

10<sup>th</sup> International Conference on

# AGRICULTURE & HORTICULTURE

October 02-04, 2017 London, UK

## Tolerance of *Castanea sativa* cultivars to *Dryocosmus kuriphilus*

Tiziana Panzavolta, Matteo Bracalini, F Croci, A Turchi, E Giordani and R Tiberi  
University of Florence, Italy

**Background & Aim:** The invasive Asian chestnut gall wasp (ACGW) (*Dryocosmus kuriphilus* Yasumatsu) is a major insect pest in chestnuts (*Castanea* spp.), in all its areas of distribution. ACGW gall formation can cause heavy reductions in plants' growth rates and fruiting, severely damaging the chestnut market. Some chestnut species and hybrids have proven to be tolerant of ACGW, this was probably due to a hypersensitive response to ACGW attack. Some *C. sativa* Mill. cultivars showed different tolerance levels to the ACGW. The purpose of this study is to extend current knowledge about the tolerance of *C. sativa* cultivars to ACGW.

**Methodology & Theoretical Orientation:** Some *C. sativa* cultivars grown in the municipality of Pistoia (Tuscany, Italy) were morphologically and genetically analyzed. Current-year shoots were collected from the same trees to determine ACGW attack levels, since the number of galls per shoot is related to nut yield losses.

**Findings:** Three *C. sativa* cultivars were identified, each showing significantly different tolerance levels to the ACGW: Carpinese, Nerattino and Pastinese. More specifically, Carpinese showed the highest level of attack, with an infested shoot rate of 84.38%, the highest number of galls per shoot, as well as bigger galls. On the contrary, Nerattino had the lowest attack rate, with only 53% of shoots affected, the lowest number of galls per shoot, and the smallest galls. Pastinese parameters were in between.

**Conclusion & Significance:** All the cultivars studied were attacked by the ACGW, however they had different tolerances to the insect. More research on this field will help in creating a list of the more highly tolerant cultivars, which can be used for new plantations and graft nurseries.

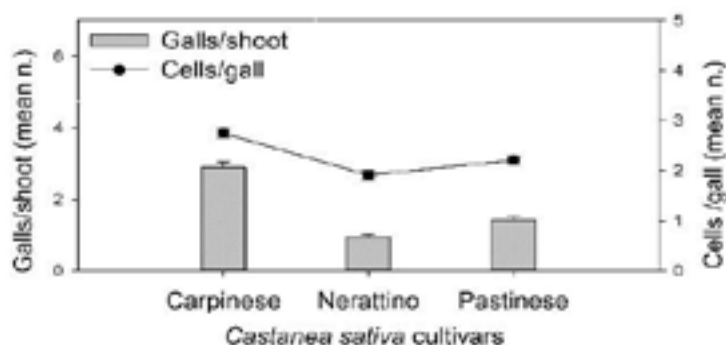


Figure 1. Attack level of *Dryocosmus kuriphilus* on three *Castanea sativa* cultivars in Tuscany (Italy)

### Biography

Tiziana Panzavolta is a Researcher in the Department of Agri-food Production and Environmental Sciences at the University of Florence (Italy). Her field of expertise is bio-ecology and control strategies of forest and urban insect pests, as well as of invasive insect pests. Among her interests are tritrophic interactions (plant-phytophagous insect-natural enemy), particularly the role of pine terpenes in host selection and oviposition by pine processionary moth and its egg parasitoids, as well as the effects of pine monoterpenes and insect pheromones on predators of saproxylic insects.

tpanzavolta@unifi.it