Accepted Manuscript

Emerging new crown symptoms on *Castanea sativa* (Mill.): attempting to model interactions among pests and fungal pathogens

Andrea Vannini, Carmen Morales-Rodriguez, MariaPia Aleandri, Natalia Bruni, Matteo Dalla Valle, Tommaso Mazzetto, Diana Martignoni, AnnaMaria Vettraino

PII: S1878-6146(18)30100-4

DOI: 10.1016/j.funbio.2018.05.006

Reference: FUNBIO 933

To appear in: *Fungal Biology*

Received Date: 23 January 2018

Revised Date: 7 May 2018

Accepted Date: 22 May 2018

Please cite this article as: Vannini, A., Morales-Rodriguez, C., Aleandri, M., Bruni, N., Valle, M.D., Mazzetto, T., Martignoni, D., Vettraino, A., Emerging new crown symptoms on *Castanea sativa* (Mill.): attempting to model interactions among pests and fungal pathogens, *Fungal Biology* (2018), doi: 10.1016/j.funbio.2018.05.006.

Emerging new crown symptoms on *Castanea sativa* (Mill.): attempting to model interactions among pests and fungal pathogens

Andrea Vannini, Carmen Morales-Rodriguez, MariaPia Aleandri, Natalia Bruni, Matteo Dalla Valle, Tommaso Mazzetto, Diana Martignoni, AnnaMaria Vettraino

DIBAF – University of Tuscia, Via S. Camillo de Lellis, 01100 Viterbo (Italy)

Abstract

In the 2015-2016 growing seasons, two novel symptoms were assessed on the crown of trees in orchards and coppices of chestnut groves in Central Italy. The first symptom was flagging of annual shoots with green leaves undergoing sudden wilt and turning brown later in the season. The second symptom consisted of leaves on annual shoots turning yellow before wilting in absence of flagging represented the second symptom. Samples were collected along transects in early summer, late summer and winter, and processed in the laboratory. The flagging symptom was associated in early summer with the presence of *C. parasitica* in cryptic dried buds on stems from the previous year's growth. The pathogen was also found in dormant buds in winter, suggesting that the infection could take place in summer during the Chinese gall wasp oviposition period. *Cryphonectria parasitica* was also isolated from abandoned galls in winter supporting the hypothesis that galls are a potential source of inoculum for crown infections. Aetiology of yellowing was not clarified and no fungal taxa were specifically associated with this symptom. *Gnomoniopsis castanea*, *Cryphonectria parasitica* and, in early summer, *Colletotrichum acutatum* were the most abundant fungal taxa isolated from chestnut shoots and buds.

Keywords: chestnut diseases; flagging; yellowing; *Cryphonectria parasitica*; *Gnomoniopsis castanea*; *Colletothricum acutatum*

Introduction