



Highlights: CITAB First Stakeholders Committee Meeting



Stakeholders panel and CITAB Researchers.

Bringing together innovative research and industrial targets

Apart from an External Scientific Advising Committee, CITAB created a Stakeholders Committee which met with all members last January.

Thus, another major objective has been fulfilled. We welcome the valuable comments from this group of expertises and industry managers, which expressed a general positive feeling about the Unit, our progress and recent achievements, and sharply pointed to a higher prioritization of our scientific activities.



CITAB researcher Jose Louzada has developed an unique method for dating old olive trees.

CITAB Researchers certifies an 1098 year old olive tree

Known and admired for their longevity, the famous olive tree of Espinheiro Convent, Évora, now has a certified age of 1098 years. Dating was carried out by the University of Trás-os-Montes and Alto Douro (UTAD), the only national entity with authority to certify the age of trees that are hundreds or even thousands of years old.

The dating method was developed by the CITAB researchers José Luis Louzada and Pacheco Marques, and is undergoing a patent process. These researchers have developed a non-destructive method that allows the age of any very old tree (up to three thousand years) to be estimated using a mathematical model that relates age with dendrometric stem parameters (radius, diameter or perimeter).



In this edition



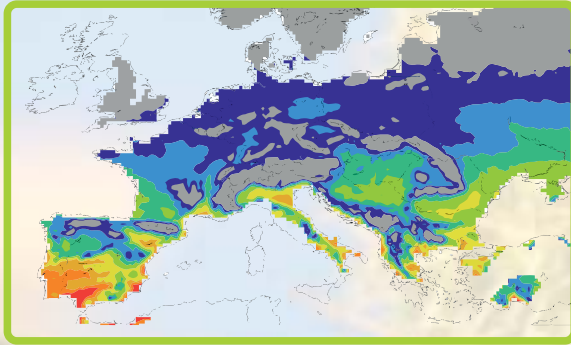
News & Events



Research Notes



Mobility & Actions



Huglin Index averaged over 1950-2009 in Europe (E-OBS dataset).

Cilus Plus®: a new promising strategy in the prevention of Chestnut ink disease

A protocol has been established between the Chestnut Research Group (part of CITAB's SAC subgroup) and Massó, S.A., Agro Division, for the study of the effect of Cilus Plus® in the chestnut protection against ink disease (*Phytophthora cinnamomi*). The study is coordinated by José Gomes Laranjo and Luís Martins.

Cilus Plus® is composed of *Bacillus velezensis*, a phosphate solubilising bacteria that occurs in the soil, simultaneously increasing P uptake by the plant and crop yield. Results indicate that plants fertilized with Cilus Plus® survive better, presenting higher root system development, photosynthetic rate and phenol content, than control plants.



Taynan Tupinambás and Diego Castro from the "Laboratório Ecologia de Bentos" of the Federal University of Minas, Brazil, visited CITAB in late 2010.

Viticulture and Climate Change

The assessment of climate change impacts on viticulture in Europe, and more specifically in Portugal, was recently carried out by two CITAB investigators, João Santos and Aureliano Malheiro, in collaboration with the University of Cologne (Germany) and two post-graduate students. The results of this research have been published in two JCR journals: "**Climate change scenarios applied to viticultural zoning in Europe**" *Climate Research* 43: 163-177; and "**Statistical modelling of grapevine yield in the Port Wine region under present and future climate conditions**", *International Journal of Biometeorology* 55: 119-131.

Results suggest significant changes in the geographical distribution of European winemaking regions, urging the development of suitable adaptation/mitigation measures. Further efforts are now being implemented in order to better understand the relationships between climate and grapevine phenology.

Brazilian students visit CITAB: sharing knowledge and future collaboration

On the 7th of December 2010, CITAB's freshwater researchers played host to two postgraduate students from the "Laboratório Ecologia de Bentos" of the Federal University of Minas, Brazil, run by Professor Marcos Callisto. Taynan Tupinambás (doctoral student) and Diego Castro (masters degree student), are both matriculated in the University's Post graduate Programme in Ecology, Conservation and Wildlife Management.

In an open session, Taynan spoke on "**Benthic invertebrates as indicators of river impoundment impact downstream of a hydroelectric dam**" followed by Diego who spoke about "**The Influence of flow variation on benthic macroinvertebrate drift downstream of a hydroelectric dam**". Methodologies, habitat assessment and data analysis were discussed. CITAB members gave suggestions on European methodologies for determining ecological status, and the European Water Framework Directive. CITAB members Rui Cortes, Samantha Jane Hughes, Simone Varandas, Edna Cabecinha, Joaquim Jesus and João Soares Carrola gave talks on CITAB's freshwater based research covering ecological monitoring, behavioural studies, ecological modelling and ecotoxicology.

COST Action FA1005

CITAB Director, Eduardo Rosa, has been nominated as a MC Member to COST Action FA1005 (**Improving health properties of food by sharing our knowledge on the digestive process - INFOGEST**) by Dr^a Fernanda S. Sepúlveda (COST National Coordinator [PT]). The main objective of FA1005 is to divulge and improve current basic knowledge on food digestion, on the release of protein beneficial food components during digestion that are known to have a potential effect on human health and to promote harmonization of currently used digestion models. More information in http://www.cost.esf.org/domains_actions/fa/Actions/fa1005.



International collaboration with the Tunisian Olive Tree Institute

A bilateral scientific and technological project **“Abiotic stress in olive: early detection and management”**, was recently approved for funding by the Portuguese Foundation for Science and Technology (FCT) and the Ministry of Higher Education and Scientific Research of Tunisia. CITAB researcher Eunice Bacelar visited the Tunisian Olive Tree Institute, responsible for research, studies, experiments and information-oriented actions to develop both the olive sector and fruit arboriculture in the semi-arid zone.

Dalenda Boujnah, the responsible for the project, revealed research projects underway at the Sousse research station. The visit focused on aspects of joint interest for the Portuguese and Tunisian teams such as the early detection and management of abiotic stresses in olive. Several experimental orchards in Jemmel, Souassi, Monastir, Kairouan and Ettaous were visited and Eunice Bacelar met Boubaker Karray, the Director of the Institute, which identified future research collaborations.



CITAB researcher Eunice Bacelar visiting the Tunisian Olive Tree Institute.

Iberian Seminar on “pedestrianism”

The Iberian seminar **“Ciência, pedestrianismo e saúde: promoção de recursos naturais do território transfronteiriço”**, took place on October 2010 and was focused on multidisciplinary analyses of hiking trails in natural spaces. During the seminar participants learnt about “state of the art” regarding hiking trails assessment via lectures and practical sessions given by several scientists from different fields of research such as Engineering, Geography, Biomechanics, Sports Science, Meteorology, Geology, Biology and Ecology.

The main conclusion of the seminar is the need for hiking enthusiasts to improve global initiatives to increase environmental awareness and action of this sporting activity. Principal aims include enriching nature and reducing energy and material consumption, both during hiking and everyday life thereby reducing significant impacts on global environmental problems. An important outcome of the Seminar was an agreement to create the **Iberian Scientific Networking on “Nordic” Walking (ISNW)**, integrating scientists and members of the private sector.



The Iberian seminar and a practical session of a hiking trail analysis.

Predicting the trends of biodiversity as a response to the ongoing wind farms installation in northwest Portugal:

A general ecological monitoring program has been carried out by a CITAB research team, between 2003 and 2010, to examine possible changes that could occur in the biodiversity of mountain systems affected by wind farm installations. The model developed in this study seems to represent a useful contribution for detecting integrity changes in mountain communities affected by wind farm installations, namely by quantifying the local reduction in vertebrate species richness induced by factors associated to the turbine installation, direct disturbance and habitat changes.



Mountain ecosystems endangered by the installation of wind farms.



The **Science at Lunchtime** integrative activity:
Sandra Mariza presentation regarding the use of fish biomarkers.



Location and contacts

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A single photo enables local vine vigour evaluation.

Bringing researchers together: Science at Lunchtime

CITAB's EcoinTEGRITY group launched the "Science at Lunchtime" initiative in January 2011 with the aim of bringing together the centre's many researchers in an informal setting to learn of each other's work, generate new ideas and discuss "hot topics". "Science at Lunchtime", held monthly, is open to anyone who wishes to attend. A CITAB member is invited to give a presentation or informal talk on an aspect of their research with the aim of generating debate between "Science at Lunchtime" participants.

Members that wish to continue the discussion after the session can then go on to have lunch together or arrange to meet and "brainstorm". The first "Science at Lunchtime" session, given by CITAB's EcoinTEGRITY group leader Professor Rui Cortes was on "**The consequence of dams on fluvial erosion processes: is requalification possible?**". Subsequent themes have included "**The use of fish biomarkers to assess water pollution**" and "**Applications and results and European wine zones: the influence of the atmosphere, trends and scenarios**".

International patent: photography can characterize vine viability

CITAB researcher Ana Alexandra Oliveira has submitted an application for an international patent for an invention that determines the vine vigour using digital photography. This work, co-authored by Paula Cristina Oliveira and João Paulo Moura, with potential in both the national and international winemaking sector, is the result of a study that the team is developing to improve wine quality and wine production, by applying new technologies in viticulture processes and methodologies.

Traditionally, vine vigour was assessed manually by taking cane cuttings from the vineyard and weighing them. This new technique needs only a digital photograph of the vine; a computer programme then determines vine vigour. The method is quick and easy requiring no skilled labour or expensive equipment.

"Eng^a Cruz Azevedo" awards

At the 8th National Congress of Experimental Mechanics (CNME 2010) the Portuguese Association for Experimental Stress Analysis (APAET) presented the "Eng^a Cruz Azevedo" awards for 2007, 2008 and 2009, distinguishing researchers from CITAB. The 2007 award was for the article "**Numerical and Experimental Study of the Variable Span Method for the Identification of Elastic Properties of Wood**", authored by CITAB researchers José Xavier, José Morais and others. In this study, a numerical and experimental methodology was developed for identifying elastic properties of maritime pine wood.