FOREST4EU

ITHub 3 - Sustainable Forest Management and Ecosystem Services

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# Use of Bite technology for tree infusion in chestnut groves

## Introduction

Traditionally, in fruit tree crops phytosanitary control has always been done by canopy spraying, that caused a high product dispersion in the environment, high delivery time of application, less absorption and lower results in responding to phytosanitary attacks. In chestnut groves this control method is either too burdensome and inapplicable due to the considerable size of the plants or even non applied at all.

Endotherapy can be applied to chestnut trees regardless of their height and location, take less time than traditional methodology and don't dissipate the product, with better results. A single tree treatment requires roughly 10 minutes and, since more trees can be treated simultaneously, a chestnut farmer can manage to treat a chestnut grove in 1 or 2 days.

The device requires no electricity to operate and reduces water consumption by more than 99% compared to spraying treatments (water consumption is a few ml per tree, therefore an absolutely negligible quantity). The cost of the device is around 1300 € and the cost of a commercial *Thrichoderma* package is around 200 €; however, as the product is very concentrated (billions of spores) it will be sufficient for 5 years or more, depending on the scale of application.
One of the advantages of using the Bite technology, is that unlike other pressure endotherapic tools, it penetrates the internal tissues of the tree with a very thin needle that causes a little wound, that can be recovered in about a week. For rapid and optimal absorption of the injected suspension, it is necessary that the treatment is carried out during the vegetative season, when the trees are at their maximum transpiration rate.

## Lessons learned

This innovative, low-impact instrument has shown very good results in the phytosanitary control of tree diseases, with no environmental impact, a minimum impact on the plant, and a reduced time-consumption for the application.
Given the reduced time required for the treatments, the high cost of the instrument can be reduced by organizing chestnut growers in a consortium, in order to make a community purchase to recover the expense.

## For further information contact

Salvatore Moricca, Professor, University of Florence, Italy, email: Salvatore.moricca@unifi.it

Rodolfo Picchio, Professor, University of Tuscia, Italy, email: r.picchio@unitus.it

Francesca Giannetti, Assistant Professor, University of Florence, Italy, e-mail: francesca.giannetti@unifi.it

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## Further information

https://www.psingeca.it/it

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