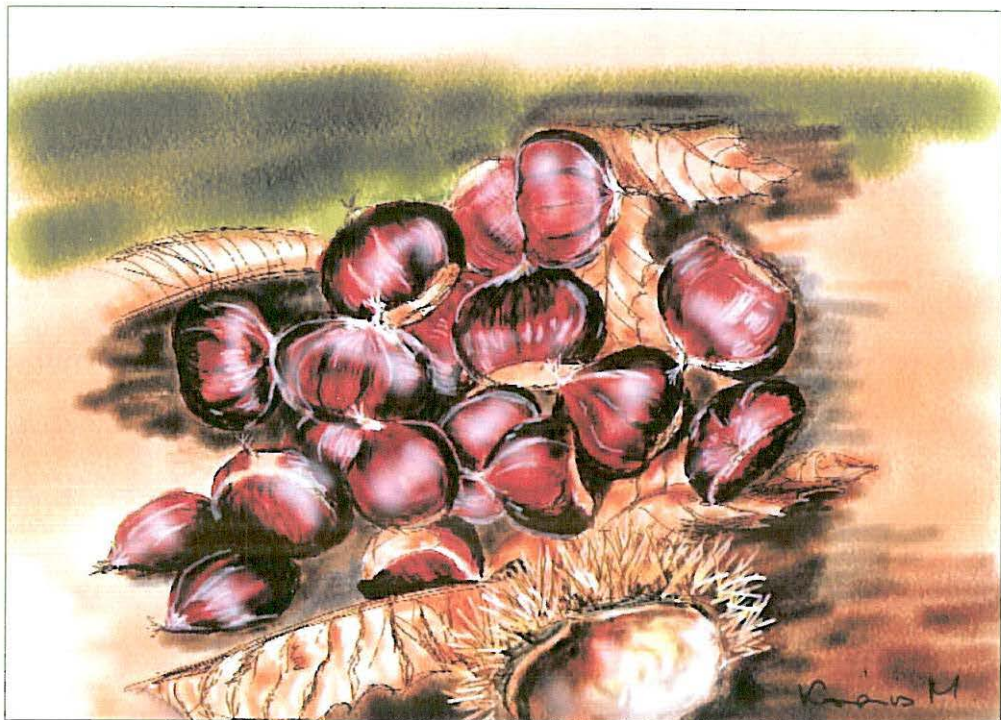


# BOOK OF ABSTRACTS

II. EUROPEAN CONGRESS ON CHESTNUT  
09-12. October, 2013.



DEBRECEN - BAIA MARE - MODRY KAMEN

**Assessing zoospore *Phytophthora* activity to enhance disease management and promote ecological surveillance of Chestnut Ink Disease.**

**E. Gouveia, L. F. Nunes**

CIMO Centro de Investigação de Montanha Escola Superior Agrária

Instituto Politécnico de Bragança

Campus de Santa Apolónia – Apartado 1172, 5301-855 BRAGANÇA

**Abstract**

*Phytophthora cinnamomi* and *P. cambivora* are soil borne Oomycetes that cause Chestnut Ink Disease, a lethal and widespread disease of the European chestnut (*Castanea sativa* Mill. Zoospores are the main infective propagules that actively swimming in liquid environments, reach the roots, encyst and infect the host. Gathering these biological characteristics we studied, on potting mix previously infested with *P. cinnamomi*, zoospore release and environmental conditions that promote zoospores production and host infection on different host plants (*Castanea sativa*, *Camellia japonica*, *Ilex aquifolium*), and different time-span of flooding,. Data analysis made by nonparametric Kruskal-Wallis test, followed by multiple comparison of mean ranks found that infection of *P. cinnamomi* is significantly higher ( $p < 0.001$ ) in *C. sativa*. Concerning *C. sativa*, no significant differences were detected for studied environmental conditions and time-span of flooding using a nonparametric two-way ANOVA. In natural soils, collected around the canopy of diseased chestnut trees, *Phytophthora* revealed a similar pattern of zoospore activity even when compared to the infested growing potting mix used as positive control. Variability between samples from the same tree was associated with physiographic and edaphic conditions which determine the biological stage and prevalence of *Phytophthora* species in soil. Using this successful, simple and rapid methodology enables detailed studies on the ecology of soil borne *Phytophthora* and the possibility to promote ecological surveillance and also enhance sanitary management practices.