II Congresso Iberico do Castanheiro

Universidade de Trás-os-Montes e Alto Douro
Vila Real, Junho 20-22, 2007

utad Univ. Trás-os-Montes e Alto Douro

Sessão 3

Biologia, Fisiologia, Genética / Biología, Fisiología, Genética

S3.01 Abreu, I., Ribeiro, H., Oliveira, M., Aira, M.J., Rodríguez-Rajo, F.J., Jato, V.

Castanea airborne pollen at the northwest of the Iberian Peninsula

The airborne concentration of *Castanea* pollen was studied at five stations in different parts of the NW Iberian Peninsula, using Hirst-type spore-traps, during 2003-2006. The spatial distribution of *Castanea* pollen, the start of the main pollination period and airborne concentrations varied among the different sampling places. Porto, Santiago and Lugo registered the highest concentrations in the first two years while Vigo and Ourense in the last two years of the study. The correlation analysis performed between airborne pollen concentration and the meteorological parameters suggests positive relationships with the thermal parameters and negative relationships with rainfall and relative humidity.

S3.02 Monteagudo, A.B., Fernández-López, J.

Reference values of genetic parameter in Spanish chestnut conservation

Genetic parameters such as effective number of alleles, expected heterozygosity and percentage of polymorphic loci were calculated to Spanish chestnut stands. These parameters were calculated with forest conservation and management purposes as reference values of the existing genetic diversity of Spanish chestnut.

S3.03 Barreira J.C.M., Ferreira I.C.F.R., Oliveira M.B.P.P., Pereira, J.A.

Antioxidant activity of chestnut constituents: flowers, leaves, skins and fruits

In this study, the antioxidant properties of different chestnut constituents (flowers, leaves, skins and fruits) were evaluated through several biochemical assays: DPPH (2,2-diphenyl-1-picrylhydrazyl) radical scavenging activity, reducing power, inhibition of β-carotene bleaching, inhibition of oxidative hemolysis in erythrocytes, induced by 2,2'-azobis(2-amidinopropane)dihydrochloride (AAPH), and inhibition of lipid peroxidation in pig brain tissue through formation of thiobarbituric acid reactive substances (TBARS). These assays have been extensively studied as models for the peroxidative damage in biomembranes. For all the methods EC_{50} values were calculated in order to evaluate the antioxidant efficiency of each product. The phenol and flavonoid contents were also obtained and correlated to antioxidant activity. Chestnut skins revealed much better antioxidant properties, presenting much lower EC_{50} values, particularly for lipid peroxidation inhibition in TBARS assay. Also, the highest antioxidant contents (phenols and flavonoids) were found for this constituent.

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