

## Evaluation of susceptibility to *Dryocosmus kuriphilus* (Hymenoptera: Cynipidae) in *Castanea sativa* and in hybrid cultivars



Elena Blanco Lago (Cesefor)

### Keywords

forest nuts

orchard plantation

chestnut

gallwasp

### NWFP

Wild Nuts & Berries

### Scale

Global

### Context

Tests to determine cultivars resistant to chestnut gallwasp had been conducted in Japan (Kajiura and Machida 1961). However, some cultivars that appeared to be resistant were subsequently infected. The present research proposes to evaluate the sensitivity of a representative catalogue of cultivars in Europe in order to ensure better yields in chestnut groves. To this end, during 3 years, 41 cultivars, 7 interspecific hybrids, were infested in a controlled manner, recording the number of galls afterwards.

### Objective

The aim is to determine different levels of sensitivity of different cultivars to the chestnut gall wasp. Among the cultivars that have been evaluated are interspecific hybrids and traditional European cultivars.

### Results

Complete resistance was observed only in *Bouche de Betizac*, and the highest was in *Marsol*, while the cultivars of *Castanea sativa* showed different levels of sensitivity, high, medium or low, the levels being determined by the number of galls and their impact on the plant. The wasp lays eggs on all buds, including resistant chestnuts and different types of preference depending on size, texture and the presence of volatile substances in the bark.



## Recommendations

European cultivars must be preserved as they represent an important biological diversity. In future plantations, in areas where the chestnut gallwasp is being implanted and its subsequent biological control, the choice of cultivar must be taken into account. Similar studies have been carried out in other European countries (Spain 2018).



## Impacts and weaknesses

The result of the study helps to select future plantations for producers, to evaluate at an early stage of infection of the chestnut gallwasp pest and its impact on biodiversity and the economy. However, it may negatively condition those cultivars most sensitive to the chestnut gallwasp.



## Future developments

Future research should investigate resistance in wasp-free *Castanea sativa* trees, look for resistant genotypes and identify sequences involved in cyclic resistance and agronomically interesting genetic traits

### Further information

C. Sartor, R. Botta, F. Dini, D. Torello Marinoni Dipartimento di Scienze Agrarie, Forestali e Alimentari  
Universita' degli Studi di Torino  
ITALIA

| Author   | Rapporteur   | Published on           |
|--|--|------------------------|
| Contact<br><b>Roberto Rubio Gutiérrez</b><br><a href="mailto:Roberto.Rubio@ceseфор.com">Roberto.Rubio@ceseфор.com</a><br><a href="http://www.ceseфор.com">www.ceseфор.com</a><br>Organisation<br><b>University of Torino</b><br>Country and region<br><b>Italy, Piedmont</b> | Name<br><b>Roberto Rubio</b><br>Organisation<br><b>Fundación Centro de Servicios y Promoción Forestal y de su Industria de Castilla y León (CESEFOR)</b><br>Email<br><b>(hidden)</b> | <b>10 January 2020</b> |

### About INCREDIBLE Project

INCREDIBLE project aims to show how Non-Wood Forest Products (NWFP) can play an important role in supporting sustainable forest management and rural development, by creating networks to share and exchange knowledge and expertise. 'Innovation Networks of Cork, Resins and Edibles in the Mediterranean basin' (INCREDIBLE) promotes cross-sectoral collaboration and innovation to highlight the value and potential of NWFPs in the region.



### Funding

'Innovation Networks of Cork, Resins and Edibles in the Mediterranean basin' (INCREDIBLE) project receives funding from the European Commission's Horizon 2020 programme under grant agreement N° 774632.