MACROFUNGI ASSOCIATED WITH *CASTANEA SATIVA* IN NORTHEAST OF PORTUGAL. TEMPERATURE AND RAINFALL EFFECT ON FUNGAL FRUCTIFICATION

Paula Baptista[1], Anabela Martins[1], Rui Tavares[2] and Teresa Lino-Neto[2]

[1] *CIMO- Escola Superior Agr ria, Campus de Sta. Apol nia, Apt. 1172, 5301-855 Bragan a, Portugal*

[2] *Departamento de Biologia/Centro de Biologia, Universidade do Minho, Campus de Gualtar, 4710-057 Braga, Portugal*

Key words: macrofungi, abundance, diversity, *Castanea sativa*, ecology.

Macrofungal fructification is a seasonal event related with environmental factors, such as temperature and rainfall. A relationship with climatic factors and sporocarps production has been established but these correlations differs considerably from environment to environment. In this context, the present work aims were *i*) to known the macrofungal community associated with chestnut tree, *Castanea sativa* Mill. and the community changes over time in the Northeast of Portugal; and *ii*) to evaluate the possible effect of temperature and rainfall on macrofungal fructification during three consecutive years.

The study was carried out from 2002 to 2004, in a non-tilled *C. sativa* orchard located in Bragança (29T PG 80 9 36 UTM), Northeast of Portugal. In the orchard, five plots of 100 m^2 each were selected and all the sporocarps were collected weekly (during autumn and spring) or monthly (in the winter and summer periods). All the sporocarps were separated, counted and identified by genera or species. Meteorological data were collected in a climatic station located nearest to studied area. Total rainfall and mean, maximum and minimum temperatures were correlated with number of species, number of sporocarps, as well as total or different trophic groups. This correlation analysis was performed with weather data collected in different periods (5-30 days) before the sampling date. In the course of the work, 87 macrofungal species belonging to 23 genera were identified. About 85% of the collected species were mycorrhizal, from which the genus *Inocybe* spp. and *Russula* spp. contained the highest number of species. The environmental conditions, especially the rainfall, seem to have influence on macrofungal fructification mainly during the autumn period when the number of species and individuals were more abundant. The abundance and biodiversity as well the evolution of number of macrofungal species along the three years will be discussed. Correlation analysis between data weather and fungi variables will be also analysed in order to evaluate their effect on macrofungi production in Northeast of Portugal.

Acknowledgements: The authors are grateful to AGRO Project 689 for financial support of this work.