for the detection of the different nepovirus subgroups;

• To collect *Xiphinema* spp. and establish cultures;

• To optimize the selected method(s) for virus detection inside the nematodes (RNA extraction, virus detection and virus identification). Emphasis will be given on specificity, sensitivity and robustness of the method;

• To organize a test performance study. Through the test performance study, parameters such as repeatability and reproducibility will be assessed;

• To assess the feasibility to use Illumina and nanopore sequencing (MinIon) as a fast, reliable method to identify nepoviruses in nematode samples.

Key outputs and results

• Validated tests for the detection/identification of nepoviruses in their nematode vectors;

• Recommendations on the use of nanopore sequencing to detect viruses in nematodes.