

DCEA - Department of Environmental Sciences and Engineering Title

GUECKO Team – FCT, CENSE, CEF

Internat.ional Collaborations: Monash University, Melbourne, Australia; University of Life Sciences & Natural Resources, Vienna, AU; Goettingen Univ., DE; Dresden University, DE; INRA, Bordeaux, Orléans, FR; Agricultural Research Centre, Israel; NERC Centre for Ecology & Hydrology, UK.



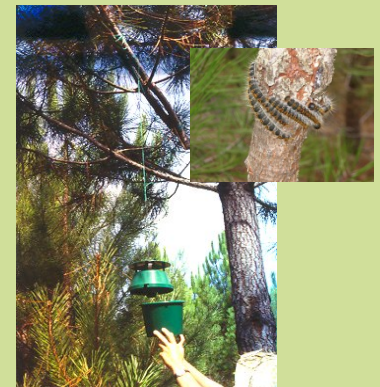
GUECKO TEAM

- *M^a Rosa Paiva, PhD, Professor,
- *Eduardo Mateus, PhD
- *Helena Santos, PhD
- *Sofia Branco, MSc and PhD Student

Objectives

Research interests and projects:

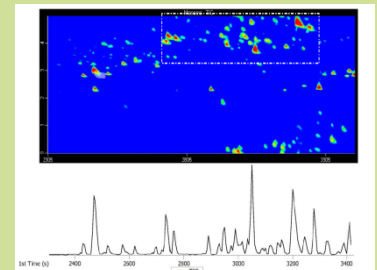
- * Integrated protection of agricultural and forest cultures against biotic agents/ Implementation of bio-technological strategies for pest management.
- * Chemical ecology : decoding of communication used within and among trophic levels.
- * Habitat and biodiversity management / Control of invasive exotic species and economic aspects.
- * Sympatric evolution : study of an extremely rare, on going case.
- * Gender mainstreaming in science.



Biotechnological control of insect pests

Methodology

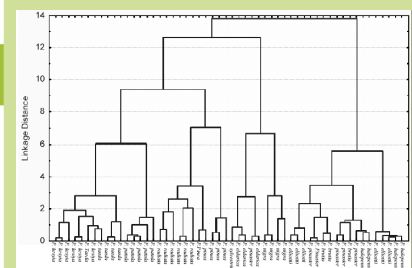
- * Ecological methodologies: field and laboratory, including maintenance of insect cultures
- * Chemistry: GC/MS state of the art techniques
- * GIS
- * Genetic analysis
- * Ecological economic perspectives applied to ecosystem evaluations



GCxGC and GC/MS analysis of Semochemicals

Expected Results

- *BRANCO S., VIDEIRA N, BRANCO M, PAIVA MR. 2013. Economic valuation of invasive alien species impacts on eucalypt stands and citrus orchards ecosystem services. Biological invasions, *submitted*.
- *SANTOS H, PAIVA MR, TAVARES C, KERDELHUÉ C, BRANCO MR. 2011. Temperature niche shift observed in a Lepidoptera population under allochronic divergence. J. Evol. Biology, 24: 1897-1905. doi: 10.1111/j.14209101.2011.02318.x
- *PAIVA MR, MATEUS E, SANTOS MH, BRANCO MR. 2011. Pine volatiles mediate host selection for oviposition by *Thaumetopoea pityocampa* (Lep., Notodontidae). J. App. Entomology 135 (3), 161 -240. <http://onlinelibrary.wiley.com/doi/10.1111/j.1439-0418.2010.01550.x/abstract>, 2011
- *MATEUS E, BARATA RC, ZROSTLÍKOVÁ J, PAIVA MR, GOMES DA SILVA MDR. 2010. Characterization of the volatile fraction emitted by *Pinus* spp. by one and two dimensional chromatographic techniques with mass spectrometric detection. Journal of Chromatography A, Volume 1217 (11): 1845 - 1855. <http://www.ncbi.nlm.nih.gov/pubmed/20144462>



Dendrogram: hierarchical cluster analysis for 12 pine species based on volatile emissions.

