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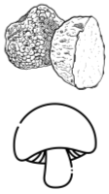
ITHub 4 – Non-Wood Forest Products



FOREST4EU partner: SOLUTOPUS
OG: BioChestnut - IPM
OG's country: Portugal
Type of Innovation: technological

Biological Treatment of Chestnut Blight (*Cryphonectria parasitica*) in Portugal

Introduction

The OG focused on the chestnut cancer, with the aim of finding biological tools and mangement to decrease the effects of the parasit; the conventional treatment until now hasn't been efficient in fighting this disease. Chestnut cancer is associated with the fungus Cryphonectria parasitica (Murril) Barr, a species of Asian origin, invasive and very aggressive on chestnut trees, causing death of the branches and progressively of the entire tree. A European and Mediterranean Plant Protection Organization (EPPO) categorizes the fungus C. parasitica as an organism of quarantine on the A2 list, i.e. a quarantine organism but already present in many of the European countries (EPPO, 2022).

Methodology

OG BioChestnut - IBM had 4 phases:

1. Characterization of the virulent C.parasitica population;
2. Know the presence of natural hypovirulence in the C.parasitica population in Portugal;
3. Monitor the effectiveness of treatments;
4. Develop formulations of the DICTIS bioproduct for use in different disease situations in chestnut trees.

Following a strict experimental design, essays were made with the biological products, supported by laboratory analysis and field observations. Considering that the biological control using hypovirulent strains of C. parasitica (hypovirulence) is a very effective means of control that promotes the healing of cancers and the full recovery of diseased chestnut trees and considered by EFSA (2016) as the most adequate and more effective to mitigate and control the high risks that the diseascker with CHV1 Strains is necessary to complete the following:

- stage 1 - Scientific and technical studies (Pre-Application). Population Study of the Parasitic Fungus Present in Soutos, Production and Formulation of the Bioproduct,Experimental Development;
- stage 2 - Treatment of Cancers, by puncturing or brushing with CHV1 Strains Compatible;
- stage 3 - Monitoring and Evaluating the Efficacy of Treatments;

- stage 4 – Compliance with IPB Regulatory Commitments, Chestnut Producers, Producer Associations, Other Authorized Entities.

Lessons learned

Find the best practices and develop action and interaction tools between different participants was one of the objectives of the GO - Biochestnut -IPM- project to implement measures effective fight against chestnut and almond trees. The participation of researchers, technicians and chestnut producers as well as the different entities involved in the organization of production,

management of the territory and official entities allowed the transfer to take place of technology and the adoption of the new biological control method in the treatment of breast cancer chestnut. The success achieved translates into the treatment of 4028 (plots) chestnut trees and 59452 chestnut trees recovered, thus guaranteeing productivity for producers, but also the sustainability and resilience of the chestnut ecosystem of high environmental value in the mountain regions of Portugal.

The "Experimental Program for the Biological Treatment of Chestnut Canker Based in Hypovirulent Strains of Cryphonectria parasitica - CHV1 Strains" effectively resolves and will continue to ensure the long-term resilience of the chestnut ecosystem. The new parasites and mutations need similar approach, in continuous.

Figure 1. Treatment of the chestnut blight

The information presented in this factsheet was developed by the FOREST4EU partner, drawing on the innovations and knowledge generated by the indicated operational group with their explicit authorization.

Further information

https://biochestnut.cncfs.pt/

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