

OPTIMIZATION OF SOLARIZATION AND STREAMING METHODS TO ERADICATION TMV



Tecnova, Landwirtschaftskammer Nordrhein-Westfalen (LNW), Solarization, Steam Treatment, PCR (Polymarase Chain Reaction).



Spain



TECNOVA (TEC, Spain) and **Landwirtschaftskammer Nordrhein-Westfalen (LNW, Germany)** work together in the task "**Optimization of eradication methods after tobamovirus outbreaks**" of **VIRTIGATION** project. Both institutes are working on the validation of **solarization and steaming** methods to eradicate tobamoviruses in **contaminated cocopeat** bags by **TMV (Tobacco mosaic virus)**.

Solarization Method

For **solarization**, **TEC** utilized a transparent **37.5 um thick** polyethylene plastic for **60 days** (from **September** to **November** to simulate the summer in other European countries) with temperatures ranging from **15.2 to 46.2°C**. The results of **solarization** have been very promising. All tomato plants grew symptom-free in **solarized** bags. Only in one of the six lines (temperature > **40°C** during **10-13 days**) were viruses detected by **PCR**. Moreover, in bags with infected material (roots and leaves), the maximum temperature was up to **4°C** higher than in bags with just substrate.

Steaming Protocol

LNW is testing two **steaming** protocols: (1) **90°C for 20 min** and (2) **90°C for 40 min**. The steaming results are forthcoming. After **steaming**, it has been observed that: (i) plants in the non-steamed bags showed better fitness than the steamed variants; (ii) growth of mold and fungi could be observed on the substrate; and (iii) substrate bags must be used immediately and cannot be stored for a while.

>>> READ MORE

Presented in: Symposium soils disinfection, Almería, June 2022

Martinez-Diaz, V., Boehnke, B., Sanchez, C., Leucker, M., Richter, E., and Lopez, G.

NKB: Mariana B. Lorbach



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101000570



virtigation