2016 Activities Report

CITAB

Compiled by
CITAB Executive Committee

Edited by
Samantha Jane Hughes & **Lígia Pinto**

- Sustainable Agro-food Chains - SAC
- Ecointegrity - EI
- Biosystems Engineering - BE

Index

1 Executive summary 3
2 Objectives and Achievements 4
2.1 Unit Description 4
2.2 General Objectives 5
2.3 Scientific Objectives 6
2.4 Funding 9
2.5 Main achievements 2016 10
2.5.1 Thematic Strand 1 Main Achievements 10
2.5.2 Thematic Strand 1 Future research 12
2.5.3 Thematic Strand 2 Main achievements: 14
2.5.4 Thematic Strand 2 Future research 15
2.1 Outreach activities 18
2.2 International Doctoral Programmes 22
2.3 International Funded Projects 22
3 Productivity metrics 23
3.1 SCI/JCR articles 23
3.2 Book Chapters 41
3.3 Books 43
3.4 Patents 44
3.5 Masters and Doctoral theses 45
3.5.1 Masters theses 45
3.5.2 Doctoral theses 46
3.6 International projects 48
3.7 – National projects 49
3.8 – Industry contract research 52
4 List of CITAB Members in 2016 53

1 Executive summary

The 2016 Activity Report Plan shows that CITAB is on the way to consolidating the core aims set out in the CITAB 2015-2020 Strategic Plan (PEst), namely ese are to boost internationalisation and to strengthen ties with stakeholders by developing projects that meet their specific needs based on the centre's key areas of expertise. CITAB is now an active project partner in two European Horizon 2020 projects for collaboration and innovation in key areas of agricultural activities. CITAB is also forging ahead with national Projects (Rural Development Programme) founded in conjunction with key stakeholders in the agricultural sector and is also part of the European Long-Term Ecological Research (LTER) network to carry out long-term, large geographic scale ecological investigation monitoring and collation of relevant data across as part of the International network of sites (ILTER).

CITAB's strategic mission is to create opportunities for stakeholders through scientific and technological innovation in agri-food and forestry chains and contribute to environmental sustainability. The 2015-2020 Strategic Plan has two thematic areas:

- Sustainability of Agri-food and Forestry Ecosystems in a changing environment;
- Technology & innovation in Agri-food and Forestry chains for a more competitive bio economy.

Each thematic area comprises a set of tasks based innovative scientific and technological knowledge, developed to make Agri-food and Forestry chains more competitive and sustainable, drawn up in accordance with stakeholder needs. The tasks aim to maximise integrated research and productivity among CITAB's 3 research lines of Sustainable Agro-food Chains, EcoIntegrity and Biosystems Engineering.

CITAB continues to receive just 200 000, 00€ FCT funding (now subject to a higher overheads) which is the equivalent to amount awarded for pluriannual funding. CITAB researchers therefore actively search and apply for extra funding from other sources- such as national and European projects and contracts or consultation with private and public sector companies. CITAB continues to prioritise funding towards contracts for skilled human resources (Masters, PhD and Post-Doctoral grants) to implement Strategic Plan objectives and provision of deliverables that result from the intensive workload of thematic strand workloads.

2 Objectives and Achievements

2.1 Unit Description

CITAB core activities focus on interdisciplinary research on agro-food, forestry and the environment, with input from engineering technologies to enhance development of agro-food and forestry production chains in Portugal. Implemented in 2015, the Strategic Project (SP) presents a new phase in the life of CITAB, characterised by a more streamlined approach, focused into two thematic areas that contribute to resolving societal and private sector issues in agriculture and forestry production chains and their impact on the natural environment. The SP aims to balance scientific excellence with benefits and consequences across multiple dimensions that embrace environmental sciences and socioeconomic needs.

CITAB's activities are based upon on the contribution of integrated members (members with a PhD) and collaborators (members without PhD), selected and assessed using international benchmarking criteria. Most CITAB members are primarily lecturers; therefore, the Unit offers an international doctoral programme and supports host institution post-graduate and others higher education institutes. CITAB management is bottom-up: the Directorate (1 Director and 2 Vice-Directors) is supported by the Executive Committee (ExCo; 6 members-2 from each Working Group and headed by the ExCo president) to form a two-way link between CITAB members and the Directorate for policy and research development.

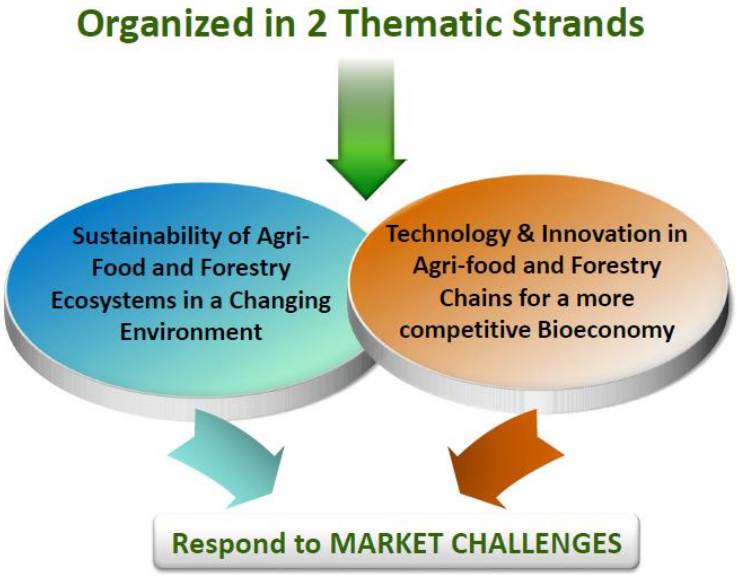
The ExCo is also responsible for compiling information and collaborating in the development of actions to promote CITAB's visibility on local, regional, national and international platforms. Both the Directorate and the ExCo meet approximately once a month. Research group members also hold regular meetings to evaluate group progress according to the Plan of Activities for the current year. The Scientific Council meets a minimum of 4 times a year, as stipulated by regulations. A contracted secretary deals with all administrative duties, and provides support to both the Directorate and the ExCo. A new dedicated press officer will be contracted to divulge CITAB activities at national and international level.

2.2 General Objectives

The SP aims to contribute to resolving societal and private sector (such as small and medium enterprises - SMEs) problems in agriculture and forestry production chains and their impact on the natural environment. The SP achieves this by balancing scientific excellence with benefits and consequences across multiple dimensions, embracing both environmental sciences and socioeconomic needs. The SP is multidisciplinary, addressing both benchmark science and the human dimension of contemporary issues.

The SP has strong challenges, research priorities and objectives drawn up by consulting stakeholders, public institutions and private and public associations in the agriculture and forestry production sectors. The SP has also been developed in line with the objectives of the 2014-2020 National Programme for Rural Development (PDR), the Portugal 2020 national strategy for improving competitiveness and internationalization of economic activities and the international Horizon 2020 programme. By developing the SP in tandem with key national and international strategies, CITAB will reinforce its relevance in the development and implementation of national and international policies and obtain additional finance to support tasks that will contribute to meeting SP objectives.

The two SP research topics were assessed and validated by CITAB's Stakeholder Committee, the Scientific Advisory Committee, and Scientific Council. The research topics take into account national and regional needs to boost capacity and fill gaps in science. The predicted outcomes are drawn up in accordance with the FCT finance requested for the Strategic Programme as well as other sources of finance.



The overall objective of this far reaching SP is to provide a model for developing sustainable yet competitive agri-food and forestry chains. R&D initiatives serve as pilot projects for agri-food and forestry chains and environmental issues. This will boost competitiveness, empower stakeholders and SMEs, sustain livelihoods, promote responsible stewardship and governance of the natural environment and the ecosystem services it supplies.

2.3 Scientific Objectives

The two tasks allow CITAB to (i) promote a higher research profile based on international benchmarking criteria, (ii) carry out groundbreaking national and international research and (iii) guide effective governance and management of natural resources. Research priorities must be economically efficient, environmentally compatible and driven by sustainable socioeconomic paradigms. Research is divided into two strongly multidisciplinary thematic strands (TS) that build on existing expertise to meet specific goals within the objectives set out in Table 1.

TS1 - Sustainability of Agrifood and Forestry Ecosystems in a Changing Environment: addresses how impacts affect agri-food and forestry chains systems, biodiversity and ecosystem services. TS1 develops effective measures for sustainable strategy development, planning and governance. TS1 promotes multidisciplinary research to develop tools and methodologies to assess how impacts multiple scale impacts affect ecosystems and biodiversity by testing innovative monitoring techniques and developing spatially appropriate dynamic models to develop and implement regional adaptation & mitigation strategies and support decision making processes. The two tasks set out under TS1 are Task 1.1 Integrated monitoring of climate and environmental impacts: adaptation and mitigation strategies and Task 1.2. Conservation strategies and ecological modelling: recovering and improving sustainability in agri- food and forestry ecosystems and ecosystem services.

Table 1. A summary of the thematic strands and tasks of the 2015 - 2020 Strategic Programme.

Thematic Strands & Tasks description	
TS1 - Sustainability of Agri-food and Forestry Ecosystems in a changing environment	
Task 1.1 Integrated monitoring of climate and environmental impacts: adaptation and mitigation strategies	**Development and implementation of new analytical techniques and integrated monitoring systems**
	Database compilation

	Analysis, scaling, modelling tools testing indicators of environmental change
	Physiological adaptations and mitigations strategies
Task 1.2. Conservation strategies and ecological modelling: recovering and improving sustainability in agri- food and forestry ecosystems and ecosystem services	**Ecological Modelling**
	Ecosystem services
	Conservation and recovery strategies
TS2 - Technology & innovation in Agri-food and Forestry chains for a more competitive bioeconomy	
Task 2.1 - Innovative technologies and processes	**Physiological and management tools**
	New technological applications to agriculture and forestry
Task 2.2 - Bio-based products and waste research	**Waste research and treatment**
	Transformation and structural characterization of new products with bio-based value
	Biological activities
Task 2.3 -Towards valorisation of agro-food co-products	**Toxicity and pharmacokinetic evaluation and modulation**
	Metabolomic approaches
	Protocol Development: new procedures for clinical and toxicological evaluation and animal care

Results from these tasks, allow key stakeholders to develop optimal management strategies to guarantee sustainability and competitiveness in agri-food and forestry chain environments influenced by various types of impacts. Findings are fundamental for governance and other decision-making and planning processes in regional strategy. The SP will increase regional valorisation and competitiveness in agriculture and forestry production chains by reducing costs and risks and simultaneously contributing to improved ecosystem sustainability and provision of ecosystem services by reducing impacts.

TS2 - Technology & innovation in Agri-food and Forestry chains for a more competitive bioeconomy: on regional, national and international trends on agro-food industry stakeholder profiles and regional agri-food, forestry and socioeconomic characteristics. TS2 uses a sequential model to strengthen sector competitiveness, using innovation to improve the range of products on offer. The TS2 sequential model comprises three tasks, namely Task 2.1 - Innovative technologies and processes, Task 2.2 - Bio-based products and waste research and Task 2.3 -Towards valorisation of agro-food co-products.

The TS2 sequential model focuses on R&D innovative technologies and processes to valorise products and optimise processes in the recycling, reuse & recovery of raw materials in agri-food and forestry chains. TS2 also provides positive feedback into TS1 by reducing impacts from these sectors on the natural environment and natural resources.

2.4 Funding

Table 2. A summary of sources and amounts of CITAB funding in 2016.

	2014	2015	2016	Subtotal
FCT Pluriannual	110.051,00€	200.000,00€	200.000€	**510.051,00€**
FCT Incentivo	16.162,00€	**---**	---	**16.162,00€**
FCT Projects	440.267,94€	86.151,27€	90.962,11€	**617.111,32€**
Other (National)	2.641.877,84€	937.924,18€	1.189.518,30€	**4.769.320,32€**
Other (International)	374.114,75€	322.049,13€	290.854,96€	**987.018,84€**
Industry (National)	145.915,58€	202.814,00€	589.069,37€	**937.789,95**
Industry (International)	400,00€	0,00€	0,00	**400,00€**
Total	**3.728.789,12€**	**1.748.938,57€**	**2.360.134,74€**	**7.837.862,43€**

2.5 Main achievements 2016

2.5.1 Thematic Strand 1 Main Achievements

We studied the driving mechanisms of climate variability and climatic extremes in Portugal and the effects of climate variability on crop phenology, growth and yield, using both statistical and dynamical modelling approaches. We also evaluated the root and stem water dynamics of different crops to identify survival strategies under different pedoclimatic conditions. We assessed the efficiency of spraying kaolin on leaves to reduce canopy temperature and mitigate damage resulting from excessive insolation. We also determined how this exposure influences water dynamics, photosynthesis and yield in grapevines under a typical Mediterranean climate regime. We also assessed the efficiency of mycorrhizal associations in reducing plant stress under drought conditions.

We improved knowledge on fire regimes in Portugal, associations with human and environmental factors and estimates of fire incidence, danger and risk for future scenarios of global change. We studied associations between climate and wood properties in Portugal studied as potential proxies for dendroecological studies.

Precipitation-runoff models, with embedded ecological tools, were calibrated/validated and applied to several Portuguese river basins. This research contributed to a better understanding of the water cycle at basin scale and the role of natural/human pressures in sustainable water resources, conservation and ecosystem recovery strategies.

We assessed how different levels of biological organization can improve integrated environmental quality assessment methods in lotic systems and research on cause-effect relations along multiple-disturbance gradients. Biological parameters were incorporated from lower scales (e.g. biomarkers) to higher levels of organization (e.g. bio-indicators). We assessed integrated biological quality element associations with descriptors of land use, landscape metrics and pressure parameters, as predictors and drivers of ecological quality across different river typologies.

We described and demonstrated how different multi-model approaches can predict spatially dynamic ecological responses to large-scale land use and climate change. We applied this to relevant biophysical parameters (i.e. primary productivity, climate and habitat structure) that are important in determining biodiversity response patterns, landscape composition and ecosystem services. We integrated different modelling techniques (Multi-Model Inference statistical analysis, System Dynamics, Agent Based Models, Cellular Automata and Geographic Information Systems) to provide realistic ecological responses patterns to anthropogenic and environmental drivers and showed how existing databases can be used to assess complex, multi-

scale emergent problems. This promising integrated approach allows better understating of ecosystem function, providing credible output to decision-makers and managers to support biodiversity conservation measures.

We developed, tested and applied predictive and multivariate methodologies for decision support in the management of endangered populations of *Phengaris alcon* in Portugal. We improved the accuracy of Mark Release Capture models for insect populations and disseminated results of adult demography, spatial distribution and movements of *Phengaris alcon* (Lepidoptera: Lycaenidae). We developed statistical studies for research in microbiology and microorganism studies (*F. Huffmanela* sp. (Nematoda: Trichosomoididae) from *Microchirus azevia* captured off Portuguese coast.)

We studied and modelled the impacts of wildfires on runoff at the river basin ecological scale in under changing Mediterranean environment scenarios and estimated climate change effects on the design of retention basins. We assessed the influence of dataset characteristics, fire prevention policy, weather and climate on the space-time clustering analysis of wildfires. This was associated with relevant studies on the evolution of forest fires in Portugal using different methodologies, from spatio-temporal point events to smoothed density maps and the distribution of forest fires in Portugal.

We tested different techniques on actions to restore the ecological function and rehabilitate degraded environments in aquatic ecosystems under extreme hydrological events (drought and floods). We analysed how land use change and extreme events (mainly wildfire) in forested catchments affect flood events, soil loss, nutrient leaching, biodiversity, water quality and ecosystem services provisioning This multidisciplinary research integrated aquatic system components (environmental flows, control of exotic species and protection of endangered fish species by river regulation) based on the R. Vilariça (R. Sabor catchment) study site. The Vilariça has been subject to habitat improvement and environmental flow regimes to improve the reproductive success of native fish species (Iberian barbell and nase) as part of a series compensation measures to offset the construction of the lower R. Sabor dam.

We started developing an innovative integrative “One health” modelling project on multifunctional understanding of ecosystems using landscape, environmental, ecological and molecular genetic data. Landscape genetics and genomics are emerging interdisciplinary research fields, revolutionized by advances in high-throughput DNA sequencing technologies and bioinformatics. The multi-model StDM (Stochastic Dynamic Methodology) framework is constantly subject to tests to improve performance as new research challenges arise. This results in more powerful and accurate predictions of biological patterns in changing

environments. StDM frameworks were used to predict occurrence patterns of endangered wild species and the occurrence of zoonosis positivity (serological and/or molecular) to leptospirosis, brucellosis and Lyme disease in target regions, StDM took into account scenarios of climate, water resources and land use change in agro-forestry ecosystems. An StDM modelling framework to assess the role of Green Infrastructures - namely Riparian zones in the landscape was initiated in 2016. Catchment level scenarios of change (e.g. socio-economic patterns) are under development to assess effects on riparian ecosystem service (ES) provisioning. The case study site, the River Sabor catchment, will take into account dynamic links between fundamental riparian processes, ecosystem services and societal wellbeing. The model will address stakeholder interests and conflict in relation to longitudinal gradients of change. We also developed and tested a StDM model to assess large-scale (e.g. land use change) effects and stochastic events (in this case wildfire) on elements used to classify waterbodies under the Water Framework Directive.

2.5.2 Thematic Strand 1 Future research

TS1 research will continue in agreement with the strategic plan. Our goal for 2017 is to continue bringing all these new perspectives together to potentiate better assessment of the likely impacts of a changing climate and environment on target systems. This will enable the development of suitable, timely and cost-effective adaptation and mitigation measures:

- A main TS1 research objective is to enhance the state-of-the-art understanding of the responses of the crops to climate, environmental stresses and water availability. Research on the mechanisms underlying the physiological and agronomic processes will be an important priority; findings provide guidelines to stakeholders. This research will foster resource-efficient economic growth and the safeguarding of agricultural jobs in this economically very important sector in Portugal.
    - Use of crop models for short-term prediction of crop parameters and long-term assessment of climate change impacts on crops. Calibration and validation of simulation models to predict vineyard and olive orchard yields under typical Portuguese growth conditions. Inclusion of sub-models to deal with the main biotic and abiotic hazards.
    - Model output as a predictive tool for wine grape and olive oil production in Portugal and as a management tool to improve the viticulture chain. We use an ensemble of Earth model simulations of anthropogenic climate change (CMIP5 and RCP-IPCC emission scenarios) to drive crop models/sub-models to make accurate predictions on potential future yields.
    - Development of climate change adaptation measures and mitigation strategies.

Development and application of short-term adaptation measures, as the first protection strategy against climate change (e.g. Irrigation strategies; Sunscreens for leaf protection; Soil tillage; Crop microclimate; Varietal and rootstock decisions; Mycorrhizal associations; Technological advances & Land use and allocation changes.)

- Climate variability and change: further research to assess the reliability of existing climate change projections over Portugal and improve upcoming projections.
    - Compilation and treatment of new instrumental datasets from different sources (e.g. weather stations and remote sensing),
    - Additional information from different proxies from wood samples growing in Portugal (e.g. wood density components measured by x-ray microdensitometry) for the reconstruction of past climates.
- Research on wildfires and fire behaviour
    - Research on the dynamics of large wildfires in Portugal will allow the identification the main environmental and anthropogenic influences involved in their spread and quantify their contribution to fire size.
    - Compilation of a worldwide database on fire behaviour characteristics and carbon emissions from experimental fires, managed burns and wildfire case studies for subsequent analysis and modelling.
    - Analysis and characterization of prescribed burning in southern Europe and best practice recommendations to decrease wildfire risk and maintain or enhance ecosystem sustainability
    - Experimental lab-scale study of fire behaviour characteristics in live fuel complexes will mimic the effects of fuel moisture and fuel structure. Subsequent upscaling to improve current fire danger rating methods.
- Decision support systems for aquatic resource management
    - Development and use of toxicity mechanisms (e.g. signaling pathways and gene networks) in aquatic animals, related to emerging compounds where there is little or no information on toxic effects. Identify signalling pathways and gene networks implicated in toxic and adaptive responses; develop new biomarkers of effect /or exposure for biomonitoring programs.
    - Further research on the integrated use of indicators situated over various levels of biological organization including ecosystem function. Compilation of biological data at sub-individual levels to establish base line values for different pollution gradients, and identify variations due to climate and environmental impacts.
    - Identify, characterize and integrate relevant agro-food industry and forestry

pressures that currently affect water resources N Portugal case study areas. Develop scenarios (climate and land use change) to forecast future water resources quantity and quality, associated to climate change and modification of soil use in the catchments.

- Develop management guidelines to improve habitats using different natural water retention methods for multiple benefits. Study of phosphorus, metal and pesticide transference mechanisms among soils sediments and water, identification of suitable effect sensitive biomarkers to detect effects that can be linked to human activities in case study catchments.

- Holistic stochastic catchment modeling of processes and measures for aquatic resources, the conservation of endangered populations and impacts of new infrastructural developments:
  - Combined modelling approaches for improved understanding of catchment system complexity and associated pressure effects.
  - Development of StDM modelling frameworks to assess the role of green infrastructure (Riparian zones) in the landscape and drivers of change in Water Framework Directive classification elements.
  - Integration of advanced predictive innovative dynamic tools with GIS environments to provide simple, suitable and easily interpretable outputs for stakeholders
  - Integration of long-term biodiversity datasets into multi modelling frameworks to improve data robustness and predictive power in ecosystem dynamics and biodiversity conservation. The ongoing lower Sabor river valley ecological monitoring program will be the starting point of a promising collaboration with the Long Term Ecological Research network to assess the ecological status of changing ecosystems and predict trends in vulnerable vertebrate communities /endangered species facing the impacts of hydropower infrastructure construction and exploitation.
  - Evaluation of new spatiotemporal statistical techniques and improved accuracy Mark Release Capture models for decision support in the conservation of the endangered *Phengaris alcon* population in Portugal.

2.5.3 Thematic Strand 2 Main achievements:

- The starting of 2 new projects: "Physical exercise for the prevention of prostate cancer: study of the underlying molecular bases" and "Development of therapeutic approaches based on the correction of splicing in diseases of lysosomal overload: in vitro and in vivo studies"
- A collaboration was started with the Polytechnic Institute of to obtain natural extracts for testing in animal models. *Castanea sativa* flowers extract has been tested against

prostate cancer and Laurus nobilis extract has been tested in the mice k14 hpv16 local colony for skin lesions studies.

- The group started to work has a services provider. We collaborated in the teaching of Animal Science courses in laboratory at I3S and supported the development of the Project "Evaluation of bone formation using different physical forms of heterologous bone grafts of porcine origin in an experimental model", which took place in the vivarium.

2.5.4 Thematic Strand 2 Future research

- To increase the productivity and yield of crops and forestry resources through physiological and best management tools.
    - Identify patterns of wood density components and growth traits of softwood species through alternative methods:
        - Develop new technique to measure wood density profiles by analysing RGB components of wood images.
        - Compute wood density components and growth traits using RGB components analysis.
- To produce new technological applications, including predictive management software, spectral imaging of food crops and forestry to predict maturation stages, growth rates, optimal harvest periods, water and nutrient cycles or fertilizers management, disease or plague occurrences.
    - Develop methods to evaluate physical and anatomical wood properties regarding quality assessment and suitable uses:
        - Rapid image analysis methods to evaluate annual ring level heartwood and sapwood wood density.
        - Image analysis identification and quantification of different hardwood tissues, based on transverse dimensions of the cells.
    - Sensor based smart agriculture approaches for agro-forestry production:
        - Prototyping of a portable Geo-referenced (GPS) sensing station, that includes hyper-spectral and vegetation index cameras. Field testing in real environment.
        - Development of mobile device, desktop and server software applications to collect data, storage and web service support and deployment.
    - Quality Assessment:
        - Sensors network and communications setup for data gathering.
        - Field image acquisition setup.
        - Grape images and reference values databases construction.
        - Databank design and pilot testing.
        - Development and testing of predictive models for oenological parameter estimation.
        - Development and testing of predictive models for water stress estimation.
        - Model assessment for different varieties, growing conditions and harvest year.

- Develop spatial-temporal statistical models for image data analysis obtained from UAV to monitoring vineyards and crops.

- Mechanical and fracture behaviour of bio-based materials and structures:
  - Study of storage protocol over the in vitro mechanical properties of cortical bone.
  - Identification of elastic properties of cortical tissue of long bones through inverse methods, which combine experimental data (statically indeterminate tests) with optimization techniques. Experiments at the diaphysis scale will use Bragg sensors embedded in optical fibres and with digital image correlation.
  - Experimental and analytical characterization of strain rate and temperature effects on the fracture behaviour of wood in mode I and mode II.
  - Identification of cohesive laws for the fracture behaviour of wood in mixed mode I / II, through the MMB test and digital image correlation.
  - Development of identification methods of fracture constitutive laws of cortical bone, under mode I (DCB test), mode II (ENF test) and mixed-mode I/II (MMB test).
  - Development of characterization methods of the in situ mechanical and fracture properties of wood bonded joints by using digital image correlation and Bragg sensors in optical fibre.
  - Experimental identification and computational modelling of wood compression failure in the material symmetry directions, at the mesomechanical and micromechanical scales.
  - Finite element computer modelling of nonlinear behaviour of doweled timber connections, based on the Hill criterion of plasticity.
  - Use of acoustic spectroscopy and mechanical spectroscopy to identify the viscoelastic behaviour of wood.
- To identify key resource intervention points to optimize production and identify potentially suitable species, varieties and rootstocks.
  - Evaluate phytochemical and nutritional composition of agro-food products and co-products in collaboration with key stakeholders. Identify the most promising extracts of in vitro biological activities and further testing via dietary trials to assess capacity to modify pathophysiological biomarkers of health status in vivo.
- To characterize vegetation and quality assessment to optimize physiological responses to climate conditions. Finding will show us how to produce with innovative methods and provide optimized stakeholder solutions by boosting competitiveness and income. Contribute to sustainable economic income for regional and national stakeholders.

- Biological treatment of waste and agro-industrial effluents (wineries and chestnut trees) by fungi, and valorization of the process. Evaluation of the toxicity of the residues and research of potential biological activities (ex: anti-microbial, herbicide) before and after treatment. Participation in the INNOVINE and INTER-ACT Projects.

- Evaluation of the winery industry by-products (grape pomace, grape stems, and wine lees), respecting their contents in phytochemicals, anti-nutrients, toxins, and aflatoxins, as well as the variation of these compositions over time, besides the potential presence of pesticides in deleterious levels.
- Evaluation and characterization of the different types of agro-forestry biomass in Northern Portugal; evaluation of the efficiency of different energy use processes for each type of biomass; development of technologies for combustion, pyrolysis and gasification appropriate to each type of biomass.
- Identification and characterization of new plant extracts and natural products with antimicrobial, antioxidant, anti-inflammatory and anti-genotoxic properties for human health applications. Valorisation of natural products and native flora by characterization of biological activities and designing of potential applications.
- Identification and characterization of new natural products and plant extracts with antifungal, antibacterial or phytotoxic properties with potential application in environmental-
- Characterization of new phenolic compounds and terpenes present on endemic *Thymus* species with resource to NMR. Extracts from several *Thymus* species have been obtained, and are being screened for in vitro antioxidant activity (e.g. ABTS), phytochemical content and respective profile (e.g., by spectrophotometric methods and HPLC). In vitro assays, using several cell lines, are being done to evaluate the anticancer effect, the reactive oxygen species (ROS) scavenging capacity and to ability to modulate the apoptosis pathways.
- Evaluation of antioxidant plant extracts as cardioprotectors in an I/R cell model: reversion of cell death molecular markers.
- Collaboration
    - Foster collaboration with internal (UTAD) and external research groups (other Institutions) to improve multidisciplinarity and critical mass for future funding sources.
    - Begin joint collaborations, training programmes and consultation services with CIIMAR.
    - Maintain and foster partnerships with I3S, CNC, FEUP, U Aveiro, IPBragança, and the faculties of medicine, dentistry and sports of U Porto. Strategic collaboration between the group, UM and ICBAS in the training of human resources and pooling of resources between the three institutions.
- Improve internal human resources with grants for postdoctoral research fellows, MSc and postgraduate grants.
- Submit project proposals for national funding in areas of natural products applied in animal models of cancer (bladder, breast, HPV), Diabetes, Inflammation, and Biomaterials.
- Conclude the CITAB vivarium licensing process
- Organisation of courses, seminars and workshops
    - First edition of "Science in Laboratory Animals category B". A course in surgery and a course in experimental design in laboratory

- "Legislation for the Protection of Animals Used for Scientific Purposes".
- "Animal facility in the classroom".

2.1 Outreach activities

CITAB researchers organized and took part in over 40 outreach activities over 2016. Organized by members of the CITAB pole at the University of Minho in March 2016 "Bate Bate Coração" ("Beat, beat heart") invited 11 – 12 year olds children to get to know over 2 hours how the heart functions and what it looks like where they also learnt how to build and read a graph of their heartbeat. A second activity "Criar, Perder ou Tudo Transforma" ("Created, Lost, Everything is Transformed") allowed 6-10 year olds to become scientists for 2 hours. The children transformed different types of material to understand that "In nature nothing is created, nothing is lost, everything changes". The outreach action "Run away from microbes" was also for younger children. It allowed them to observe microbes in droplets of water and in soil and showed them that some microbes are pathogens. All of these actions were organised as part of the "Science Happens" or "Science because I want you" programmes at the University of Minho.

Researchers gave themed workshops "From dissection to photography" and "Use of Macroinvertebrates for Water Quality Control" at the IV AEICBAS Biomedical Congress (Abel Salazar Biomedical Institute at the University of Porto from 4-6 March 2016). The European Researchers' Night on 30th September 2016 took place in over 250 cities across Europe. Twenty CITAB researchers brought Science and learning to the general public at the Crystal Palace in Porto and the Science Faculty of the University of Porto. Visitors saw how to turn vegetable oil into biodiesel, learned about protecting species and the environment, made recycled paper, and even discovered that plants suffer from stress. These specific CITAB outreach activities gave secondary school students a first "hands-on" contact with research, to generate interest and enthusiasm that may help them decide on their future vocation.

Researchers from CITAB & Eurolegume project were involved in several activities over 2016 including workshops and outreach activities that fully met project long-term objectives. The Eurolegume project visited different secondary schools in Vila Real to show the students how important legumes are. The "Leguminous plant workshop" week in October 2016, was a joint collaboration between CITAB, UTAD and the Lamego Hotel and Tourism Training School. The objective of the workshop was to disseminate the EUROLEGUME project to secondary schools during the World Food Week and to encourage the consumption of legumes. An invited chef from the hotel school developed new and delicious legume based recipes later appreciated during a tasting session. Students from several secondary schools, UTAD and Lamego Hotel and Tourism training School had the opportunity to learn about the health benefits of leguminous plants and their importance in the diet.

LIST OF OUTREACH ACTIVITES

1. ClimAdaPT.Local - "Municipal Strategy for Adaptation to Climate Change", January 2016, São João da Pesqueira, Portugal. Invited speaker:
2. Workshop: "Climate Change: challenges for future sustainability", promoted under the framework of the MSc in Environmental Engineering of the UTAD, February 2016, Vila Real, Portugal. Invited speaker
3. Student support outreach activities at the U Minho:
    a. Workshop "in Vitro Culture of plants" as part of the XVII Conference on Applied Biology 10th -13th February.
    b. Seventh Biochemistry Workshop: "in Vitro Culture of Plants - from the fundamentals to the laminar flow chamber" 6th April.
4. Continuing Accredited Training Actions such as talks and workshops for Secondary School teachers at Science Faculty of the U Minho:
    a. Tea with Science "(CCPFC / ACC-85306/16), 9th March.
    b. In vitro plant cultures: principles, techniques and main applications, 26th October.
5. Talk and workshops for secondary school students (AMECII project)
    a. Talk: "In vitro cultures: plant micro propagation and other applications" 16th March;
    b. Workshop: "In vitro culture of plants: from the fundamentals to the laminar flow chamber". 3rd June.
6. "My School of Sciences II" –Pedagogical Complex U Minho, 11th – 15th April:
    a. "Science, Innovation and Sustainability". A total of 20 oral communications, 29 posters, 10 science performances, 18 "AMEC in-company" apprenticeships; 450 participated students from 21 high schools.
7. Mini Conference: "Knowledge and Practices" 5th year Natural Sciences
    a. 23rd January in Lisbon
    b. 30th January in Porto
8. Mini Conference "Biodiversity and Biological Classification"
    a. 23rd January 2016 Hotel Villa Rica – Lisbon;
    b. 30th January 2016 Hotel Crowne – Porto.
9. "Ozone Biomonitoring in Trás-os-Montes". Vocational course for Technicians in Environmental and Rural Toursim (TTAR) 27th January, Latino Coelho secondary school. Laboratory visit to UTAD
10. Talk: "Cells in action" 12th February 2016 Póvoa de Lanhoso Secondary School.
11. Workshop on Climate Change, "Climate change, fires and forest sustainability" 17th February, UTAD.
12. Talk: "The "brave new world "of clones, transgenics and synthetic biology" 24th February, Caldas das Taipas Secondary School.
13. Talk "Protect rivers, preserve lagoons, promote the future" 7th March, Raul Proença School group, Caldas da Rainha (Ilídio Pinho Foundation Project).
14. Workshop: "Understanding Biology" UTAD open day 16th March, UTAD.

15. IV AEICBAS Biomedical Congress (Abel Salazar Biomedical Institute at the University of Porto from 4th -6th March:
    a. Workshop: “From dissection to photography” at the
    b. Workshop: “Use of Macroinvertebrates for Water Quality Control”.
16. "Traveling from cell to environment". Scientific past-times for teenagers on Holiday.
17. ISci16: an outreach activity that invites private sector companies (3 companies / institutions (CENTI, BioInvitro - Biotecnologia, Lda., Biological Social Gardens of the Municipality of Póvoa de Lanhoso) to U Minho to present and discuss the work developed by students in meetings and to evaluate the impact of this collaboration model, 1st April, Science Faculty of the U Minho.
18. Educational and Training Employment Fair (second edition) ONE (4UMinho) 7th - 9th April, Guimarães Multipurpose Pavilion.
    a. Talk “From basic research and pharmaceutical R & D to economics of healthcare”. Keynote talk given by Christopher Hoyle (Director of Health Economics & Payer Analytics (Oncology) at AstraZeneca, UK.
    b. Closing debate - chair- Fernando Alexandre (Pro-Rector of UM).
19. Course on Scientific Bird Ringing, Botanical Gardens, UTAD, organized by CITAB-LEA in collaboration with Rupestris and SPEA; 9th – 10th April.
20. Workshop "Do plants also suffer from stress?" I National Meeting of Students of Biology and Geology, 16th, April, UTAD. Workshop: Defining the Portugal-Wageningen Research Agenda for Innovation and Sustainability. "Adaptive management in Mediterranean forest systems: Increasing production in a climate change scenario". SMARTAgriFor - Center for Excellence in Agriculture and Forestry (EU-funded project, Grant Agreement number 664599), May 2016, Catholic University of Porto, Portugal. Invited speaker:
21. Science Faculty U Minho Science Festival (FC16) 10th – 12th May:
    a. “Food, Nutrients & Calories and Evaluation of eating habits and lifestyle”. Hands-on activity. Health Education (Experiment @ Science in collaboration with UM Nursing School).
    b. “From grape to wine - from physiology to biochemistry and biotechnology”. An Informal conversation with CITAB researchers.
    c. “From what you eat to what you are”. Experiment @ Science in collaboration with U Minho Nursing School. Talk as part of Project Smile-Kids (Simple Measures and Interventions Lead to hElthier-Kids (Experiment @ Science in collaboration with Nursing School of UM)
    d. “What I know about "camouflaged" plants and animals.”
22. Portuguese Biology Olympiads for seniors 13th - 15th May UTAD.
23. Talk: "Dysplasia of the Ankle and Elbow in the Portuguese Perdigueiro breed". X Northern Meeting of the Portuguese Perdigueiro Association, 18th-19th June, Vila Pouca de Aguiar.
24. "Junior University”. The theme of the 4th edition of this major outreach initiative was "Building bridges together” 27th June -1st July. Organized in collaboration with Vila Real municipal council. About 80 activities were organised for young participants such as "How to recognize invasive species", 30th June, UTAD.

25. Workshop "In the laboratory with the 5 senses: Sugars in colors" III International Meeting of the House of Sciences "Teaching Sciences for the Knowledge Society" 11th - 13th July, Instituto Superior de Engenharia, Porto. Meeting with Science and Technology in Portugal. Science 2016. Climate change in agri-food and forestry environments: adaptation & mitigation. July 2016, Foundation for Science and Technology, Lisbon, Portugal. Invited Speaker:
26. CITAB-UTAD: UNESCO Chair in Geoparks, sustained regional development and healthy lifestyles. "Back to Knowledge", an initiative of the Ministry of Science, Technology and Higher Education, of RTP - Portuguese Radio and Television and Podium Events July 30th Macedo de Cavaleiros. Portugal.
27. Opinion article "Governance and forest fires". "Publico" daily newspaper, August 29th.
28. Talk: Impact of Climate Change on Vine and Wine 17th September Regional Engineer's Day,
29. European Researchers' Night. Stylish science of the North, 30th September, Crystal Palace, Porto. Activities included hands on demonstrations:
    a. "Discovering DNA from ancient varieties"
    b. "Molecular Gastronomy Workshop"
    c. "in my orchard there is no stress"
30. Workshop: Restoration of Degraded Forest Ecosystems. Conference 'Ecological and Landscape Recovery of Forest Areas'. Organization: Águeda City Hall, Quercus, Águeda, 15th October.
31. Workshop "Molecular Gastronomy" 21st October S/3 Secondary School, São Pedro, Vila Real.
32. Demonstration and workshop "Leguminosas no Ponto!" Douro-Lamego Tourism School | University of Trás-os-Montes and Alto Douro (CITAB / UTAD). 17th, 18th, 20th and 31st October.
33. "Dive into the Ocean" Bringing marine Science and technology to society, 16th-18th November, "Our Shopping" Vila Real.
34. Participation in the discussion Panel on the documentary 'Before The Flood'. UTAD, November 2016, Science and Technology Week Vila Real, Portugal.
35. Talk: "My science is better than yours", organized by the Nucleus of Students of Mathematics of the University of Minho 25th November. Braga Cultural Centre. Invited speaker.
36. Talk "Healthy By Nature" - UTAD Science and Technology Week UTAD National Science Program 21st to 25th November Morgado de Mateus Secondary School, Vila Real. Portugal. Maria Rosa Foundation. 20th June. Real Village. Portugal.
37. Workshop 'Harvesting of Forest Seeds'. III Technical Conference on Oaks - Nature and Tourism. Organization: ATHACA, Terras de Bouro Municipality, QUERCUS, UTAD, AMO, OB, 26th November.
38. Prescribed burning prescriptions for an online fire danger rating tool (http://idlcc.fc.ul.pt/MDMF/index.php)
39. "Ecology and Environment" UTAD Open Day - a workshop for school students UTAD
40. Documentary 'Autochthonous Forest - Planting and Valuing' UTAD, Vila Real, 23:31 min.

2.2 International Doctoral Programmes

Ph.D. Agrichains: CITAB launched the 3rd edition of "AgriChains – Agricultural Production Chains: from fork to farm" Doctoral Programme. AgriChains continues respond to consumer demands and concerns by focusing on training doctoral students in each step of the agricultural production chain. Students from the 1st and 2nd cycles of the AgriChains programme are now carrying out research for their theses in different areas of agro-food chain science. CITAB also continues to be a cornerstone research institute in the Campus do Mar doctoral programme. Campus do Mar is a doctoral and research program formed from a consortium consortium of three Galician Universities (Vigo, which coordinates, La Coruña and Santiago de Compostela) and 4 universities in the north of Portugal (Minho, UTAD, Aveiro and Porto).

2.3 International Funded Projects

TuRBO SUDOE - development, validation and demonstration of a model based on a network of 'Transference Brokers' for a direct technology transference between R&D centres and companies in the SUDOE territory. CITAB became part of a nine-partner consortium, including R&D institutions, from the SUDOE region. TuRBO SUDOE kicked off in July 2016 and will end in June 2019. The consortium supports companies to improve their technical and scientific capacity via knowledge transfer in three main strategic areas (i) agrifood, (ii) automotive and (iii) energy/ICT. An innovative approach, using a dedicated Transference Broker to foster the transference process, will allow the consortium effectively exploit the knowledge generated from the strategic areas in the market. This will be done via a harmonized and coordinated effort between R&D (OFFER) and business activities (DEMAND). The consortium comprises 5 centres that OFFER knowledge (CITAB-UTAD, the University of Burgos, the University of Malaga, the University of Aveiro, and the Fundación Centro Tecnológico de Efficiency and Energy Sustainability) and 3 DEMAND Entrepreneurial Technology Clusters -(Agribusiness Business Federation of the Valencian Community - FEDACOVA, Asociación Cluster de Automoción de Aragón - CAAR and Mecanic Vallée). The Barcelona Knowledge Innovation Market (KIMbcn), a world expert in Training in the area of Technology Transfer, is also a TuRBO project partner. The CITAB researchers involved in this project are senior researchers Professor Ana Barros, Professor Carla Amaral, and Professor Eduardo Rosa, who is also the project coordinator.

The new EU Horizon 2020 programme Eurodairy - A Europe-wide Thematic Network on improving resource use efficiency in dairy farming - started in February 2016. The principal aim of this project is cooperation of institutions, knowledge transfer and the demonstration techniques to address best practices across a wide range of conditions on pilot farms. This will stimulate the use of the project deliverables by commercial farmers. The EURODAIRY consortium includes researchers from 19 European institutions including from UTAD & CITAB

(coordinated by the senior research Henrique Trindade; CITAB). Eurodairy will develop a Europe-wide thematic network for dairy farming to enhance economic, social and ecological performance. Regional multi-actor groups of farming organisations, dairy industry, extension services and research organisations will collaborate to ensure a continuous two-way flow of information between practice and science. Eurodairy is a 36 month 1. 997, 237 € project; CITAB-UTAD has been allocated 36 865 €.

Green Growth (Crescimento verde): CITAB (Professor Domingos Lopes) is participating in the "Agriculture and Forestry (GTT AGF)" thematic network. Network actions started in April 2016 with the principal objective of outlining a framework to help meet objectives and Green Growth Group strands in the agro-food sector. The network is part of the Green Growth Group ("Crescimento verde"), created by the EU to endorse a long-term aim towards a better, green and a sustainable economy. This is based on a circular economic paradigm that embraces higher productivity, the production of less residues and wastes, higher recycling rates and lower CO2 emission levels. The Green Growth Group will support green activities to promote environment protection, to create and promote employment, to stimulate sustainable management tools with a maximum respect for natural resources, water quality and biodiversity.

3 Productivity metrics

3.1 SCI/JCR articles

A total of 186 SCI/JCR articles were published within the thematic strands of ***Sustainability of Agri-food and Forestry Ecosystems in a changing environment*** and ***Technology & innovation in Agri-food and Forestry chains for a more competitive bioeconomy*** in 2016

1. Aires, A., Carvalho, R., Saavedra, M.J. 2016. Valorization of solid wastes from chestnut industry processing: Extraction and optimization of polyphenols, tannins and ellagitannins and its potential for adhesives, cosmetic and pharmaceutical industry. Waste Management 48: 457-464. doi: 10.1016/j.wasman.2015.11.019, ISSN: 0956-053X. (Impact factor, Quartil: 3,829, Q1).
2. Aires, A., Marrinhas, E., Carvalho, R., Dias, C., Saavedra, M.J. 2016. Phytochemical composition and antibacterial activity of hydroalcoholic extracts of *Pterospartum tridentatum* and *Mentha pulegium* against *Staphylococcus aureus* Isolates. Biomed Research International: 11. doi: 10.1155/2016/5201879, ISSN: 2314-6133. (Impact factor, Quartil: 2,134, Q3).
3. Almeida-Aguiar, C., Carvalho, A.A. 2016. Exploring Podcasting in Heredity and Evolution Teaching. Biochemistry and Molecular Biology Education 44: 429-432. doi: 10.1002/bmb.20965, ISSN: 1470-8175. (Impact factor, Quartil: 0,465, Q4).
4. Alvarado, A., Faustino-Rocha, A.I., Ferreira, R., Mendes, R., Duarte, J.A., Pires, M.J., Colaco, B. and Oliveira, P.A. 2016. Prognostic Factors in an Exercised Model of Chemically-induced Mammary Cancer. Anticancer Research 36: 2181-2188. URL: http://ar.iiarjournals.org/content/36/5/2181.long, ISSN: 0250-7005. (Impact factor,

Quartil: 1,895, Q3).

5. Alves-Pimenta, S., Ginja, M.M., Fernandes, A.M., Melo-Pinto, P., Colaço, B. 2016. Curvature radius measurements from the humeral trochlea in large dogs. Anatomical Record-Advances in Integrative Anatomy and Evolutionary Biology 299: 1012-1014. doi: 10.1002/ar.23366, ISSN: 1932-8486. (Impact factor, Quartil: 1,507, Q2).
6. Antunes, S.C., Castro, B.B., Dias, M.C., Moutinho-Pereira, J., Correia, C.M., Claro, M.T., Gavina, A., Santos, C., Goncalves, F., Pinto, G. 2016. Phytotoxicity of natural soils using physiological and biochemical endpoints reveals confounding factors: can a weight of evidence tackle uncertainty? Journal of Soils and Sediments 16: 785-800. doi: 10.1007/s11368-015-1306-0, ISSN: 1439-0108. (Impact factor, Quartil: 2,206, Q2).
7. Araujo, M., Santos, C., Costa, M., Moutinho-Pereira, J., Correia, C., Dias, M.C. 2016. Plasticity of young *Moringa oleifera* L. plants to face water deficit and UVB radiation challenges. Journal of Photochemistry and Photobiology B-Biology 162: 278-285. doi: 10.1016/j.jphotobiol.2016.06.048, ISSN: 1011-1344. (Impact factor, Quartil: 3,035, Q2).
8. Ares, G., Gimenez, A., Vidal, L., Zhou, Y.F., Krystallis, A., Tsalis, G., Symoneaux, R., Cunha, L.M., de Moura, A.P., Claret, A., Guerrero, L., Cardello, A.V., Wright, A., Jefferies, L., Lloyd, M., Oliveira, D., Deliza, R. 2016. Do we all perceive food-related wellbeing in the same way? Results from an exploratory cross-cultural study. Food Quality and Preference 52: 62-73. doi: 10.1016/j.foodqual.2016.03.014, ISSN: 0950-3293. (Impact factor, Quartil: 3,688, Q1).
9. Barros, A., Gouvinhas, I., Machado, N., Pinto, J., Cunha, M., Rosa, E., Dominguez-Perles, R. 2016. New grape stems-based liqueur: Physicochemical and phytochemical evaluation. Food Chemistry 190: 896-903. doi: 10.1016/j.foodchem.2015.06.047, ISSN: 0308-8146 .(Impact factor, Quartil: 4,052, Q1).
10. Barros, P., Vale-Gonçalves, H.M., Paupério, J., Cabral, J.A., Rosa, G. 2016. Confirmation of European snow vole *Chionomys nivalis* (Mammalia: *Rodentia: Cricetidae*) occurrence in Portugal. Italian Journal of Zoology 83: 139-145. doi: 10.1080/11250003.2015.1103320, ISSN: 1125-0003. (Impact factor, Quartil: 0,814, Q3).
11. Bastos, R., D'Amen, M., Vicente, J., Santos, M., Yu, H.R., Eitelberg, D., Goncalves, J., Civantos, E., Honrado, J., Cabral, J.A. 2016. A multi-scale looping approach to predict spatially dynamic patterns of functional species richness in changing landscapes. Ecological Indicators 64: 92-104. doi: 10.1016/j.ecolind.2015.12.025, ISSN: 1470-160X. (Impact factor, Quartil: 3,190, Q2).
12. Bastos, R., Monteiro, A.T., Carvalho, D., Gomes, C., Travassos, P., Honrado, J.P., Santos, M. and Cabral, J.A. 2016. Integrating land cover structure and functioning to predict biodiversity patterns: a hierarchical modelling framework designed for ecosystem management. Landscape Ecology 31: 701-710. doi: 10.1007/s10980-015-0302-5, ISSN: 0921-2973. (Impact factor, Quartil: 3,657, Q1).
13. Bastos, R., Pinhanços, A., Santos, M., Fernandes, R., Vicente, J., Morinha, F., Honrado, J., Travassos, P., Barros, P., Cabral, J.A. 2016. Evaluating the regional cumulative impact of wind farms on birds: How can spatially explicit dynamic modelling improve impact assessments and monitoring? Journal of Applied Ecology 53: 1330–1340. doi: 10.1111/1365-2664.12451, ISSN: 0021-8901. (Impact factor, Quartil: 5,196, Q1).
14. Bastos, V., Brown, D., Johnston, H., Daniel-da-Silva, A.L., Duarte, I.F., Santos, C. and Oliveira, H. 2016. Inflammatory responses of a human keratinocyte cell line to 10 nm citrate- and PEG-coated silver nanoparticles. Journal of Nanoparticle Research 18: 205. doi:

10.1007/s11051-016-3515-x, ISSN: 1388-0764. (Impact factor, Quartil: 2,101, Q2).

15. Bellu, A., Sanches Fernandes, Cortes, R.M.V. and Pacheco, F.A.L. 2016. A framework model for the dimensioning and allocation of a detention basin system: The case of a flood-prone mountainous watershed. Journal of Hydrology 533: 567-580. doi: 10.1016/j.jhydrol.2015.12.043, ISSN: 0022-1694. (Impact factor, Quartil: 3,043, Q1).
16. Belluco, S., Carnier, P., Castagnaro, M., Chiers, K., Millanta, F., Peña L., Pires, I. 2016. Immunohistochemical Labelling for Cyclo-oxygenase-2: Does the Positive Control Guarantee Standardized Results? Journal of Comparative Pathology 154: 186–194. doi: 10.1016/j.jcpa.2016.01.003, ISSN: 0021-9975. (Impact factor, Quartil: 1,173, Q2).
17. Belo-Pereira, M., Santos, J.A. 2016. A persistent wintertime fog episode at Lisbon airport (Portugal): performance of ECMWF and AROME models. Meteorological Applications 23: 353-370. doi: 10.1002/met.1560, ISSN: 1350-4827. (Impact factor, Quartil: 1,273, Q3).
18. Benali, A., Ervilha, A.R., Sá, A.C.L., Fernandes, P.M., Pinto, R.M.S., Trigo, R.M., Pereira, J.M.C. 2016. Deciphering the impact of uncertainty on the accuracy of large wildfire spread simulations. Science of the Total Environment 569-570: 73-85. doi: 10.1016/j.scitotenv.2016.06.112, ISSN: 0048-9697. (Impact factor, Quartil: 3,976, Q1).
19. Bezerra, R.M.F., Pinto, P.A., Fraga, I. and Dias, A.A. 2016. Enzyme inhibition studies by integrated Michaelis-Menten equation considering simultaneous presence of two inhibitors when one of them is a reaction product. Computer Methods and Programs in Biomedicine 125: 2-7. doi: 10.1016/j.cmpb.2015.12.013, ISSN: 0169-2607. (Impact factor, Quartil: 1,862, Q2).
20. Boonme, P., Kaewbanjong, J., Amnuaikit, T., Andreani, T., Silva, A.M., B. Souto, E. 2016. Microemulsions and Microemulsion-Based Gels for Topical Antifungal Therapy with Phytochemicals. Current Pharmaceutical Design 22: 1-7. doi: 10.2174/1381612822666160603O, ISSN: 1381-6128. (Impact factor, Quartil: 3,052, Q2).
21. Borges, D.L., Guedes, S., Nascimento, A.R., Melo-Pinto, P. 2016. Detecting and grading severity of bacterial spot caused by Xanthomonas spp. in tomato (*Solanum lycopersicon*) fields using visible spectrum images. Computers and Electronics in Agriculture 125: 149-159. doi: 10.1016/j.compag.2016.05.003, ISSN: 0168-1699. (Impact factor, Quartil: 1,892, Q1).
22. Cajaiba, R.L., Cabral, J.A., Santos, M. 2016. A Minimal Invasive Method to Forecast the Effects of Anthropogenic Disturbance on Tropical Cave Beetle Communities. Neotropical Entomology 45: 139-147. doi: 10.1007/s13744-015-0349-7, ISSN: 1519-566X. (Impact factor, Quartil: 0,834, Q3).
23. Campos, S., Félix, L., Venâncio, C., de Lurdes Pinto, M., Peixoto, F., de Pinho, P.G., Antunes, L. 2016. In vivo study of hepatic oxidative stress and mitochondrial function in rabbits with severe hypotension after propofol prolonged infusion. Springerplus 5: 1349. doi: 10.1186/s40064-016-2970-2, ISSN: 2193-1801. (Impact factor, Quartil: 0,982, Q2).
24. Campos, S., Monteiro, J., Valenzuela, B., Goncalinho, H., de Pinho, P.G., Fresco, P., Felix, L. Antunes, L. 2016. Evidence of Different Propofol Pharmacokinetics under Short and Prolonged Infusion Times in Rabbits. Basic and Clinical Pharmacology and Toxicology 118: 421-431. doi: 10.1111/bcpt.12521, ISSN: 1742-7835. (Impact factor, Quartil: 3,097, Q2).
25. Campos, S.P., de Lurdes Pinto, M., Gomes, G., de Pinho, P.G., Monteiro, J.A., Félix, L.M., Branco, P.S., Ferreira, L.M., Antunes LM. 2016. Expression of CYP1A1 and CYP1A2 in the

liver and kidney of rabbits after prolonged infusion of propofol. Experimental and Toxicologic Pathology S0940-2993: 30100-30102. doi: 10.1016/j.etp.2016.07.006, ISSN: 0940-2993. (Impact factor, Quartil: 1,716, Q3).

26. Cañadas, C., Alvarado, H., Calpena, A.C., Silva, A.M., Souto, E.B., García, M.L.,Abrego, G. 2016. *In vitro*, *ex vivo* and *in vivo* characterization of PLGA nanoparticles loading pranoprofen for ocular administration. International Journal of Pharmaceutics 511: 719-727. doi: 10.1016/j.ijpharm.2016.07.055, ISSN: 0378-5173. (Impact factor, Quartil: 3,994, Q1).
27. Carneiro, M., Colaco, B., Colaco, J., Faustino-Rocha, A.I., Colaco, A., Lavin, S., Oliveira, P.A. 2016. Biomonitoring of metals and metalloids with raptors from Portugal and Spain: a review. Environmental Reviews 24: 63-83. doi: 10.1139/er-2015-0051, ISSN: 1208-6053. (Impact factor, Quartil: 4,630, Q1).
28. Carneiro, M.A., O. P. A., Brandão R, Francisco ON, Velarde R, Lavín S, Colaço B. 2016. Lead poisoning due to lead-pellet ingestion in Griffon Vultures (*Gyps fulvus*) from the Iberian peninsula. Journal of Avian Medicine and Surgery 30: 274-279. doi: 10.1647/2014-051, ISSN: 1082-6742. (Impact factor, Quartil: 0,552, Q3).
29. Carvalho, D.O., Oliveira, R., Johansson, B., Guido, L.F. 2016. Dose-dependent protective and inductive effects of xanthohumol on oxidative DNA damage in *Saccharomyces cerevisiae*. Food Technology and Biotechnology 54: 60-69. URL: http://hrcak.srce.hr/index.php?show=clanak&id_clanak_jezik=228613, ISSN: 1330-9862. (Impact factor, Quartil: 1,179, Q4).
30. Carvalho, M., Rocha, J., Carnide, V., Martins, S., Mus, M., Amich, F., Almeida, R., Machado, C., Goncalves, B., Bacelar, E., Crespi, A.L.2016. Biogeographic divergences in the Iberian flora. A morpho-anatomic, ISSR-based, and environmental study of Iberian *Buxus sempervirens* L. Turkish Journal of Botany 40: 1-16. doi: 10.3906/bot-1409-7, ISSN: 1300-008X. (Impact factor, Quartil: 1,178, Q3).
31. Carvalho, M.I., Pires, I., Prada, J., Gregorio, H., Lobo, L., Queiroga, F.L. 2016. Intratumoral FoxP3 expression is associated with angiogenesis and prognosis in malignant canine mammary tumors. Veterinary Immunology and Immunopathology 178: 1-9. doi: 10.1016/j.vetimm.2016.06.006, ISSN: 0165-2427. (Impact factor, Quartil: 1,664, Q1).
32. Casas-Diaz, E., Cristofol, C., Cuenca, R., Agusti, S., Carneiro, M., Marco, I., Lavin, S. and Margalida, A. 2016. Determination of fluoroquinolone antibiotic residues in the plasma of Eurasian griffon vultures (*Gyps fulvus*) in Spain. Science of the Total Environment 557: 620-626. doi: 10.1016/j.scitotenv.2016.03.083, ISSN: 0048-9697. (Impact factor, Quartil: 3,976, Q1).
33. Castro I., Pinto-Carnide O., Ortiz J. M., Ferreira V., Martín J.P. 2016. A comparative analysis of genetic diversity in Portuguese grape germplasm from ampelographic collections fit for quality wine production Spanish Journal of Agricultural Research 14: e0712, 11 pages. doi: 10.5424/sjar/2016144-8852, ISSN: 2171-9292. (Impact factor, Quartil: 0,760, Q2).
34. Cogliati, M., D'Amicis, R., Zani, A., Montagna, M.T., Caggiano, G., et al. 2016. Environmental distribution of *Cryptococcus neoformans* and *C. gattii* around the Mediterranean basin. Fems Yeast Research 16: 12. doi: 10.1093/femsyr/fow045 , ISSN: 1567-1356. (Impact factor, Quartil: 2,479, Q2).
35. Conde, C., Pimentel, D., Neves, A., Dinis, L.-T., Bernardo, S., Correia, C.M., Gerós, H., Moutinho-Pereira, J. 2016. Kaolin foliar application has a stimulatory effect on

phenylpropanoid and flavonoid pathways in grape berries. Frontiers in Plant Science 7: 1150. doi: 10.3389/fpls.2016.01150, ISSN: 1664-462X. (Impact factor, Quartil: 4,495, Q1).

36. Correia, S., Goncalves, B., Aires, A., Silva, A., Ferreira, L., Carvalho, R., Fernandes, H., Freitas, C., Carnide, V., Silva, A.P. 2016. Effect of Harvest Year and Altitude on Nutritional and Biometric Characteristics of Blueberry Cultivars. Journal of Chemistry: ID 8648609, 12 pages. doi: 10.1155/2016/8648609, ISSN: 2090-9063. (Impact factor, Quartil: 0,996, Q3).
37. Cortes, R., Hughes, S., Coimbra, A., Monteiro, S., Pereira, V., Lopes, M., Pereira, S., Pinto, A., Sampaio, A., Santos, C., Carrola, J., de Jesus, J., Varandas, S. 2016. A multiple index integrating different levels of organization. Ecotoxicology and Environmental Safety 132: 270-278. doi: 10.1016/j.ecoenv.2016.06.001 , ISSN: 0147-6513. (Impact factor, Quartil: 3,130, Q1).
38. Costa R.M.A., Bastos, M.M., Medeiros, R., Oliveira, P.A. 2016. The NFκB Signaling Pathway in Papillomavirus-induced Lesions: Friend or Foe? Anticancer Research 36: 2073-83. URL: http://ar.iiarjournals.org/content/36/5/2073.long, ISSN: 0250-7005. (Impact factor, Quartil: 1,895, Q3).
39. Costa, J., Campos, B., Amaral, J.S., Nunes, M.E., Oliveira, M. and Mafra, I. 2016. HRM analysis targeting ITS1 and matK loci as potential DNA mini-barcodes for the authentication of *Hypericum perforatum* and *Hypericum androsaemum* in herbal infusions. Food Control 61: 105-114. doi: 10.1016/j.foodcont.2015.09.035, ISSN: 0956-7135. (Impact factor, Quartil: 3,388, Q1).
40. Costa, R., Fraga, H., Fernandes, P.M. Santos, J.A. 2016. Implications of future bioclimatic shifts on Portuguese forests. Regional Environmental Change 16: 1-11. doi: 10.1007/s10113-016-0980-9, ISSN: 1436-3798. (Impact factor, Quartil: 2,664, Q1).
41. Couto, M., Santos, A.S., Laborda, J., Novoa, M., Ferreira, L.M. and de Carvalho, L.M.M. 2016. Grazing behaviour of Miranda donkeys in a natural mountain pasture and parasitic level changes. Livestock Science 186: 16-21. doi: 10.1016/j.livsci.2016.01.005, ISSN: 1871-1413. (Impact factor, Quartil: 1,293, Q2).
42. Cruz, M., Antunes, P., Paulo, L., Ferreira, A.M., Cunha, A., Almeida-Aguiar, C., Oliveira, R. 2016. Antioxidant and dual dose-dependent antigenotoxic and genotoxic properties of an ethanol extract of propolis. Rsc Advances 6: 49806-49816. doi: 10.1039/c6ra04856k, ISSN: 2046-2069. (Impact factor, Quartil: 3,289, Q2).
43. Da Costa, R.M.G., Bastos, M., Medeiros, R., Oliveira, P.A. 2016. The NF kappa B signaling pathway in papillomavirus-induced lesions: friend or foe? Anticancer Research 36: 2073-2083. URL: http://ar.iiarjournals.org/content/36/5/2073.full, ISSN: 0250-7005. (Impact factor, Quartil: 1,895, Q3).
44. da Silva, M.B., Abrantes, N., Nogueira, V., Goncalves, F., Pereira, R. 2016. TiO2 nanoparticles for the remediation of eutrophic shallow freshwater systems: Efficiency and impacts on aquatic biota under a microcosm experiment. Aquatic Toxicology 178: 58-71. doi: 10.1016/j.aquatox.2016.07.004, ISSN: 0166-445X. (Impact factor, Quartil: 3,557, Q1).
45. Davies, G.M., Kettridge, N., Stoof, C.R., Gray, A., Ascoli, D., Fernandes, P.M., Marrs, R., Allen, K.A., Doerr, S.H., Clay, G., McMorrow, J., Vandvik, V. 2016. The peatland vegetation burning debate: keep scientific critique in perspective. A response to Brown et al. and Douglas et al. Philosophical Transactions of the Royal Society B 371: 20160434. doi: 10.1098/rstb.2016.0434, ISSN: 0962-8436. (Impact factor, Quartil:

5,847, Q1).

46. Davies, G.M., Kettridge, N., Stoof, C.R., Gray, A., Ascoli, D., Fernandes, P.M., Marrs, R., Allen, K.A., Doerr, S.H., Clay, G., McMorrow, J., Vandvik, V. 2016. The role of fire in U.K peatland and moorland management; the need for informed unbiased debate. Philosophical Transactions of the Royal Society B 371: 20150342. doi: 10.1098/rstb.2015.0342 , ISSN: 0962-8436. (Impact factor, Quartil: 5,847, Q1).
47. Deuchande, T., Larrigaudiere, C., Gine-Bordonaba, J., Carvalho, S.M.P., Vasconcelos, M.W. 2016. Biochemical Basis of CO2-Related Internal Browning Disorders in Pears (*Pyrus communis* L. cv. Rocha) during Long-Term Storage. Journal of Agricultural and Food Chemistry 64: 4336-4345. doi: 10.1021/acs.jafc.6b00740, ISSN: 0021-8561. (Impact factor, Quartil: 2,857, Q1).
48. Diago, M.P., Fernández-Novales, J., Fernandes, A.M., Melo-Pinto, P., Javier Tardaguila, J. 2016. Use of visible and short-wave near-Infrared hyperspectral imaging to fingerprint anthocyanins in intact grape berries. Journal of Agricultural and Food Chemistry 64: 7658-7666. doi: 10.1021/acs.jafc.6b01999, ISSN: 0021-8561. (Impact factor, Quartil: 2,857, Q1).
49. Dias, M.C., Moutinho-Pereira, J., Correia, C., Monteiro, C., Araujo, M., Bruggemann, W., Santos, C. 2016. Physiological mechanisms to cope with Cr(VI) toxicity in lettuce: can lettuce be used in Cr phytoremediation? Environmental Science and Pollution Research 23: 15627-15637. doi: 10.1007/s11356-016-6735-9, ISSN: 0944-1344. (Impact factor, Quartil: 2,760, Q2).
50. Dinis, L.T., Bernardo, S., Conde, A., Pimentel, D., Ferreira, H., Felix, L., Geros, H., Correia, C.M., Moutinho-Pereira, J. 2016. Kaolin exogenous application boosts antioxidant capacity and phenolic content in berries and leaves of grapevine under summer stress. Journal of Plant Physiology 191: 45-53. doi: 10.1016/j.jplph.2015.12.005, ISSN: 0176-1617. (Impact factor, Quartil: 2,971, Q1).
51. Dinis, L.T., Ferreira, H., Pinto, G., Bernardo, S., Correia, C.M., Moutinho-Pereira, J. 2016. Kaolin-based, foliar reflective film protects photosystem II structure and function in grapevine leaves exposed to heat and high solar radiation. Photosynthetica 54: 47-55. doi: 10.1007/s11099-015-0156-8, ISSN: 0300-3604. (Impact factor, Quartil: 1,558, Q2).
52. Dominguez-Perles, R., Guedes, A., Queiroz, M., Silva, A.M., Barros, A. 2016. Oxidative stress prevention and anti-apoptosis activity of grape (*Vitis vinifera* L.) stems in human keratinocytes. Food Research International 87: 92-102. doi: 10.1016/j.foodres.2016.06.030, ISSN: 0963-9969. (Impact factor, Quartil: 3,182, Q1).
53. Domínguez-Perles, R., Machado, N., Abraão, A.S., Carnide, V., Ferreira, L., Rodrigues, I., E. Rosa, E., Barros, A.I.R.N.A. 2016. Chemometric analysis on free amino acids and proximate compositional data for selecting cowpea (Vigna unguiculata L.) diversity. Journal of Food Composition and Analysis 53: 69-76. doi: 10.1016/j.jfca.2016.09.006, ISSN: 0889-1575. (Impact factor, Quartil: 2,780, Q1).
54. Fangueiro, D., Surgy, S., Fraga, I., Monteiro, F.G., Cabral, F., Coutinho, J. 2016. Acidification of animal slurry affects the nitrogen dynamics after soil application. Geoderma 281: 30-38. doi: 10.1016/j.geoderma.2016.06.036, ISSN: 0016-7061. (Impact factor, Quartil: 2,855, Q1).
55. Fangueiro, J.F., Calpena, A.C., Clares, B., Andreani, T., Egea, M.A., Veiga, F.J., Garcia, M.L.,

Silva, A.M., Souto, E.B. 2016. Biopharmaceutical evaluation of epigallocatechin gallate-loaded cationic lipid nanoparticles (EGCG-LNs): *In vivo*, *in vitro* and *ex vivo* studies. International Journal of Pharmaceutics 502: 161-169. doi: 10.1016/j.ijpharm.2016.02.039, ISSN:0378-5173. (Impact factor, Quartil: 3,994, Q1).

56. Fangueiro, J.F., Veiga, F., Silva, A.M., Souto, E.B. 2016. Ocular drug delivery - new strategies for targeting anterior and posterior segments of the eye. Current Pharmaceutical Design 22: 1135-1146. doi: 10.2174/1381612822666151216145900, ISSN: 1381-6128. (Impact factor, Quartil: 3,052, Q2).
57. Faria, A., Gabriel, R., Moreira, H., Bras, R. and Ditroilo, M. 2016. Musculo-articular stiffness is affected by the magnitude of the impulse applied when assessed with the free-oscillation technique. Journal of Biomechanics 49: 155-160. doi: 10.1016/j.jbiomech.2015.11.020, ISSN: 0021-9290. (Impact factor, Quartil: 2,431, Q2).
58. Faustino-Rocha, A.I., Calado A.M., Gama, A., Ferreira, R., Ginja, M., Oliveira, P.A. 2016. Electron microscopy findings in N-methyl-N-nitrosourea-induced mammary tumors. Microscopy and Microanalysis 22: 1056-1061. doi: 10.1017/S1431927616011661, ISSN: 1431-9276. (Impact factor, Quartil: 1,730, Q2).
59. Faustino-Rocha, A.I., Gama, A., Oliveira, P.A., Alvarado, A., Fidalgo-Goncalves, L., Ferreira, R., Ginja, M. 2016. Ultrasonography as the gold standard for *in vivo* volumetric determination of chemically-induced mammary tumors. In Vivo 30: 465-472. URL: http://iv.iiarjournals.org/content/30/4/465.long , ISSN: 0258-851X. (Impact factor, Quartil: 0,832, Q4).
60. Faustino-Rocha, A.I., Rodrigues, D., Ferreira, R., Colaco, B., Gomes, P.S., Pires, M.J., Gama, A., Oliveira, P.A. 2016. The effects of intense pulsed light in a mouse model of skin carcinogenesis. British Journal of Dermatology 174: 216-218. doi: 10.1111/bjd.14010, ISSN: 0007-0963. (Impact factor, Quartil: 4,317, Q1).
61. Faustino-Rocha, A.I., Rodrigues, D., Gil da Costa, R.G., Diniz, C., Aragão, S., Talhada, D., Botelho, M., Colaço, A., Pires, M.J., Peixoto, F., Oliveira, P.A. 2016. Trihalomethanes in liver pathology: mitochondrial dysfunction and oxidative stress in the mouse. Environmental Toxicology 31: 1009-1016. doi: 10.1002/tox.22110, ISSN: 1520-4081. (Impact factor, Quartil: 2,868, Q2).
62. Faustino-Rocha, A.I., Silva, A., Gabriel, J., da Costa, R.M.G., Moutinho, M., Oliveira, P.A., Gama, A., Ferreira, R., Ginja, M. 2016. Long-term exercise training as a modulator of mammary cancer vascularization. Biomedicine and Pharmacotherapy 81: 273-280. doi: 10.1016/j.biopha.2016.04.030, ISSN: 0753-3322. (Impact factor, Quartil: 2,326, Q3).
63. Feio, M.J., Calapez, A.R., Elias, C.L., Cortes, R.MV., Graça, M.A.S, Pinto, P., Almeida, S.F.P. 2016. The paradox of expert judgmentiIn rivers ecological monitoring. Journal of Environmental Management 184 : 609–616. doi: 10.1016/j.jenvman.2016.10.004, ISSN: 0301-4797. (Impact factor, Quartil: 3,131, Q1).
64. Félix, L.M., Serafim, C., Valentim, A.M., Antunes, L.M., Campos, S., Matos, M., Coimbra, A.M. 2016. Embryonic stage-dependent teratogenicity of ketamine in zebrafish (*Danio rerio*). Chemical Research in Toxicology 29: 1298-12309. doi: 10.1021/acs.chemrestox.6b00122 , ISSN: 0893-228X. (Impact factor, Quartil: 3,025, Q2).
65. Felix, L.M., Vidal, A.M., Serafim, C., Valentim, A.M., Antunes, L.M., Campos, S., Matos, M., Monteiro, S.M., Coimbra, A.M. 2016. Ketamine-induced oxidative stress at different developmental stages of zebrafish (*Danio rerio*) embryos. Rsc Advances 6: 61254-

61266. doi: 10.1039/c6ra08298j, ISSN: 2046-2069. (Impact factor, Quartil: 3,289, Q2).

66. Fernandes, P.M. 2016. On the socioeconomic drivers of municipal-level fire incidence in Portugal. Forest Policy and Economics 62: 187-188. doi: 10.1016/j.forpol.2015.07.010, ISSN: 1389-9341. (Impact factor, Quartil: 1,552, Q2).
67. Fernandes, P.M., Barros, A.M.G., Pinto, A., Santos, J.A. 2016. Characteristics and controls of extremely large wildfires in the western Mediterranean Basin. Journal of Geophysical Research-Biogeosciences 121: 2141–2157. doi: 10.1002/2016JG003389, ISSN: 0148-0227. (Impact factor, Quartil: 3,318, Q1).
68. Fernandes, P.M., Monteiro-Henriques, T., Guiomar, G., Loureiro, C., Barros, A.M.G. 2016. Bottom-up variables govern large-fire size in Portugal. Ecosystems 19: 1362–1375. doi: 10.1007/s10021-016-0010-2, ISSN: 1432-9840. (Impact factor, Quartil: 3.751, Q1).
69. Fernandes, P.M., Pacheco, A.P., Almeida, R. and Claro, J. 2016. The role of fire-suppression force in limiting the spread of extremely large forest fires in Portugal. European Journal of Forest Research 135: 253-262. doi: 10.1007/s10342-015-0933-8, ISSN: 1612-4669. (Impact factor, Quartil: 2,041, Q1).
70. Fernandes-Silva, A.A., Lopez-Bernal, A., Ferreira, T.C., Villalobos, F.J. 2016. Leaf water relations and gas exchange response to water deficit of olive (cv. Cobrançosa) in field grown conditions in Portugal. Plant and Soil 402: 191-209. doi: 10.1007/s11104-015-2786-9, ISSN: 0032-079X. (Impact factor, Quartil: 2,969, Q1).
71. Ferreira, L., Guedes, J.F., Almeida-Aguiar, C., Fonseca, A.M., Neves, I.C. 2016. Microbial growth inhibition caused by Zn/Ag-Y zeolite materials with different amounts of silver. Colloids and Surfaces B-Biointerfaces 142: 141-147. doi: 10.1016/j.colsurfb.2016.02.042, ISSN: 0927-7765. (Impact factor, Quartil: 3,902, Q1).
72. Ferreira, V., Fernandes, F., Pinto-Carnide, O., Valentao, P., Falco, V., Martin, J.P., Ortiz, J.M., Arroyo-Garcia, R., Andrade, P.B., Castro, I. 2016. Identification of *Vitis vinifera* L. grape berry skin color mutants and polyphenolic profile. Food Chemistry 194: 117-127. doi: 10.1016/j.foodchem.2015.07.142, ISSN: 0308-8146. (Impact factor, Quartil: 4,052, Q1).
73. Ferreira, V., Ramos-Cabrer, A.M., Carnide, V., Pinto-Carnide, O., Assuncao, A., Marreiros, A., Rodrigues, R., Pereira-Lorenzo, S., Castro, I. 2016. Genetic pool structure of local apple cultivars from Portugal assessed by microsatellites. Tree Genetics and Genomes 12: 15. doi: 10.1007/s11295-016-0997-8, ISSN: 1614-2942. (Impact factor, Quartil: 2,132, Q3).
74. Fonseca, A., Sanches Fernandes, L.F., Fontainhas-Fernandes, A., Monteiro, S.M., Pacheco, F.A.L. 2016. From catchment to fish: impact of anthropogenic pressures on gill histopathology. Science of the Total Environment 550: 972-986. doi: 10.1016/j.scitotenv.2016.01.199, ISSN: 0048-9697. (Impact factor, Quartil: 3,976, Q1).
75. Fraga, H.; García de Cortázar Atauri, I., Malheiro, A. C., Santos, J. A. 2016. Modelling climate change impacts on viticultural yield, phenology and stress conditions in Europe. Global Change Biology 22: 3774–3788. doi: 10.1111/gcb.13382, ISSN: 1354-1013. (Impact factor, Quartil: 8,444, Q1).
76. Fraga, H.; Santos, J. A., Malheiro, A. C., Oliveira, A. A., Moutinho-Pereira, J., Jones, G.V. 2016. Climatic suitability of Portuguese grapevine varieties and climate change adaptation. International Journal of Climatology 36: 1-12. doi: 10.1002/joc.4325, ISSN: 0899-8418. (Impact factor, Quartil: 2,886, Q1).
77. Fraga, H.; Santos, J.A., Moutinho-Pereira, J., Carlos, C., Silvestre, J., Eiras-Dias, J., Mota, T., Malheiro, A.C. 2016. Statistical modelling of grapevine phenology in Portuguese wine

regions: observed trends and climate change projections. Journal of Agricultural Science 154: 795-811. doi: 10.1017/S0021859615000933, ISSN: 0021-8596. (Impact factor, Quartil: 1,103, Q2).

78. Froufe, E., Gan, H.M., Lee, Y.P., Carneiro, J., Varandas, S., Teixeira, A., Zieritz, A., Sousa, R., Lopes-Lima, M. 2016. The male and female complete mitochondrial genome sequences of the Endangered freshwater mussel *Potomida littoralis* (Cuvier, 1798) (Bivalvia: Unionidae). Mitochondrial DNA 27: 3571-3572. doi: 10.3109/19401736.2015.1074223, ISSN: 1940-1736. (Impact factor, Quartil: 1,760, Q4).
79. Froufe, E., Goncalves, D.V., Teixeira, A., Sousa, R., Varandas, S., Ghamizi, M., Zieritz, A., Lopes-Lima, M. 2016. Who lives where? Molecular and morphometric analyses clarify which Unio species (Unionida, Mollusca) inhabit the southwestern Palearctic. Organisms Diversity and Evolution 16: 597-611. doi: 10.1007/s13127-016-0262-x, ISSN: 1439-6092. (Impact factor, Quartil: 1,734, Q1).
80. Froufe, E., Prie, V., Faria, J., Ghamizi, M., Goncalves, D.V., Gurlek, M.E., Karaouzas, I., Kebapci, U., Sereflisan, H., Sobral, C., Sousa, R., Teixeira, A., Varandas, S., Zogaris, S., Lopes-Lima, M. 2016. Phylogeny, phylogeography, and evolution in the Mediterranean region: News from a freshwater mussel (Potomida, Unionida). Molecular Phylogenetics and Evolution 100: 322-332. doi: 10.1016/j.ympev.2016.04.030, ISSN: 1055-7903 (Impact factor, Quartil: 3,792, Q2).
81. Fujimura, A.T., Martinez, R.M., Pinho-Ribeiro, F.A., Silva, A.M.L.D., Baracat, M.M., Georgetti,S.R., Verri, W.A.Jr., Chorilli, M., Rubia Casagrande, R. 2016. Resveratrol-loaded liquid-crystalline system inhibits UVB-induced skin inflammation and oxidative stress in mice. Journal of Natural Products 79: 1329−1338. doi: 10.1021/acs.jnatprod.5b01132, ISSN: 0163-3864. (Impact factor, Quartil: 3,662, Q1).
82. Furtado, C., Arteiro, A., Catalanotti, G., Xavier, J., Camanho, P.P. 2016. Selective ply-level hybridisation for improved notched response of composite laminates. Composite Structures 145: 1-14. doi: 10.1016/j.compstruct.2016.02.050, ISSN: 0263-8223. (Impact factor, Quartil: 3,853, Q1).
83. Furtado, C., Belo, A.F., Nunes, F.M., Ganhão, E., Muller, C.T., Torres. L., Rei, F.T. 2016. Evaluating potential olive orchard sugar food sources for the olive fly parasitoid Psyttalia concolor. BioControl 61: 473-483. doi: 10.1007/s10526-016-9732-5, ISSN: 1386-6141. (Impact factor, Quartil: 1,767, Q1).
84. Garrido, P., Ribeiro, S., Fernandes, J., Vala, H., Rocha-Pereira, P., Bronze-da-Rocha, E., Belo, L., Costa, E., Santos-Silva, A., Reis, F. 2016. Resistance to recombinant human erythropoietin therapy in a rat model of chronic kidney disease associated anemia. International Journal of Molecular Sciences 17: 28. doi: 10.3390/ijms17010028, ISSN: 1422-0067. (Impact factor, Quartil: 3,257, Q2).
85. Gaspar, A.R., Hayes, G., Ginja, C., Ginja, M., Todhunter, R.J. 2016. The Norberg angle is not an accurate predictor of canine hip conformation based on the distraction index and the dorsolateral subluxation score. Preventive Veterinary Medicine 135: 47-52. doi: 10.1016/j.prevetmed.2016.10.020, ISSN: 0167-5877. (Impact factor, Quartil: 2,182, Q1).
86. Gomes, P.S., Zomorodian, A., Kwiatkowski ,L., Lutze, R., Balkowiec, A., Colaço, B., Pinheiro, V., Fernandes, J.C., Montemor, M.F., Fernandes, M.H. 2016. *In vivo* assessment of a new multifunctional coating architecture for improved Mg alloy biocompatibility. Biomedical Materials 11: 45007. doi: 10.1088/1748-6041/11/4/045007, ISSN: 1748-6041. (Impact factor, Quartil: 3,361, Q1).

87. Goncalves, A., Goufo, P., Barros, A., Dominguez-Perles, R., Trindade, H., Rosa, E.A.S., Ferreira, L., Rodrigues, M. 2016. Cowpea (*Vigna unguiculata* L. Walp), a renewed multipurpose crop for a more sustainable agri-food system: nutritional advantages and constraints. Journal of the Science of Food and Agriculture 96: 2941-2951. doi: 10.1002/jsfa.7644, ISSN: 0022-5142. (Impact factor, Quartil: 2,076, Q1)
88. Goncalves, F., Correia, P., Silva, S.P., Almeida-Aguiar, C. 2016. Evaluation of antimicrobial properties of cork. Fems Microbiology Letters 363: 6. doi: 10.1093/femsle/fnv231, ISSN: 0378-1097. (Impact factor, Quartil: 1,858, Q3).
89. Gonzalez, D., Nave, A., Goncalves, F., Nunes, F.M., Campos, M. and Torres, L. 2016. Effects of ten naturally occurring sugars on the reproductive success of the green lacewing, *Chrysoperla carnea*. Biocontrol 61: 57-67. doi: 10.1007/s10526-015-9694-z, ISSN: 1386-6141. (Impact factor, Quartil: 1,767, Q1).
90. Gonzalez, D., Nave, A., Goncalves, F., Nunes, F.M., Campos, M. and Torres, L. 2016. Higher longevity and fecundity of *Chrysoperla carnea*, a predator of olive pests, on some native flowering Mediterranean plants. Agronomy for Sustainable Development 36: 10. doi: 10.1007/s13593-016-0369-7, ISSN: 1774-0746. (Impact factor, Quartil: 4,141, Q1).
91. González-Fernández, M.L., Pérez-Castrillo, S., Sánchez-Lázaro, J.A., Prieto-Fernández, J.G., López-González, M.E., Lobato-Pérez, S., Colaço, B.J., Olivera, E.R., Villar-Suárez, V. 2016. Assessment of regeneration in meniscal lesions by use of mesenchymal stem cells derived from equine bone marrow and adipose tissue. American Journal of Veterinary Research 77: 779-788. doi: 10.2460/ajvr.77.7.779, ISSN: 0002-9645. (Impact factor, Quartil: 1,124, Q2).
92. Gouvinhas, I., Dominguez-Perles, R., Machado, N., Carvalho, T., Matos, C., Barros, A. 2016. Effect of agro-Environmental factors on the mineral content of olive oils: categorization of the three major Portuguese cultivars. Journal of the American Oil Chemists Society 93: 813-822. doi: 10.1007/s11746-016-2827-4, ISSN: 0003-021X. (Impact factor, Quartil: 1,505, Q2).
93. Gouvinhas, I., Machado, N., Gironés-Vilaplana, A., Gomes, S., Carvalho, T., Dominguez-Perles, R., Barros, I.R.N. 2016. Sorting out the value of spectroscopic tools to assess the *Colletotrichum acutatum* impact in olive cultivars with different susceptibilities Journal of Chemometrics 30: 548–558. doi: 10.1002/cem.2819, ISSN: 0886-9383. (Impact factor, Quartil: 1,873, Q1).
94. Graca, V.C., Barros, L., Calhelha, R.C., Dias, M.I., Carvalho, A.M., Santos-Buelga, C., Ferreira, I., Santos, P.F. 2016. Chemical characterization and bioactive properties of Geranium molle L.: from the plant to the most active extract and its phytochemicals. Food and Function 7: 2204-2212. doi: 10.1039/c5fo01479d, ISSN: 2042-6496. (Impact factor, Quartil: 2,686, Q2).
95. Graca, V.C., Ferreira, I., Santos, P.F. 2016. Phytochemical composition and biological activities of *Geranium robertianum* L.: A review. Industrial Crops and Products 87: 363-378. doi: 10.1016/j.indcrop.2016.04.058, ISSN: 0926-6690. (Impact factor, Quartil: 3,449, Q1).
96. Gregorio, H., Raposo, T.P., Queiroga, F.L., Prada, J., Pires, I. 2016. Investigating associations of cyclooxygenase-2 expression with angiogenesis, proliferation, macrophage and T-lymphocyte infiltration in canine melanocytic tumours. Melanoma Research 26: 338-347. doi: 10.1097/cmr.0000000000000262, ISSN: 0960-8931. (Impact factor, Quartil: 2,219, Q3).

97. Gregory, M., B Sarmento, G Franklin, J A Martins, C Silva, A Gomes, M Passos, O P Coutinho and A Dias. 2016. Curcumin Encapsulated into Methoxy Poly(Ethylene Glycol) Poly(ε-Caprolactone) Nanoparticles Increases Cellular Uptake and Neuroprotective Effect in Glioma Cells. Planta Med 82: 1-11. http://dx.doi.org/10.1055/s-0042-112030. (Impact factor, Quartil: 1,99, Q2)
98. Hou, W., Shakya, P., Franklin, G. 2016. A perspective on *Hypericum perforatum* genetic transformation. Frontiers in Plant Science 7: 879. doi: 10.3389/fpls.2016.00879, ISSN: 1664-462X. (Impact factor, Quartil: 4,495, Q1).
99. Hughes, S.J., Cabral, J.A., Bastos, R., Cortes, R., Vicente, J., Eitelberg, D., Yu, H.R., Honrado, J. and Santos, M. 2016. A stochastic dynamic model to assess land use change scenarios on the ecological status of fluvial water bodies under the Water Framework Directive. Science of the Total Environment 565: 427-439. doi: 10.1016/j.scitotenv.2016.04.153, ISSN: 0048-9697. (Impact factor, Quartil: 2,664, Q2).
100. Negrão, J.H., Brito, L.D., Dias, A.G., Júnior, C.C., Lahr, F.R. 2016. Numerical and experimental study of small-scale moment-resistant reinforced concrete joints for timber frames. Construction and Building Materials 118: 89–103. doi: 10.1016/j.conbuildmat.2016.05.036, ISSN: 0950-0618.(Impact factor, Quartil: 2,421, Q1).
101. Kamakshi, K., Silva, J.P.B., Sekhar, K.C., Marslin, G., Moreira, J.A., Conde, O., Almeida, A., Pereira, M. and Gomes, M.J.M. 2016. Influence of substrate temperature on the properties of pulsed laser deposited silver nanoparticle thin films and their application in SERS detection of bovine serum albumin. Applied Physics B-Lasers and Optics 122: 8. doi: 10.1007/s00340-016-6385-0, ISSN: 0946-2171. (Impact factor, Quartil: 1,785, Q2).
102. Kurz-Besson, C., Lousada, J., Gaspar, M., Correia, I., David, T., Soares, P., Cardoso, R., Russo, A., Varino, F., Mériaux, C., Trigo, R., Gouveia, C. 2016. Effects of Recent Minimum Temperature and Water Deficit Increases on Pinus pinaster Radial Growth and Wood Density in Southern Portugal. Frontiers in Plant Science 7: 1170. doi: 10.3389/fpls.2016.01170, ISSN: 1664-462X. (Impact factor, Quartil: 4,495, Q1).
103. Leitao, F., Baptista, V., Teodosio, M.A., Hughes, S.J., Vieira, V. and Chicharo, L. 2016. The role of environmental and fisheries multi-controls in white seabream (*Diplodus sargus*) artisanal fisheries in Portuguese coast. Regional Environmental Change 16: 163-176. doi: 10.1007/s10113-014-0726-5, ISSN: 1436-3798. (Impact factor, Quartil: 2,664, Q2).
104. Lemieszek, M.K., Ribeiro, M., Alves, H.G., Marques, G., Nunes, F.M. and Rzeski, W. 2016. Boletus edulis ribonucleic acid-a potent apoptosis inducer in human colon adenocarcinoma cells. Food and Function 7: 3163-3175. doi: 10.1039/c6fo00132g, ISSN: 2042-6496. (Impact factor, Quartil: 2,686, Q2).
105. Liang, J., T. W. Crowther, N. Picard, S. Wiser, M. Zhou, G. Alberti, E.-D. Schulze, A. D. McGuire, F. Bozzato, H. Pretzsch, S. de-Miguel, A. Paquette, et al. 2016. Positive biodiversity-productivity relationship predominant in global forests. Science 354: 6309. doi: 10.1126/science.aaf8957, ISSN: 0036-8075. (Impact factor, Quartil: 34,661, Q1).
106. Lopes, D., Walford, Nigel; Viana, H. and Sette Junior, C. R., 2016. A proposed methodology for the correction of the leaf area index measured with a ceptometer for pinus and eucalyptus forests. Revista Árvore 40 (5): 845-854. http://dx.doi.org/10.1590/0100-67622016000500008 (Impact factor, Quartil: 0,267, Q1).
107. Lopes-Lima, M., Hinzmann, M., Teixeira, A., Varandas, S., Machado, J., Sousa, R., Froufe, E.

2016. The strange case of the tetragenous *Anodonta anatine*. Journal of Experimental Zoology Part a-Ecological Genetics and Physiology 325: 52-56. doi: 10.1002/jez.1995, ISSN: 1932-5223. (Impact factor, Quartil: 1,226, Q2).

108. Lopes-Lima, M., Sousa, R., Teixeira, A., Varandas, S., Riccardi, N., Aldridge, D.C. and Froufe, E. 2016. Newly developed microsatellite markers for the pan-European duck mussel, Anodonta anatina: revisiting the main mitochondrial lineages. Aquatic Conservation-Marine and Freshwater Ecosystems 26: 307-318. doi: 10.1002/aqc.2575, ISSN: 1052-7613. (Impact factor, Quartil: 2,415, Q2).
109. Lopez, C.L., Celaya, R., Santos, A.S., Rodrigues, M.A.M., Osoro, K. and Ferreira, L.M.M. 2016. Combination of long-chain alcohols and fatty acids with alkanes as faecal markers to estimate feed intake and digestibility in horses and cattle fed on grass-heathland vegetation communities. Canadian Journal of Animal Science 96: 221-231. doi: 10.1139/cjas-2015-0071, ISSN: 0008-3984. (Impact factor, Quartil: 0,724, Q3).
110. Lourenço, J., Mendo, S., Pereira, R. 2016. Bioindicator species and biomarkers of effect in an early warning scheme for a preliminary risk assessment. Journal of Hazardous Materials 317: 503-542. doi: 10.1016/j.jhazmat.2016.06.020, ISSN: 0304-3894. (Impact factor, Quartil: 4,836, Q1).
111. Luzio, A., Matos, M., Santos, D., Fontaínhas-Fernandes, A.A., Monteiro, S.M., Coimbra, A.M. 2016. Disruption of apoptosis pathways involved in zebrafish gonad differentiation by 17B-ethinylestradiol and fadrozole exposures Aquatic Toxicology 177: 269-284. doi: 10.1016/j.aquatox.2016.05.029 , ISSN: 0166-445X. (Impact factor, Quartil: 3,557, Q1).
112. Luzio, A., Monteiro, S.M., Rocha, E., Fontainhas-Fernandes, A.A. and Coimbra, A.M. 2016. Development and recovery of histopathological alterations in the gonads of zebrafish (Danio rerio) after single and combined exposure to endocrine disruptors (17 alpha-ethinylestradiol and fadrozole). Aquatic Toxicology 175: 90-105. doi: 10.1016/j.aquatox.2016.03.014, ISSN: 0166-445X. (Impact factor, Quartil: 3,557, Q1).
113. Luzio, A., Santos, D., Fontainhas-Fernandes, A.A., Monteiro, S.M. and Coimbra, A.M. 2016. Effects of 17 alpha-ethinylestradiol at different water temperatures on zebrafish sex differentiation and gonad development Aquatic Toxicology 174: 22-35. doi: 10.1016/j.aquatox.2016.02.003 , ISSN: 0166-445X. (Impact factor, Quartil: 3,557, Q1).
114. Martins, F., Oliveira, I., Barros, A., Amaral, C., Afonso, S., Ferreira, H., Gonçalves, B. 2016. Leaf age, seasonal and annual variations in Salvia officinalis L. var. purpurascens biochemical characteristics. Journal of Applied Botany and Food Quality 89: 299-306. doi: 10.5073/JABFQ.2016.089.039, ISSN: 1439-040X. (Impact factor, Quartil: 1,085, Q3)
115. Martins, J., Colaço, B.J., Ferreira, A.J., Ginja, M.M. 2016. Analysis of pelvic rotation on the standard hip ventrodorsal extended radiographic view. Veterinary and Comparative Orthopaedics and Traumatology (VCOT) 29: 68-74. doi: 10.3415/VCOT-15-02-0025, ISSN: 0932-0814. (Impact factor, Quartil: 0,853, Q3).
116. Martins, T., Valentim, A. M., Pereira, N., Antunes, L. M. 2016. Anaesthesia and analgesia in laboratory adult zebrafish: a question of refinement. Laboratory Animals 50: 476-488. doi: 10.1177/0023677216670686, ISSN: 0023-6772. (Impact factor, Quartil: 1,553, Q1).
117. Monteiro-Henriques, T., Martins, M.J., Cerdeira, J.O., Silva, P., Arsenio, P., Silva, A., Bellu, A., Costa, J.C. 2016. Bioclimatological mapping tackling uncertainty propagation: application to mainland Portugal. International Journal of Climatology 36: 400-411. doi:

10.1002/joc.4357, ISSN: 0899-8418. (Impact factor, Quartil: 3,609, Q1).

118. Morinha, F., Clemente, C., Cabral, J.A., Lewicka, M.M., Travassos, P., Carvalho, D., Davila, J.A., Santos, M., Blanco, G., Bastos, E. 2016. Next-generation sequencing and comparative analysis of *Pyrrhocorax pyrrhocorax* and *Pyrrhocorax graculus* (Passeriformes: Corvidae) mitochondrial genomes. Mitochondrial DNA Part A 27: 2278-2281. doi: 10.3109/19401736.2014.984179, ISSN: 1940-1736. (Impact factor, Quartil: 1,760, Q4).
119. Mota, S.M., Ferreira, A.F., Azevedo, J., Nery, T.L., Zermiani, F., Queiroga, F.L. 2016. Biometric values, C-reactive protein, and proteinogram of healthy blonde capuchin (Sapajus flavius) kept in northeast of Brazil. Journal of Medical Primatology 45: 318–323. doi: 10.1111/jmp.12243, ISSN: 0047-2565. (Impact factor, Quartil: 0,930, Q3).
120. Nave, A., Goncalves, F., Crespi, A.L., Campos, M., Torres, L. 2016. Evaluation of native plant flower characteristics for conservation biological control of *Prays oleae*. Bulletin of Entomological Research 106: 249-257. doi: 10.1017/s0007485315001091, ISSN: 0007-4853. (Impact factor, Quartil: 1,761, Q1).
121. Negrao, J.H., Brito, L.D., Dias, A.G., Junior, C.C. and Lahr, F.R. 2016. Numerical and experimental study of small-scale moment-resistant reinforced concrete joints for timber frames. Construction and Building Materials 118: 89-103. doi: 10.1016/j.conbuildmat.2016.05.036, ISSN: 0950-0618. (Impact factor, Quartil: 2,421, Q1).
122. Nogueira, A., R.A.F., Ginja, M., Oliveira, P.A., Pires, M.J. 2016. Ultrasonographic Evaluation of the Kidney in 5/6 Nephrectomized Rats: Correlation with Biochemical and Histopathological Findings. In Vivo 30: 829-834. URL: http://iv.iiarjournals.org/content/30/6/829.long, ISSN: 0258-851X. (Impact factor, Quartil: 0,832, Q4).
123. Noronha, H., Araújo, D., Conde, C., Martins, A.P., Soveral, G., Chaumont, F., Delrot, S., Gerós, H. The grapevine Uncharacterized Intrinsic Protein 1 (VvXIP1) is regulated by drought stress and transports glycerol, hydrogen peroxide, heavy metals but not water PLOSone 11: e0160976. doi: 10.1371/journal.pone.0160976, ISSN: 1932-6203. (Impact factor, Quartil: 3,057, Q1).
124. Nouman, W., Anwar, F., Gull, T., Newton, A., Rosa, E., Dominguez-Perles, R. 2016. Profiling of polyphenolics, nutrients and antioxidant potential of germplasm's leaves from seven cultivars of *Moringa oleifera* Lam Industrial Crops and Products 83: 166-176. doi: 10.1016/j.indcrop.2015.12.032, ISSN: 0926-6690. (Impact factor, Quartil: 3,449, Q1).
125. Nunes, S., Santos, C., Moutinho-Pereira, J., Correia, C., Oliveira, H., de Oliveira, J.M.F., Pereira, V.T., Almeida, T., Marum, L., Dias, M.C. 2016. Physiological characterization and true-to-typeness evaluation of *in vitro* and ex vitro seedlings of *Pinus elliottii*: A contribution to breeding programs. Plant Physiology and Biochemistry 107: 222-227. doi: 10.1016/j.plaphy.2016.05.039, ISSN: 0981-9428. (Impact factor, Quartil: 2,928, Q1).
126. Oliveira PA, Gil da Costa RM, Vasconcelos-Nóbrega C, Arantes-Rodrigues R., Pinto Leite, R., 2016. Challenges with *in vitro* and *in vivo* experimental models of urinary bladder cancer for novel drug discovery. Expert Opinion on Drug Discovery 11: 599-607. doi: 10.1080/17460441.2016.1174690, ISSN: 1746-0441. (Impact factor, Quartil: 3,484, Q1).
127. Oliveira, A.I., Pinho, C., Sarmento, B., Dias, A.C.P. 2016. Neuroprotective activity of *Hypericum perforatum* and its major components. Frontiers in Plant Science 7: 1004.

doi: 10.3389/fpls.2016.01004, ISSN: 1664-462X. (Impact factor, Quartil: 4,495, Q1).

128. Oliveira, P.C., Moura, J.P., Fernandes, L.F., Amaral, E.M., Oliveira, A.A. 2016. A non-destructive method based on digital image processing for calculate the vigor and the vegetative expression of vines. Computers and Electronics in Agriculture 124: 289-294. doi: 10.1016/j.compag.2016.04.020 , ISSN: 0168-1699. (Impact factor, Quartil: 1,892, Q1).
129. Oliveira, T.M., Barros, A.M.G., Ager, A.A. and Fernandes, P.M. 2016. Assessing the effect of a fuel break network to reduce burnt area and wildfire risk transmission. International Journal of Wildland Fire 25: 619-632. doi: 10.1071/wf15146, ISSN: 1049-8001. (Impact factor, Quartil: 2,078, Q1).
130. Oliveira-Santos, M., Santos, J. A., Soares, J., Dias, A., Quaresma, M. 2016. Influence of meteorological conditions on RSV infection in Portugal. International Journal of Biometeorology60: 1-11. doi: 10.1007/s00484-016-1168-1, ISSN: 0020-7128. (Impact factor, Quartil: 2,309, Q2).
131. Pacheco, F.A.L., Sanches Fernandes, L.F. 2016. Environmental land use conflicts in catchments: A major cause of amplified nitrate in river water. Science of the Total Environment 548-549: 173-188. doi: 10.1016/j.scitotenv.2015.12.155, ISSN: 0048-9697. (Impact factor, Quartil: 3,976, Q1).
132. Parente, J., Pereira, M.G. 2016. Structural fire risk: the case of Portugal. Science of the Total Environment 573: 883–893. doi: 10.1016/j.scitotenv.2016.08.164, ISSN: 0048-9697. (Impact factor, Quartil: 3,976, Q1).
133. Parente, J., Pereira, M.G., Tonini, M. 2016. Space-time clustering analysis of wildfires: The influence of dataset characteristics, fire prevention policy decisions, weather and climate. Science of the Total Environment 559: 151-165. doi: 10.1016/j.scitotenv.2016.03.129, ISSN: 0048-9697. (Impact factor, Quartil: 3,976, Q1).
134. Pedro, D.F.N., Ramos, A.A., Lima, C.F., Baltazar, F.,Pereira-Wilson, C. 2016. Colon cancer chemoprevention by sage tea drinking: decreased DNA damage and cell proliferation. Phytotherapy Research 30: 298-305. doi: 10.1002/ptr.5531 , ISSN: 0951-418X. (Impact factor, Quartil: 2,694, Q2).
135. Pereira, C., Guedes, J., Gonçalves, M., Loureiro, L., Castro, L., Gerós, H., Rodrigues, L., Côrte-Real, M. 2016. Lactoferrin selectively triggers apoptosis in highly metastatic breast cancer cells through inhibition of plasmalemmal V-H+-ATPase. Oncotarget 7: 62144-62158. doi: 10.18632/oncotarget.11394, ISSN: 1949-2553. (Impact factor, Quartil: 5,008, Q1).
136. Pereira, F.A.M., de Moura, M.F.S.F., N. Dourado, N. Dourado, Morais, J.J.L., Silva, F.G.A., Dias, M.I.R. 2016. Bone fracture characterization under mixed-mode I + II loading using the MMB test. Engineering Fracture Mechanics 166: 151–163. doi: 10.1016/j.engfracmech.2016.08.011, ISSN: 0013-7944. (Impact factor, Quartil: 2,024 , Q1).
137. Pereira, M.G., Sanches Fernandes, L, Carvalho, S., Santos, R.B., Caramelo, L., Alencoao, A. 2016. Modelling the impacts of wildfires on runoff at the river basin ecological scale in a changing Mediterranean environment. Environmental Earth Sciences 75: 392. doi: 10.1007/s12665-015-5184-y, ISSN: 1866-6280. (Impact factor, Quartil: 1,765, Q2).
138. Pinto, A., Sanches Fernandes, L.F., Maia, R. 2016. Monitoring methodology of interventions for riverbanks stabilization: assessment of technical solutions performance. Water Resources Management 30: 1-18. doi: 10.1007/s11269-016-1486-4, ISSN: 0920-

4741. (Impact factor, Quartil: 2,437, Q1).

139. Pinto, R.M., Benali, A., Sá, A., Fernandes, P.M., Soares, P.M., Cardoso, R.M., Trigo, R.M., Pereira, J.M.C. 2016. Probabilistic fire spread forecast as a tool for fire management in an operational setting. SpringerPluS 5: 1205 . doi: 10.1186/s40064-016-2842-9, ISSN: 2193-1801. (Impact factor, Quartil: 0,982, Q2).
140. Pinto-Leite, R., Arantes-Rodrigues, R., Sousa, N., Oliveira, P.A., Santos, L. 2016. mTOR inhibitors in urinary bladder cancer. Tumor Biology 37: 11541–11551. doi: 10.1007/s13277-016-5083-1, ISSN: 1010-42839. (Impact factor, Quartil: 2,926, Q2).
141. Raposo, T.P., Beirão, B.C., Pires, I., Prada, J., Brilhante, P., Argyle, D.J., Queiroga, F.L. 2016. Immunohistochemical expression of CCR2, CSF1R and MMP9 in canine inflammatory mammary carcinomas. Anticancer Research 36: 1805-1813. URL: https://www.ncbi.nlm.nih.gov/pubmed/27069163, ISSN: 0250-7005. (Impact factor, Quartil: 1,895, Q3).
142. Rato, T.J., Rendall, R., Gomes, V., Chin, S.T., Chiang, L.H., Saraiva, P.M., Reis, M.S. 2016. A systematic methodology for comparing batch process monitoring methods: Part I-assessing detection strength. Industrial and Engineering Chemistry Research 55: 5342-5358. doi: 10.1021/acs.iecr.5b04851, ISSN: 0888-5885. (Impact factor, Quartil: 2,567, Q2).
143. Ribeiro, S., Garrido, P., Fernandes, J., Vala, H., Rocha-Pereira, P., Costa, E., Belo, L., Reis, F., Santos-Silva, A. 2016. Pathological and molecular mechanisms underlying resistance to recombinant human erythropoietin therapy in the remnant kidney rat model of chronic kidney disease associated anemia. Biochimie 125: 150-162. doi: 10.1016/j.biochi.2016.03.012, ISSN: 0300-9084. (Impact factor, Quartil: 3,017, Q2).
144. Ribeiro, S., Garrido, P., Fernandes, J., Vala, H., Rocha-Pereira, P., Costa, E., Belo, L., Reis, F. and Santos-Silva, A. 2016. Renal risk-benefit determinants of recombinant human erythropoietin therapy in the remnant kidney rat model - hypertension, anaemia, inflammation and drug dose. Clinical and Experimental Pharmacology and Physiology 43: 343-354. doi: 10.1111/1440-1681.12541, ISSN: 1440-1681. (Impact factor, Quartil: 2,004, Q3).
145. Ribeiro, S., Garrido, P., Fernandes, J., Vala, H., Rocha-Pereira, P., Costa, E., Belo, L., Reis, F., Santos-Silva, A. 2016. Impaired renal endothelial nitric oxide synthase and reticulocyte production as modulators of hypertension induced by rHuEPO in the rat. Life Sciences 151: 147-156. doi: 10.1016/j.lfs.2016.02.088, ISSN: 0024-3205. (Impact factor, Quartil: 2,685, Q2).
146. Rio-Maior, H., Beja, P., Nakamura, M., Santos, N., Brandao, R., Sargo, R., Dias, I., Silva, F., Alvares, F. 2016. Rehabilitation and post-release monitoring of two wolves with severe injuries Journal of Wildlife Management 80: 729-735. doi: 10.1002/jwmg.1055, ISSN: 0022-541X. (Impact factor, Quartil: 1,725, Q3).
147. Rodrigues, H., Carvalho, M.I., Pires, I., Prada, J., Queiroga, F.L. 2016. Clinicopathological significance of caspase-3 and KI-67 expression in canine mammary gland tumors. Acta Veterinaria Hungarica 64: 78-89. doi: 10.1556/004.2016.009 , ISSN: 0236-6290. (Impact factor, Quartil: 0,871, Q2).
148. Rossa, C.G., Veloso, R., Fernandes, P.M. 2016. A laboratory-based quantification of the effect of live fuel moisture content on fire spread rate. International Journal of Wildland Fire 25: 569-573. doi: 10.1071/wf15114, ISSN: 1049-8001. (Impact factor, Quartil: 2,078, Q1).

149. Salavessa, E., Candeias, A., Mirao, J., Sousa, L.M.O., Duarte, N., Jalali, S. and Salgueiro, J. 2016. 19th c. Coloured stuccos and plasters from Grilos' Church (Oporto, Portugal): Materials and techniques employed. Color Research and Application 41: 246-251. doi: 10.1002/col.22041, ISSN: 0361-2317. (Impact factor, Quartil: 0,847, Q3).
150. Salgado, C.L., Grenho, L., Fernandes, M.H., Colaço, B.J., Monteiro, F.J. 2016. Biodegradation, biocompatibility, and osteoconduction evaluation of collagen-nanohydroxyapatite cryogels for bone tissue regeneration. Journal of Biomedical Materials Research A 104: 57-70. doi: 10.1002/jbm.a.35540, ISSN: 1549-3296. (Impact factor, Quartil: 3,263, Q1).
151. Sanchez-Lopez, E., Egea, M.A., Cano, A., Espina, M., Calpena, A.C., Ettcheto, M., Camins, A., Souto, E.B., Silva, A.M., Garcia, M.L. 2016. PEGylated PLGA nanospheres optimized by design of experiments for ocular administration of dexibuprofen-in vitro, ex vivo and in vivo characterization. Colloids and Surfaces B-Biointerfaces 145: 241-250. doi: 10.1016/j.colsurfb.2016.04.054, ISSN: 0927-7765. (Impact factor, Quartil: 3,902, Q2).
152. Santos, C., Ferreirinha, P., Sousa, H., Ribeiro, J., Bastos, M.M., Neto, T., Oliveira, P.A., Medeiros, R., Vilanova, M., Gil da Costa, R.M. 2016. Ptaquiloside from bracken (*Pteridium* spp.) inhibits tumour-infiltrating CD8+ T cells in HPV-16 transgenic mice. Food and Chemical Toxicology 97: 277-285. doi: 10.1016/j.fct.2016.09.019, ISSN: 0278-6915. (Impact factor, Quartil: 3,584, Q1).
153. Santos, C., Neto, T., Ferreirinha, P., Sousa, H., Ribeiro, J., Bastos, M.M., Faustino-Rocha, A.I., Oliveira, P.A., Medeiros, R., Vilanova, M., Gil da Costa, R.M. 2016. Celecoxib promotes degranulation of CD8+ T cells in HPV-induced lesions of K14-HPV16 transgenic mice. Life Sciences 157: 67-73. doi: 10.1016/j.lfs.2016.05.040, ISSN: 0024-3205. (Impact factor, Quartil: 2,685, Q2).
154. Santos, C., Pires, M.D., Santos, D. and Payan-Carreira, R. 2016. Distribution of superoxide dismutase 1 and glutathione peroxidase 1 in the cyclic canine endometrium. Theriogenology 86: 738-748. doi: 10.1016/j.theriogenology.2016.02.027, ISSN: 0093-691X. (Impact factor, Quartil: 1,838, Q3).
155. Santos, C.S., Carvalho, S.M.P., Leite, A., Moniz, T., Roriz, M., Rangel, A., Rangel, M., Vasconcelos, M.W. 2016. Effect of tris(3-hydroxy-4-pyridinonate) iron(III) complexes on iron uptake and storage in soybean (*Glycine max* L.). Plant Physiology and Biochemistry 106: 91-100. doi: 10.1016/j.plaphy.2016.04.050, ISSN: 0981-9428. (Impact factor, Quartil: 2,928, Q1).
156. Santos, E., Matos, M., Silva, P., Figueiras, A.M., Benito, C., Pinto-Carnide, O. 2016. Molecular diversity and genetic relationships in Secale. Journal of Genetics 95: 273-281. doi: 10.1007/s12041-016-0632-3, ISSN: 0022-1333. (Impact factor, Quartil: 1,108, Q4).
157. Santos, F.T., Goufo, P., Santos, C., Botelho, D., Fonseca, J., Queiros, A., Costa, M., Trindade, H. 2016. Effect on yield, phenolic compounds and vitamin C. Food Chemistry 209: 293-301. doi: 10.1016/j.foodchem.2016.04.087, ISSN: 0308-8146 . (Impact factor, Quartil: 4,052, Q1).
158. Santos, J.A., Belo-Pereira, M., Fraga, H., Pinto, J.G. 2016. Understanding climate change projections for precipitation over western Europe with a weather typing approach. Journal of Geophysical Research-Atmospheres 121: 1170-1189 . doi: 10.1002/2015jd024399, ISSN: 0148-0227. (Impact factor, Quartil: 3,318, Q1).
159. Santos, M., Bessa, R., Cabra,J., Pacheco, F. A., Leitão, D., Moreira, F., Pinto, M., Lecoq, M., Silva, J.P. 2016. Impacts of land use and infrastructural changes on threatened

Little Bustard Tetrax tetrax breeding populations: quantitative assessments using a recently developed spatially explicit dynamic modelling framework. Bird Conservation International 26: 418-435. doi: 10.1017/S0959270915000258, ISSN: 0959-2709. (Impact factor, Quartil: 1,000, Q2).

160. Santos, M., Ferreira, D., Bastos, R., Vicente, J., Honrado, J., Kueffer, C., Kull, C.A., Berger, U. and Cabral, J.A. 2016. Linking landscape futures with biodiversity conservation strategies in northwest Iberia-A simulation study combining surrogates with a spatio-temporal modelling approach. Ecological Informatics 33: 85-100. doi: 10.1016/j.ecoinf.2016.04.008, ISSN: 1574-9541. (Impact factor, Quartil: 1,683, Q3).
161. Santos, S., Silva, A.M., Matos, M., Monteiro, S.M. and Alvaro, A.R. 2016. Copper induced apoptosis in Caco-2 and Hep-G2 cells: Expression of caspases 3, 8 and 9, AIF and p53. Comparative Biochemistry and Physiology C-Toxicology & Pharmacology 185-186: 138-146. doi: 10.1016/j.cbpc.2016.03.010, ISSN: 1532-0456. (Impact factor, Quartil: 2,546, Q3).
162. Sanz, J.A., Fernandes, A.M., Barrenechea, E., Silva, S., Santos, V., Goncalves, N., Paternain, D., Jurio, A., Melo-Pinto, P. 2016. Lamb muscle discrimination using hyperspectral imaging: Comparison of various machine learning algorithms. Journal of Food Engineering 174: 92-100. doi: 10.1016/j.jfoodeng.2015.11.024, ISSN: 0260-8774. (Impact factor, Quartil: 3,199, Q1).
163. Sette Jr.; Tomazello M.; Lousada J.; Lopes D.; Laclau J. 2016. Relationship berween climate variables, trunk growth rate and wood density of Eucalyptus grandis W. Mill ex Maiden trees. Revista Árvore 40: 337-346. doi: 10.1590/0100-67622016000200016, ISSN: 0100-6762. (Impact factor, Quartil: 0,296, Q4).
164. Silva, A.P., Oliveira, I., Silva, M.E., Guedes, C.M., Borges, O., Magalhaes, B., Goncalves, B. 2016. Starch characterization in seven raw, boiled and roasted chestnuts (*Castanea sativa* Mill.) cultivars from Portugal. Journal of Food Science and Technology-Mysore 53: 348-358. doi: 10.1007/s13197-015-2047-1, ISSN: 0022-1155. (Impact factor, Quartil: 1,241, Q3).
165. Silva, B.F., Andreani, T., Gavina, A., Vieira, M.N., Pereira, C.M., Rocha-Santos, T., Pereira, R. 2016. Toxicological impact of cadmium-based quantum dots towards aquatic biota: Effect of natural sunlight exposure. Aquatic Toxicology 176: 197-207. doi: 10.1016/j.aquatox.2016.05.001 , ISSN: 0166-445X. (Impact factor, Quartil: 3,557, Q1).
166. Silva, D., Gabriel, R., Moreira, M., Abrantes, J., Faria, A. 2016. Foot rollover temporal parameters during straight-ahead and side-cut walking in obese and nonobese postmenopausal women. Journal of Motor Behavior 48: 413-423. doi: 10.1080/00222895.2015.1123139, ISSN: 0022-2895. (Impact factor, Quartil: 1,573, Q4).
167. Silva, F.C., Sargo, R. J., Sousa, L.C., Rio-Maior, H., Brandão, R., Santos, N., Álvares, F., Dias., I.R. 2016. Treatment of a forelimb fracture and rehabilitation of a free-ranging Iberian Wolf. Pesquisa Veterinaria Brasileira 36: 412-416. doi: 10.1590/S0100-736X2016000500010, ISSN: 0100-736X. (Impact factor, Quartil: 0,335, Q4).
168. Silva, F.G.A., de Moura, M., Dourado, N., Xavier, J., Pereira, F.A.M., Morais, J.J.L., Dias, M.I.R. 2016. Mixed-mode I plus II fracture characterization of human cortical bone using the single leg bending test. Journal of the Mechanical Behavior of Biomedical Materials 54: 72-81. doi: 10.1016/j.jmbbm.2015.09.004, ISSN: 1751-6161. (Impact factor, Quartil: 2,876, Q1).

169. Silva, P., Fernandes, P., Sena-Cruz, J., Xavier, J., Castro, F., Soares, D., Carneiro, V. 2016. Effects of different environmental conditions on the mechanical characteristics of a structural epoxy. Composites Part B-Engineering 88: 55-63. doi: 10.1016/j.compositesb.2015.10.036, ISSN: 1359-8368. (Impact factor, Quartil: 3,850, Q1).
170. Silva, S., Oliveira, H., Craveiro, S.C., Calado, A.J. and Santos, C. 2016. Pure anatase and rutile plus anatase nanoparticles differently affect wheat seedlings. Chemosphere 151: 68-75. doi: 10.1016/j.chemosphere.2016.02.047, ISSN: 00456535. (Impact factor, Quartil: 3,698, Q1).
171. Silva, S.R., Payan-Carreira, R., Guedes, C.M., Coelho, S., Santos, A.S. 2016. Correlations between cresty neck scores and post-mortem nape fat measurements in horses, obtained after photographic image analysis. Acta Veterinaria Scandinavica 58: 26-30. doi: 10.1186/s13028-016-0241-4, ISSN: 0044-605X. (Impact factor, Quartil: 1,23, Q2).
172. Silva, S.R., Payan-Carreira, R., Quaresma, M., Guedes, C.M., Santos, A.S. 2016. Relationships between body condition score and ultrasound skin-associated subcutaneous fat depth in equids. Acta Veterinaria Scandinavica 58: 37-42. doi: 10.1186/s13028-016-0243-2, ISSN: 0044-605X. (Impact factor, Quartil: 1,23, Q3).
173. Siram, K., Marslin, G., Raghavan, C.V., Balakumar, K., Rahman, H., Franklin, G. 2016. A brief perspective on the diverging theories of lymphatic targeting with colloids. International Journal of Nanomedicine 11: 2867–2872. doi: 10.2147/IJN.S105852, ISSN: 1178-2013. (Impact factor, Quartil: 4,320, Q2).
174. Siram, K., Raghavan, C.V., Marslin, G., Rahman, H., Selvaraj, D., Balakumar, K., Franklin, G. 2016. Quillaja saponin: A prospective emulsifier for the preparation of solid lipid nanoparticles Colloids and Surfaces B: Biointerfaces 147: 274-280. doi: 10.1016/j.colsurfb.2016.07.065 , ISSN: 0927-7765. (Impact factor, Quartil: 3,902, Q1).
175. Sousa, R., Varandas, S., Teixeira, A., Ghamizi, M., Froufe, E. and Lopes-Lima, M. 2016. Pearl mussels (*Margaritifera marocana*) in Morocco: Conservation status of the rarest bivalve in African fresh waters. Science of the Total Environment 547: 405-412. doi: 10.1016/j.scitotenv.2016.01.003, ISSN: 0048-9697. (Impact factor, Quartil: 3,976, Q1).
176. Sousa, V.B., Louzada, J.L. and Pereira, H. 2016. Age trends and within-site effects in wood density and radial growth in *Quercus faginea* mature trees. Forest Systems 25: 9. doi: 10.5424/fs/2016251-08411 , ISSN: 2171-5068 . (Impact factor, Quartil: 0,761, Q3).
177. Summavielle, T., Venâncio, C., Antunes, L. 2016. In Response. Anesthesia and Analgesia 122: 918-920. doi: 10.1213/ANE.0000000000001001, ISSN: 0003-2999. (Impact factor, Quartil: 3,827, Q1).
178. Trigo, R.M., Sousa, P.M., Pereira, M.G., Rasilla, D., Gouveia, C.M. 2016. Modelling wildfire activity in Iberia with different atmospheric circulation weather types. International Journal of Climatology 36: 2761-2778. doi: 10.1002/joc.3749, ISSN: 0899-8418. (Impact factor, Quartil: 3,609, Q1).
179. Tupinambas, T.H., Cortes, R.M.V., Hughes, S.J., Varandas, S.G. and Callisto, M. 2016. Macroinvertebrate responses to distinct hydrological patterns in a tropical regulated river. Ecohydrology 9: 460-471. doi: 10.1002/eco.1649, ISSN: 1936-0584. (Impact factor, Quartil: 2,138, Q2).
180. Valentim, A.M., Felix, L.M., Carvalho, L., Diniz, E., Antunes, L.A. 2016. A new anaesthetic protocol for adult zebrafish (Danio rerio): propofol combined withlLidocaine. PLOSone 11: e0147747. doi: 10.1371/journal.pone.0147747, ISSN:

1932-6203. (Impact factor, Quartil: 3,057, Q1).

181. Valera., C., Valle Junior, R., Varandas, S., Sanches Fernandes, L.F., Pacheco, F.A.L. 2016. The role of environmental land use conflicts in soil fertility: A study on the Uberaba River basin, Brazil. Science of the Total Environment 562: 463-473. doi: 10.1016/j.scitotenv.2016.04.046, ISSN: 0048-9697. (Impact factor, Quartil: 3,976, Q1).
182. Vasques, A.R., Pinto, G., Dias, M.C., Correia, C.M., Moutinho-Pereira, J.M., Vallejo, V.R., Santos, C., Keizer, J.J. 2016. Physiological response to drought in seedlings of *Pistacia lentiscus* (mastic tree). New Forests 47: 119-130. doi: 10.1007/s11056-015-9497-1, ISSN: 0169-4286. (Impact factor, Quartil: 1,342, Q2).
183. Vicente, J., Alagador, D., Guerra, C., Alonso, J., Kueffer, C., Vaz, A.S., Fernandes, R.F., Cabral, J.A., Araújo, M.B., Fernandes, R., Honrado, J. 2016. Cost-effective monitoring of biological invasions under global change: A model-based framework. Journal of Applied Ecology 53: 1317–1329. doi: 10.1111/1365-2664.12631, ISSN: 0021-8901. (Impact factor, Quartil: 5,196, Q1).
184. Vilela, A., Goncalves, B., Ribeiro, C., Fonseca, A.T., Correia, S., Fernandes, H., Ferreira, S., Bacelar, E., Silva, A.P. 2016. Study of textural, chemical, color and sensory properties of organic blueberries harvested in two distinct years: a chemometric approach. Journal of Texture Studies 47: 199-207. doi: 10.1111/jtxs.12173, ISSN: 0022-4901. (Impact factor, Quartil: 1,261, Q3).
185. Xavier, J., Majano-Majano, A. and Fernandez-Cabo, J. 2016. On the identifiability of stiffness components of clear wood from a 3D off-axes prismatic specimen: angle orientation and friction effects. European Journal of Wood and Wood Products 74: 285-290. doi: 10.1007/s00107-016-1032-3, ISSN: 0018-3768. (Impact factor, Quartil: 1,081, Q2).
186. Xing-Hong, W., Chaobin, Z., Pedro, F., Changhe, Z. 2016. Screening and characterization of *Auricularia delicata* strain for mushroom production under tropical temperature conditions to make use of rubberwood sawdust. Research Journal of Biotechnology 11: 26-37. ISSN: 2278-4535. (Impact factor, Quartil: 0,242, Q4).

3.2 Book Chapters

1. Aires, A. 2016. Conventional and Organic Farming-Does Organic Farming Benefit Plant Composition, Phenolic Diversity and Antioxidant Properties? *In* Organic Farming-A promising way of food production, Dr. Petr Konvalina (Eds.), InTech, Chapter 15, pp. 327-352, ISBN: 978-953-51-2256-2, doi: 10.5772/61367
2. Almeida, M.J., Forjaz, M.A., Almeida Aguiar, C. 2016. Construindo a Comunicação de Ciência. *In* Inovação Pedagógica no Ensino Superior: Ideias (e) Práticas, Vieira F., Silva, J.L.C., Flores, M.A., Oliveira, C.C., Ferreira, F.I., Caires, S., Sarmento, T. (Eds.), De Facto Editores, Portugal. ISBN: 9-789898- 557728, doi:
3. Almeida-Aguiar, A., Silva-Carvalho, R., Baltazar, F. 2016. Antitumor properties of honeybee plant-derived products: honey, propolis and pollen. *In* Chemistry, Biology and Potential Applications of Honeybee Plant-Derived Products, Cardoso, S.M. and Silva, A.M.S. (Eds), Bentham Science Publishers- Sharjah, UAE. Chapter 10, pp. 347-376, ISBN: 978-1-68108-238-7, doi: 10.2174/9781681082370116010 1
4. Andreani, T., Venkatesh, N., Ferreira, S.V., Silva, A.M., Souto, E.B. 2016. Emerging Technologies Polymers for Nanomedicine Applications. *In* Nanotechnology and Drug Delivery, Volume Two: Nano-Engineering Strategies and Nanomedicines against Severe Diseases, Arias, J.L. (Eds.), CRC Press, Chapter 1, pp 1-19. ISBN: 978148226271, doi: 10.1201/b19976-2

5. Andrews, J., Davison, T., Pereira, J. 2016. Dairy Farm Layout and Design: Building and Yard Design, Warm Climates. *In* Reference Module in Food Science, G. Smithers (Ed.), Elsevier-UK. ISBN: 978-0-08-100596-5, doi: 10.1016/B978-0-08-100596-5.00705-8
6. Carqueijeiro, I., Martins, V., Noronha, H., Gerós H., Sottomayor, M. 2016. Analytical and Fluorimetric Methods for the Characterization of the Transmembrane Transport of Specialized Metabolites in Plants. *In* Biotechnology of Plant Secondary Metabolism: Methods and Protocols, Methods in Molecular Biology. Neto, A.G. (Eds.), Springer Science+Business Media New York. Chapter 12, pp. 121-135, ISBN: 978-1-4939-3391-4, doi: 10.1007/978-1-4939-3393-8
7. Carvalho, A.C., Gomes, A.C., Pereira-Wilson, C., Lima, C.F. 2016. Mechanisms of Action of Curcumin on Aging: Nutritional and Pharmacological Applications. *In* Molecular Basis of Nutrition and Aging - A Volume in the Molecular Nutrition Series, Malavolta, M. and Mocchegiani, E. (Eds.), Academic Press. Chapter 35, pp. 491-511, ISBN: 978-0-12-801816-3, doi: 10.1016/B978-0-12-801816-3.00035-2
8. Costa, S., Fox-Kaemper, R., Good, R., Sentic, I. 2016. The Position of Urban Allotments Gardens within the Urban Fabric. *In* Urban Allotment Gardens in Europe, Bell, S., Fox-Kämper, R., Keshavarz, N., Benson, M., Caputo, S., Noori, S., and Voigt, A. (Eds.), Routledge, Taylors and Francis Group. Chapter 8, pp. 201-229. ISBN: 9781138921092.
9. Félix, L., Antunes, L., Campos, S., Venâncio, C., Coimbra, A.M. 2016. Recreational use of ketamine and its interaction with NMDA receptors. *In* Neuropathology of drug addictions and substance misuse, Preedy, V.R. (Eds.), Academic Press, San Diego. Chapter 62, pp. 672–680, ISBN: 978-0-12-800212-4, doi: 10.1016/B978-0-12-800212-4.00062-5
10. Joana Fangueiro; Eliana B. Souto; Amélia M. Silva. 2016. Encapsulation of Nutraceutical in novel delivery systems. *In* Nanotechnology in Food Industry. Grumezescu, A.M., (EDs.) ELSEVIER.Chapter 9, pp. 303-340, ISBN: 978-0-12-804305-9, doi: 10.1016/B978-0-12-804305-9.00009
11. Kačániová, M., Almeida-Aguiar, C. 2016. Antimicrobial activity of honeybee plant-derived products. *In* Chemistry, Biology and Potential Applications of Honeybee Plant-Derived Products, Cardoso, S.M. and Silva, A.M.S. (Eds), Bentham Science Publishers-Sharjah, UAE. Chapter 11 pp. 388-435, ISBN: 978-1-68108-238-7, doi: 10.2174/97816810823701160101
12. Lopes, D., Enes, T., Nunes, L., Lousada, J. 2016. Sequestro de carbono em floresta – reflexões metodológicas em contexto de floresta tropical. *In* Emissão de gases e sequestro de carbono em sistemas florestais, Fiedler, N., Lousada, J., F. Carmo, F. (Eds.). Alegre, Espirito Santo, CAUFES, Brasil. Capítulo 10, pp. 244-276, ISBN: 978-85-61890-79-7.
13. Mestre, P., Cordeiro, J., Serôdio, C. 2016. Indoor Localisation using Multiple Fingerprint Maps. *In* Transactions on Engineering Technologies, Sio-iong Ao, S.-I., Yang, G.-C. and Gelman, L. (Eds.), Springer Singapore, Springer Science+Business Media Singapore. pp. 459-474, ISBN: 978-981-10-1087-3, doi: 10.1007/978-981-10-1088-0
14. Moreira, H., Gabriel, R., Faria, A. 2016. O processo de menopausa e andropausa: implicações na osteoporose. *In* Ações Multiprofissionais sobre o Idoso com Osteoporose: Um Enfoque no Exercício Físico, Borba-Pinheiro, C.J., Figueiredo, N.M.A. and Dantas E.H.M. (Eds.) Yendis Editora, Ltda., São Caetano do Sul Brazil. pp. 73-96), ISBN: 978-85-447-0065-5
15. Severino, P., De Holanda, L.M., Santini, A., Reis, L.V., Souto, S.B., Souto, E.B. Silva, A.M. 2016. Advances in nanobiomaterials for oncology nanomedicine. *In* Nanobiomaterials in Cancer Therapy - Applications of Nanobiomaterials. Grumezescu, M.A. (Eds.), William Andrew Applied Science Publishing, Elsevier. Chapter 4, pp. 91-115, ISBN: 978-0-323-

42863-7. doi: 10.1016/B978-0-323-42863-7.00004-9
16. Severino, P., Fangueiro, J.F., Chaud, M.V., Cordeiro, J., Silva, A.M., Souto, E.B. 2016. Advances in nanobiomaterials for topical administrations: New galenic and cosmetic formulations. *In* Nanobiomaterials in Galenic Formulations and Cosmetics, Applications of nanomaterials, Grumezescu, A. (Eds.), William Andrew Applied Science Publishing, Elsevier. Chapter 1, pp. 1-23. ISBN: 978-0-323-42868-2, doi: 10.1016/B978-0-323-42868-2.00001-2
17. Singh, R.K., Hou, W., Franklin, G. 2016. Construction of Hypericin Gland-Specific cDNA Library via Suppression Subtractive Hybridization. *In* Protocols for In Vitro Cultures and Secondary Metabolite Analysis of Aromatic and Medicinal Plants, Second Edition, Jain, S.M. (Eds), Springer Science+Business Media New York. Chapter 22, pp. 317-334, ISBN: 978-1-4939-3330-3, doi: 10.1007/978-1-4939-3332-7_22

3.3 Books

1. Fiedler, N., Lousada, J., Carmo, F. 2016. Emissão de gases e sequestro de carbono em semas florestais. Alegre, ES, Brasil. Alegre, Espirito Santo, CAUFES, Brasil. Capítulo 10, pp. 244-276, ISBN: 978-85-61890-79-7.
2. Viana, N., Viana, H., Simões, J. 2016. Plano Empresarial para Implementação de Explorações Pecuárias. Estudo de caso em Caprinicultura. Novas Edições Académicas. 100 pp. EAN: 9783841716408, ISBN: 978-3-8417-1640-8.

The quartiles of 2016 published papers published are listed in Table 3.

Table 3. A summary of all indicators of The Research Centre

Quartile	Number of papers
Q1	92
Q2	53
Q3	30
Q4	11
Total Geral	**186**

In addition to the 186 papers in JCR Journals, the Research Centre published several other type of manuscripts, including in international journals, ISI proceedings, and international and national conference meetings as abstracts, national journals, books and chapters in books (Table 4 and Figure 2).

Table 4. Summary of all indicators of the Research Centre during 2016

Type of publication	Number
Books & Chapter in Books	19
Conference Proceedings	34
ISI Index Proceedings	6
National Journals	3
Other International Journals	5
SCI Index	186
Total	**253**

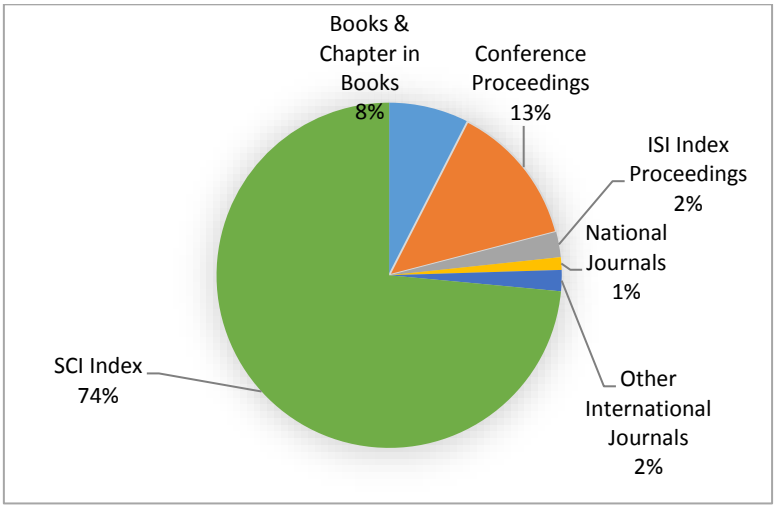


Figure 2. Percentage of each type of publication.

3.4 Patents

Three patents were submitted by CITAB researchers during 2016.

1. Borges, A. Production method of granulated fuel. Provisional national patent request N.º 109123 from 2016/02/01.
2. Fidalgo Carvalho, J.P. 'Tree seeding with a gun type method'. Provisional national patent request N.º 109289 from 2016/04/04.
3. Bezerra, R., Dias, J.A. Method for determination of enzymatic inhibition kinetics in the simultaneous presence of two inhibitors one of them being a product of the reaction. Provisional national patent request N.º 108706 de 2016/07/15 and Provisional international patent request N.º PCT/IB2016/054324 from 2016/07/20.

3.5 Masters and Doctoral theses

A total of 17 Masters and 10 Doctoral theses were completed in 2016.

3.5.1 Masters theses

1. MSc Azevedo, A.T.P. 2016. Controlo de Iluminação Pública a LED. Master in Electrical and Computing Engineering. Supervisors: Carlos Serôdio (CITAB-UTAD) and Pedro Mestre (CITAB-UTAD).
2. MSc Botelho, P.D.A. 2016. Seguimento de pessoas em ambientes interiores. Master in Electrical and Computing Engineering. Supervisors: Carlos Serôdio (CITAB-UTAD) and Pedro Mestre (CITAB-UTAD).
3. MSc Cardoso A.F.S. 2016. Empreendedorismo tecnológico em plantas – uma nova perspetiva de visita a espaços verdes das cidades. Master in Molecular Biology, Biotechnology and Plant Bio-Entrepreneurship (M3BP), Universidade do Minho. Supervisor: Ana Cunha (CITAB-UMinho) and Bruno Sousa (UMinho).
4. MSc. Chaves, A. (2016). Potencialidade do setor cinegético no concelho de Mogadouro. Master in Natural Resources Management. Universidade de Trás-os-Montes e Alto Douro. Supervisor: Aurora Monzón (CITAB-UTAD).
5. MSc Costa, B.I.G. 2016. Efeito da exposição ao cobre na indução de autofagia em brânquia de peixe-zebra, *Danio rerio.* Master in Laboratorial Clinic Biology. Universidade de Trás-os-Montes e Alto Douro. Supervisors: Sandra Mariza Monteiro (CITAB-UTAD) and Ana Rira Álvaro (CNC).
6. MSc Costa, C.S.F. 2016. Paisagem e Padrão de Locomoção: uma abordagem biomecânica. Mestrado em Ciências do Desporto: Especialização em Avaliação e Prescrição na Atividade Física. Universidade de Trás-os-Montes e Alto Douro. Supervisors: Ronaldo Gabriel (CITAB-UTAD), Helena Moreira (CITAB-UTAD).
7. MSc Diniz, E.A.C. 2016. Implementação de novos protocolos anestésicos em peixe-zebra. Master in Animal Science, Universidade de Trás-os-Montes e Alto Douro. Supervisors: Luís Marques Antunes (CITAB-UTAD), Tânia Martins (CITAB-UTAD) and Luís Félix (CITAB -UTAD).
8. MSc Gomes, A.F.B. 2016. Parâmetros Espácio-Temporais do Caminhar e Composição Corporal em Mulheres Pós-Menopáusicas. Mestrado em Gerontologia: Atividade Física no Idoso. Universidade de Trás-os-Montes e Alto Douro. Supervisors: Ronaldo Gabriel (UTAD), Helena Moreira (CITAB-UTAD).
9. MSc Gonçalves, A.J.A. 2016. A modelação dinâmico-espacial na gestão do Parque Natural da Madeira: Qual a relação da comunidade de passeriformes comuns com a qualidade ecológica dos habitats nativos? Mestrado em Gestão dos Recursos Naturais, Universidade de Trás-os-Montes e Alto Douro. Supervisor: João Alexandre Cabral (CITAB-UTAD).

10. MSc Pinto, C.A.S. 2016. Relação da glicemia em jejum com a composição corporal e os níveis de atividade física habitual de mulheres pós-menopáusicas com diabetes do tipo 2. Mestrado em Gerontologia: Atividade Física e Saúde no Idoso, Universidade de Trás-os-Montes e Alto Douro. Supervisors: Helena Moreira (CITAB-UTAD), Romeu Mendes (CITAB-UTAD).
11. MSc: Leite, A. 2016. Monitorização do impacte microclimático do aproveitamento Hidroelétrico do Baixo Sabor. Segundo ciclo em Engenharia do Ambiente, Universidade de Trás-os-Montes e Alto Douro. Supervisor: João A. Santos (CITAB-UTAD).
12. MSc Marinho, J.N.L.B. 2016. Avaliação de estuques e rebocos históricos: a Capela do Santíssimo Sacramento da Igreja de São Lourenço (Igreja dos Grilos), no Porto e a Casa do Calvário, em Amarante. Tese integrada no Mestrado em Engenharia Civil, Universidade de Trás-os-Montes e Alto Douro. Supervisors: Maria Eunice da Costa Salavessa (CITAB-UTAD), José Luís Ferreira da Silva Ramos (UMinho).
13. MSc Martins, C. J.L. 2016. Estudo numérico e experimental do comportamento à fadiga do tecido ósseo cortical sob solicitação de modo I. Master thesis in Mechanical Engineering, University of Trás-os-Montes e Alto Douro, Vila Real. Supervision: Nuno Dourado (UMinho), José Xavier (CITAB-UTAD).
14. MSc Morais, A. 2016. Monitorização da comunidade de carnívoros na Reserva da Faia Brava, análise da estrutura. Master in Natural Resources Management, Universidade de Trás-os-Montes e Alto Douro. Supervisor: Aurora Monzón (CITAB-UTAD).
15. MSc Rodrigues, M.P.D. 2016. Cidades Inteligentes: Índices como instrumento estratégico para a sustentabilidade do território. Master in Environmental Engineering. Supervisor: Edna Cabecinha (CITAB-UTAD).
16. MSc Valente, J.C.F. 2016. Deteção de Veículos para Caracterização de Tráfego Urbano. Master in Electrical and Computing Engineering. Supervisors: Carlos Serôdio (CITAB-UTAD) and Pedro Mestre (CITAB-UTAD).
17. MSc Victorino, M.A.C. 2016. Reciclagem um caminho para a educação ambiental. Master in Environmental Engineering. Supervisor: Edna Cabecinha (CITAB-UTAD).

3.5.2 Doctoral theses

1. PhD Fangueiro J.F. 2016. Cationic Lipid Nanomedicines for the treatment of Diabetic Retinopathy. PhD in Pharmaceutical Sciences, in the specialty of Pharmaceutical Technology, Faculdade de Farmácia da Universidade de Coimbra. Supervisors: Eliana Maria Souto Barbosa (FFUC) and Amélia Maria Silva (CITAB-UTAD).
2. PhD Félix, L.M.L. 2016. Towards the understanding of ketamine teratogenicity in zebrafish early development. PhD in Chemical and Biological Sciences, Universidade de Trás-os-Montes e Alto Douro. Supervisors: Ana Maria Coimbra (CITAB-UTAD) and Luís Antunes (CITAB-UTAD).

3. PhD Gouvinhas, I. 2016. Impact of genetic background, maturation and infection by Colletotrichum acutatum on the phytochemical composition of olives and olive oils: Implementation of faster infrared screening tools. PhD in Chemical and Biological Sciences. Universidade de Trás-os-Montes e Alto Douro. Supervisors: Ana Isabel Novo de Barros (CITAB-UTAD).

4. PhD Khouadja, W. 2016. Exploitation de quelques espèces aromatiques et médicinales: caractérisation des biomolécules actives et optimisation des techniques de multiplication in vitro. PhD in Biological Sciences, Faculté des Sciences de Tunis, Université de Tunis El-Manar, Tunisia. Supervisors: Aly Raies (Univ. de Tunis-El Manar), Alberto Dias (CITAB-UMinho) and Rui Oliveira (CITAB-UMinho).

5. PhD Luzio, A.C.G. 2016. Ovary apoptosis in zebrafish (Danio rerio): estrogenic regulation and role in sexual differentiation. PhD in Chemical and Biological Sciences, Universidade de Trás-os-Montes e Alto Douro. Supervisors: António Fontaínhas-Fernandes (CITAB-UTAD), Ana Maria Coimbra (CITAB-UTAD) and Eduardo Rocha (ICBAS-UP).

6. PhD Menezes, J.P. (2016) - Avaliação Integrada da Qualidade da Água de uma micro-bacia hidrográfica, com base em parâmetros fisico-químicos e biológicos. Universidade Federal de Lavras, Brazil. Supervisors: Dr. Luiz Antônio Lima (UFL) and Samantha Jane Hughes (CITAB-UTAD)

7. PhD Rocha, C.A.Q.C. 2016. Efeitos de um programa de treinamento concorrente (força e cardiovascular) sobre a autonomia funcional, a capacidade funcional, qualidade de vida e o metabolismo ósseo em idosas, PhD in Sport Sciences, Universidade de Trás-os-Montes e Alto Douro. Supervisors: Estélio Dantas (Universidade Tiradentes - Unit, Aracaju, Brasil) and Helena Moreira (CITAB-UTAD).

8. PhD Sousa R.M.O.F. 2016. Plant-Based Biopesticides: Potential of Apiaceae Essential Oils. PhD in em Sciences, University of Minho. Supervisors: Manuel Fernandes Ferreira (CITAB-UP) and Ana Cristina Cunha (CITAB-UMinho).

9. PhD Santos, S. G. 2016. Mechanisms of osmoregulatory impairment by cadmium in fish. PhD in Chemical and Biological Sciences. Universidade de Trás-os-Montes e Alto Douro. Supervisors: Jonathan Mark Wilson (CIIMAR), António Augusto Fontaínhas-Fernandes (CITAB-UTAD) and Sandra Mariza Monteiro (CITAB-UTAD).

10. PhD Sebastião, F.J.N. 2016. Multivariate techniques to dimension redution of data, comparision, aplicability and convergence. Mathematics and Statistic. Supervision: Irene Oliveira (CITAB-UTAD) and Jorge Cadima (UTL).

3.6 International projects

CITAB researchers participated in 12 international projects over 2016:

	Project	Funding
1	"Eurolegume - Enhancing of legumes growing in Europe through sustainable cropping for protein supply for food and feed". Consortium coordinator: Eduardo Rosa. Starting date: January 2014, duration: 48 months (FP7-KBBE-2013-7 – GA 613781). http://www.eurolegume.eu/	€ 742.816,34
2	"Eurodairy - A Europe-wide Thematic Network on improving resource use efficiency in dairy farming". CITAB/UTAD Coordinator: Henrique Trindade. Starting date: February 2016, duration: 36 months (H2020 - ISIB-2015-1 GA 696364). http://www.eurodairy.eu	€36.865,00
3	"SmartAgriFor- Collaboration to develop a business plan for the Centre of Agriculture and Forestry". CITAB/UTAD Coordinator: Eduardo Rosa. Starting date: June 2015, duration: 12 months (H2020 - WIDESPREAD-2014-1 GA 664599). http://www.smartagrifor.eu/	€ 69.764,51
4	"SCILIFE - Science in everyday life 2016-2017". CITAB coordinator: Ana Cunha. Starting date: May 2016, duration: 19 months (H2020-MSCA-NIGHT-2016)	€22.250,00
5	"IB Project - Production of new bioactive compounds by plants and bacteria using new and improved halogenases". CITAB coordinator: Alfredo Aires. Starting date: May 2014, duration: 36 months (Era-net CA EIB.13.008 NBCPBH)	€ 100.000,00
6	"InnoVine- Combining innovation in vineyard management and exploration of genetic diversity for a sustainable European viticulture". CITAB Coordinator: Hernâni Gerós. Starting date: January 2013, duration: 48 months (FP7-KBBE-2012-6). http://www.innovine.eu/home.html	N/A
7	"MedWildFireLab - Global Change Impacts on Wildland Fire Behaviour and Uses in Mediterranean Forest Ecosystems, towards a « wall less » Mediterranean Wildland Fire Laboratory". CITAB Coordinator: Paulo Fernandes. Starting Date: October 2014, duration 30 months (Era-net).	€ 10.000,00
8	"TurboSudoe - Development, validation and demonstration of a model based on a network of 'TRansference BrOkers' for a direct technology transference between R&D centres and companies in the SUDOE territory". CITAB	€150.358,92

	Project	Funding
	coordinator: Eduardo Rosa. Starting date: July 2016, duration: 36 months.	
9	"PAIRED - Magnetically and photochemically actuated bioactive nanowires for remotely controlled drug delivery". CITAB participant: Amélia Silva. Starting date: October 2016, duration: 36 months (ERA-NET/0004/2015)	N/A
10	"Breeding the most endangered bivalve on Earth: Margaritifera marocana". CITAB coordinator: Simone Varandas. Starting date: January 2016, duration: 3 months (ERA-NET/0004/2015)	€1.000,00
11	Temperatures, ash and soil hydrology: predicting fire impact from plant traits - Ko-Tsah-To. CITAB coordinator: Paulo Fernandes. Starting date: September 2016, duration: 24 months (H2020-MSCA-IF-2015)	N/A
12	A New Tool for Intelligent Computing: Autoadapted Aggregation Functions for Classification and Decision Making Problems. CITAB coordinator: Pedro Melo Pinto. Starting date: November 2014, duration: 36 months. Promotor: UPNa (Spain)	N/A

3.7 – National projects

CITAB researchers participated in 25 national projects over 2016:

	Project	Funding
1	INTERACT - Integrative Research in Environment, Agro-Chains and Technology. CITAB coordinator: Rui Cortes. Starting date: May 2016, duration: 36 months (ON.2 – NORTE-01-0145-FEDER-000017)	€3.508.607,48
2	RUNaway - Running away from prostate cancer: Walking through the molecular basis of physical activity. Project coordinator: Paula A. Oliveira. Starting date: July 2016, duration: 36 months (PTDC/DTP-DES/6077/2014)	€85.968,00
3	LEGSeedCOAT - Legume seed coating with beneficial microorganisms for increased productivity and resilience under climate change conditions. CITAB coordinator: Guilhermina Marques. Starting date: July 2016, duration: 36 months (PTDC/AGR-TEC/1140/2014)	€82.800,00
4	BONFIRE – gloBal-scale analysis and mOdelliNg of FIRE behaviour potential. Project coordinator: Paulo Fernandes. Starting date: July 2016, duration: 30 months (PTDC/AAG-MAA/2656/2014)	€68.859,00

	Project	Funding
5	Cherry cracking & mitigation strategies: towards their understanding using a functional metabolomic approach. Project coordinator: Berta Gonçalves. Starting date: June 2016, duration: 36 months (PTDC/AGR-PRO/7028/2014)	€164.002,00
6	FIREXTR - Prevent and prepare society for extreme fire events: the challenge of seeing the "forest" and not just the "trees". CITAB coordinator: Mário Gonzalez Pereira. Starting date: May 2016, duration: 36 months (PTDC/ATP-GEO/0462/2014)	€54.960,00
7	SOLAR - Earth System Modelling of the Eastern Atlantic Region. CITAB coordinator: João Santos. Starting date: September 2016, duration: 36 months (PTDC/GEO-MET/7078/2014)	3.120,00€
8	SPLICETHER - Application of splicing approaches to exploit alternative therapies for Lysosomal Storage Diseases: in vitro and in vivo studies. CITAB coordinator: Paula A. Oliveira. Starting date: May 2016, duration: 36 months. (PTDC/BBB-BMD/6301/2014)	€14.400,00
9	FRESHCO - Multiple implications of invasive species on Freshwater Mussel coextinction processes. CITAB coordinator: Simone Varandas. Starting date: April 2016, duration: 36 months (PTDC/AGR-FOR/1627/2014)	€19.500,00€
10	ALIEN - An integrated approach to unravel Lasiodiplodia-grapevine Interaction. CITAB coordinator: J. Moutinho Pereira. Starting date: June 2016, duration: 36 months. (PTDC/AGR-PRO/2183/2014)	€16.920,00
11	AMONIAVE - Techniques for reducing ammonia concentrations in poultry houses. CITAB coordinator: Henrique Trindade. Starting date: March 2016, duration: 32 months. (08/SI/2015). Promotor: Lusiaves	€157.714,12
12	VITINOV – Innovation in Harvesting Systems for Steep Slope Viticulture. CITAB coordinator: Eduardo Rosa. Starting date: September 2014, duration: 36 months (PRODER 52306). Promotor: Symington Vinho SA	€ 107.695,92
13	ModelVitiDouro - Prediction model for grapevine development and production in the Douro Demarcated Region. CITAB coordinator: João Santos. Starting date: June 2014, duration: 36 months (PRODER 53774). Promotors: Adegas representativas da RDD: Mesão Frio (Baixo Corgo), Favaios (Cima Corgo) e Freixo de Espada à Cinta (Douro Superior).	€ 100.130,04
14	Mais Proteína. CITAB coordinator: Eduardo Rosa. Starting date: January 2014, duration: 36 months (PRODER 52506). Promotor: Frescura Sublime Lda	€ 140.373,00
15	Gold Cherry – Improving the quality of cherry production. CITAB coordinator: Berta Gonçalves. Starting date: April 2014, duration: 22 months. Promotor: Manuel Joaquim Ferrão Aires, Unipessoal (ProDer 53626).	€ 107.919,40

	Project	Funding
16	RegCast - Fertigation in chestnut - an innovative approach to groves managing. CITAB coordinator: José Laranjo. Starting date: November 2013, duration: 36 months. Promotor: Geosil – Empreendimentos Agrosilvícolas S.A. (ProDer 47451).	€ 10.447,65
17	Ergofito - Evaluation of the impact of the use of Ergofito in chestnut. CITAB coordinator: José Laranjo. Starting date: May 2014, duration: 36 months. Promotor: AgroRioBom. (ProDer 52428).	129.265,37 €
18	Introduction of anti-hail screens in apple trees evaluation of side effects and economic impact. Mallus, Cagest, Instituto Politécnico de Bragança. CITAB coordinator: C. Correia. Starting date: April 2015, duration: 33 months. Promotors: Mallus. (ProDer PA 54824)	€ 112.946,35
19	Biobase. Thematic Networks of Information and Dissemination CITAB Coordinator: António Crespi. Starting date: March 2014, duration 24 months. Promotor: Corane (ProDer 52986)	€ 100.666,95
20	Chave In - Conceptualization, development and dissemination of an interactive system for identifying the Portuguese vascular flora, with emphasis in the North, based on an illustrated dichotomous key. CITAB Coordinator: António Crespi. Starting date: March 2014, duration 36 months (ProDer 52751)	€ 32.190,82
21	IND_CHANGE - INDicator-based modelling tools to predict landscape CHANGE and to improve the application of social-ecological research in adaptive land management. CITAB Coordinator: João Cabral. Starting date: July 2013. Duration: 36 months (PTDC/AAG-MAA/4539/2012)	€ 14.629,00
22	DEUS EX MACHINA - Symbiotic technology for societal efficiency gains. CITAB Coordinator: Pedro Melo Pinto. Starting date: January 2016. Duration: 36 months (NORTE-01-0145-FEDER-000026)	€146.340,00
23	Development of production processes and pine resin extraction to improve efficiency, rationalization and expansion of the activity. CITAB Coordinator: José Luís Lousada. Starting date: January 2015. Duration: 36 months Promotor GIFF (PRODER 57059)	€108.550,66€
24	PARRA – "Plataforma integrAda de monitoRização e avaliação da doença da flavescencia douRada na vinhA". CITAB Coordinator: Irene Oliveira. Starting date: April 2016. Duration: 36 months. Promotor: Tekever ASDS, Lda. (LISBOA-01-0247-FEDER-003447)	€25.000
25	Promotion and valuation of native forest species. CITAB Coordinator: João Carvalho. Starting date: June 2013, duration: 36 months. (Associação Nacional Conservação Natureza – QUERCUS)	N/A

3.8 – Industry contract research

During 2016, 2 major research contracts were executed with private companies:

	Designation	Contractor	Total Value
1	Baixo Sabor hydroelectric dam (AHBS) - Integrated Environmental Monitoring Program (PIMA), (PRT-2015-00715) - PGM Birdlife, MC 9; PGM Otter, MC 6; PGM Pyrenean desman, MC 7; PGM Herpetofauna, MC 10; PGM Bats, MC 5. Starting date: January 2015, duration 12 months	EDP – Gestão da Produção de Energia, S.A.	€ 175.414,00
2	Characterization of the reference ecological situation of Bestança Valley, with regard to fauna and flora. Starting date: March 2015, duration 12 months	City Hall of Cinfães	€ 40.000,00

4 List of CITAB Members in 2016

DIRECTOR
Eduardo Augusto dos Santos Rosa

VICE-DIRECTOR
Pedro José de Melo Teixeira Pinto

VICE-DIRECTOR
Rui Manuel Vítor Cortes

EXECUTIVE COMMITTEE

PRESIDENT

Samantha Jane Hughes

MEMBERS

Alfredo Augusto de Carvalho Aires

Alberto Carlos Pires Dias

Luís Filipe Sanches Fernandes

Mário Jorge Modesto Gonzalez Pereira

Pedro Miguel Mestre Alves da Silva

SUSTAINABLE AGRO-FOOD CHAINS

PRINCIPAL INVESTIGATOR

JOÃO CARLOS ANDRADE DOS SANTOS

RESEARCHERS IN THE GROUP (PH.D.)

Alexandre Fradeira Gonçalves
Alfredo Augusto de Carvalho Aires
Amélia M. L. Dias da Silva
Amin Karmali
Ana Alexandra Ribeiro Coutinho de Oliveira
Ana Alvares Ribeiro Marques de Aguiar
Ana Isabel Ramos Novo Amorim de Barros
Ana Luísa Ferreira Pinto de Moura Leite da Cunha
Ana Paula Calvão Moreira da Silva
Ana Sofia Gonçalves Santos
Anabela Afonso Fernandes Silva
Aureliano Natálio Coelho Malheiro
Berta Maria de Carvalho Gonçalves
Bruno Jorge Antunes Colaço
Carla Miranda
Carlos Alberto Antunes Viegas
Carlos Alberto e Silva Venâncio
Carlos Manuel Correia
Changhe Zhang
Cristina Maria Mendes Andrade
Dario Joaquim Simões Loureiro dos Santos
David Jerónimo Oppolzer
Domingos Manuel Mendes Lopes
Eduardo Augusto dos Santos Rosa
Eunice Luís Vieira Areal Bacelar
Francisco Manuel Pereira Peixoto
Franklin Gregory
Helder José Chaves Fraga
Henrique Manuel da Fonseca Trindade
Irene Pereira Gouvinhas
Isaura Alberta Oliveira de Castro
Ivo Vaz de Oliveira
João Carlos Andrade dos Santos
João Henrique Jorge Oliveira Negrão
João Paulo Fonseca da Costa Moura
Jorge Bernardo Lacerda de Queiroz
José Gomes Laranjo
José Luís da Silva Pereira
José Manuel Moutinho Pereira
Lia-Tânia Rosa Dinis
Luis Marques Antunes
Luís Miguel Mendes Ferreira
Luís Miguel S. R. L. Cunha
Manuel Fernandes Ferreira
Maria Cristina Seixas Martins Morais
Maria da Conceição Lopes Vieira dos Santos
Maria Eugénia dos Santos Nunes
Maria João Miranda Pires
Maria José Saavedra Môcho
Mário Manuel de Miranda Furtado Campos Cunha
Miguel António Machado Rodrigues
Nelson Filipe Lopes Machado
Patrícia do Céu Oliveira Ribeiro
Paula Alexandra Martins de Oliveira
Piebiep Goufo
Raquel Guiné
Raúl Domínguez Perles
Regina Maria Rodrigues Arantes
Sónia Alexandra de Almeida Martins
Susana Maria Gomes Caldas da Fonseca
Susana Maria Pinto de Carvalho
Tânia Sofia Cordeiro Martins
Tatiana Andreani
Valdemar Pedrosa Carnide

OTHER RESEARCHERS IN THE GROUP (PH.D.)

Alfredo Manuel Pereira Geraldes Dias
Amílcar Celta Falcão
Ramos Ferreira
Ana Cristina Bairrada Fortuna
Ana Lúcia Rebocho Lopes Pinto e Sintra
Ana Maria Araújo de Beja

Neves Nazaré Pereira
Ana Maria Marques Valentim
Ana Marta Pereira
Ana Sofia Rodrigues
Clemente Tomas Sanchez
Domingos Xavier
Filomeno Carlos Viegas
Fernanda Maria Lopes Ferreira
Fernando de Pablo Davila
Fernando Jorge Ramos
Helena Maria Vala Correia
João Paulo Baptista Carneiro
João Ramalho Santos
John Griffith Jones
Jorge Ventura Ferreira Cardoso
Luís Jesus Rivas Soriano
Manuel João Teles de Oliveira
Margarida Maria Correia Marques
Maria do Carmo Barbosa Mendes de Vasconcelos
Maria do Rosário Alves Ferreira dos Anjos
Maria Isabel de Pinho Pessoa de Amorim
Maria Isabel Mendes Guerra Marques Cortez
Maria Solange Mendonça Leite
Nuno Miguel Franco
Paula Santos
Olinda da Conceição Pinto Carnide
Paula Cristina Ribeiro Coutinho de Oliveira
Paula Maria Vieira de Melo Gomes
Paulo Jorge Gouveia Simões da Silva Oliveira
Paulo Manuel Antunes Mendes Gordo
Ruth Maria de Oliveira Pereira
Sandra Raquel de Sousa Monteiro
Teresa Maria dos Santos Pinto
Vicente de Seixas e Sousa
Xiaoying Zhang

OTHER RESEARCHERSIN THE GROUP (NON PH.D.)

Ana Cristina Pontes Carvalho
Ana Isabel de Freitas Tavares de Oliveira
Andreia M. C. Carvalho
Antonieta María Alvarado Muñoz
António José Madeira Nogueira
Helena Maria Fernandes Ferreira
Manyou Yu
Maria Elisabete Tavares da Silva Franco
Maria José Santos Cerejo Pereira Correia
Sónia Patrícia Seabra Campos
Tiago Nuno Dias e Neto

AGROBIOPLANT RESEARCHERS
RESEARCHERS IN THE GROUP (PH.D.)

Alberto Carlos Pires Dias
Ana Cristina Gomes da Cunha
Artur Jorge da Silva Conde
Cristina Maria da Silveira e Silva Pereira Wilson
Cristina Alexandra de Almeida Aguiar
Cristóvão Fernando Macedo Lima
Franklin Gregory
Henrique Luís Silva de Noronha
Hernâni Varanda Gerós
Olga Maria Fernandes Pereira Coutinho
Rui Pedro Soares de Oliveira
Viviana Maria Martins Varajão

OTHER RESEARCHERS IN THE GROUP (PH.D.)

Isabel Maria Cravo Aguiar Pinto Mina

OTHER RESEARCHERSIN THE GROUP (NON PH.D. ONLY)

Cláudia Marta Libreiro Pinho

TRAINING

Ana Cristina dos Santos Abraão
Ana Isabel Rocha Faustino
Ana Luísa da Silva Alves
Ana Sofia Freitas

André Daniel Mendes Lemos
Andreia Raquel Martins Garrido
Bruna Filipa Camilo Carbas
Carla Sofia Pereira Dias
Carlos Daniel Almeida Rochinha
Catarina Isabel Guedes Teixeira
Cátia Inês Rodrigues dos Santos
Cátia Vanessa Queijo Brito
Chenyao Yang
Ermelinda Isabel Martins da Silva
Fabrício Lopes de Macedo
Iva Prgomet
Joana Filipa Peixoto Fangueiro
João Paulo de Sousa Coutinho
Leonor Caldeira Ferreira
Luís Filipe Ribeiro da Rocha
Magda Sofia Soares de Carvalho Cardoso
Nobre Semedo
Manuela de Fátima Ferraz Machado
Márcia Raquel Gomes de Carvalho
Maria Adelaide Homem Perdigão Pito
Maria de Fátima Ponteira Carneiro
Maria Filipa Monteiro Alves de Queirós
Maria Margarida de Oliveira Mota
Marslin Gregory
Maxwell Y, Owusu-Twum
Meriem Taghouti
Miguel Pedro Antunes de Oliveira
Nikola Grcic
Richard Maykel Gonçalves Breia
Rui Miguel Gil da Costa Oliveira
Rupesh Kumar Singh
Sandra Cristina Santos do Cabo
Sandrine dos Santos Ferreira
Sara Silva Bernardo
Sara Silva Bernardo
Sara Silva Laranjeira
Sílvia do Vale Brenhas Ferreira
Sílvia Martins Afonso
Sofia Mendes Moreira Correia
Sweta Singh
Vanessa Cristina Monteiro Ferreira
Vânia Cristina Santos Sena Graça
Weina Hou

ECOINTEGRITY

PRINCIPAL INVESTIGATOR

PAULO ALEXANDRE MARTINS FERNANDES

RESEARCHERS IN THE GROUP (Ph.D.)

Ana Catarina Gonçalves Luzio
Ana Cristina Sampaio
Ana Maria Monteiro Paiva Coimbra
Andre Ribeiro da Fonseca
António Augusto Fontainhas Fernandes
António Luís Crespi
Carlos Gonçalves Rossa
Estela Maria Bastos Martins de Almeida
Felisbina Luisa Pereira Guedes Queiroga
Guilhermina Miguel da Silva Marques
Helder Filipe dos Santos Viana
João Alexandre Ferreira A. Santos Cabral
João Soares Carrola
José Albino Alves Dias
José Tadeu Marques Aranha
Laura Monteiro Torres
Leónia Nunes
Liliana Caramelo
Luís Filipe Sanches Fernandes
Luis Manuel Lourenço Felix
Malik Amraoui
Maria das Neves Mitelo Morão de Paiva Cardoso
Maria de Fátima Magalhães Gonçalves
Mário Gabriel Santiago dos Santos
Mário Jorge M. Gonzalez Pereira
Paula Maria Seixas de Oliveira Arnaldo
Paulo Alexandre Martins Fernandes
Rose Marie Oliveira Ferreira de Sousa
Rui Manuel Furtado Bezerra
Rui Manuel Vitor Cortes
Samantha Jane Hughes
Sandra Mariza Veiga Monteiro
Simone da Graça Pinto Varandas
Sofia Gabriel Garcia Santos

OTHER RESEARCHERS IN THE GROUP (Ph.D.)

António Joaquim Filipe Santos de Matos
Aurora Carmen Monzón Capapé
Carla Maria Alves Quintelas do Amaral Marinho
Carmen Hernandez Gómez
Edna Carla Janeiro Cabecinha C. Sampaio
Frederico Meireles Alves Rodrigues
João P. F. Carvalho
Luis Miguel Ferreira Pontes Martins
Maria Helena Rodrigues Moreira
Nuno Cláudio da Rocha Meses Pedro

OTHER RESEARCHERS IN THE GROUP (non Ph.D.)

Carlos Alberto Rodrigues Loureiro da Silva
Cristina Conceição Ribeiro Carlos
Diogo Filipe Teixeira Carneiro de Sousa Carvalho
Hélia Marisa do Vale Gonçalves
Joaquim José Barreira de Jesus
Luis Filipe Pires Braz
Luís Pedro Mendes Freitas
Maria da Conceição Carvalho Rodrigues
Maria Irene Fraga dos Santos
Paula Alexandra da Costa Sousa Botelho Pinto
Regina Maria Bessa Santos
Sandra Liliana Cardoso Costa Baptista

TRAINING

Ana Lúcia Pereira Pinto
Ana Rita Correia Pacheco
Ana Rita Lopes Ferreira
Ana Sofia Andrade de Faria
Anabela Cristina Nave Rodrigues
Anita Isabel Ferreira da Costa Pinto
Annalisa Bellu
Cátia Filipa Pinheiro dos Santos
Daniela Patrícia Salgado Terêncio

Darinka Costa Gonzalez
Francisco José Guedes Morinha
Joana Raquel Mendes Cação Parente
Joana Raquel Silva Vicente
Lav Sharma
Maria Inês de Almeida Páscoa
Marisa de Oliveira Lopes
Rita Coelho Bastos
Sandra Isabel Ribeiro Pereira
Teresa Raquel Duque Enes
Tiago Monteiro Henriques dos Santos
Vitor Rodrigues Pereira

BIOSYSTEMS ENGINEERING

PRINCIPAL INVESTIGATOR

JOSÉ LUÍS PENETRA CERVEIRA LOUSADA

RESEARCHERS IN THE GROUP (Ph.D.)

Carlos Afonso de Moura Teixeira
Fábio André Magalhães Pereira
Irene Cristina Salgueiro de Oliveira
João Luís Pereira
José Joaquim Lopes Morais
José Luís Penetra Cerveira Lousada
José Manuel Cardoso Xavier
Maria Isabel Ribeiro Dias
Mário Manuel Dinis Ginja
Pedro Alexandre Mogadouro do Couto
Pedro José de Melo Teixeira Pinto
Ronaldo Eugénio Calcada Dias Gabriel

OTHER RESEARCHERS IN THE GROUP (Ph.D. Only)

Amadeu Duarte da Silva Borges
António Manuel Ribeiro de Sousa
Carlos Manuel José Alves Serôdio
Cristóvão Lucas dos Santos
José Carlos Silva Cardoso
José Manuel Alves Ribeiro
Marco Paulo Duarte Naia
Maria Emilia Calvão Moreira da Silva
Maria Eunice da Costa Salavessa
Norberto Jorge Gonçalves
Nuno Manuel Lucas Vieira Lopes
Paulo Alexandre Cardoso Salgado
Pedro Miguel Mestre Alves da Silva
Valéria Reva

OTHER RESEARCHERS IN THE GROUP (non Ph.D.)

Alexandra Luísa Ribeiro Dias
Ana Paula Álvaro Santana
Carlos Filipe Campos Rompante da Cunha
João Manuel Cardoso Martins
João Paulo Coelho
Maria Sofia Rodrigues Alves Pimenta

TRAINING

Jorge Marcelo Quintas de Oliveira
Véronique Imperatriz Medeiros Gomes