AGRI Innovation summit 2017

RESOURCE USE (Adaptation and Mitigation)

Plant protection Animal health and welfare

Parallel Thematic Session

RESOURCE USE (Adaptation and Mitigation)

Plant protection / animal health and welfare

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PLANT PROTECTION/
ANIMAL HEALTH AND WELFARE

Supported by:

Start: April/2017
End: March/2021

Budget: 472.990 €

AGRI Innovation summit 2017

Operational Group:

+PrevCRP - Development of integrated strategies for the prevention of pine pitch canker.

+PrevCRP - Desenvolvimento de estratégias integradas para prevenção do Cancro-resinoso-do-pinheiro.

Practical problem

Fusarium circinatum infects several pine species at different stages of maturity, leading to: resinous cankers on woody structures; flowers and cones mortality; seedlings mortality. Its prevention is mandatory to avoid the spreading of infected seeds and seedlings through their movement

Partners

Type:	Name:
Research /Teaching	Instituto da Conservação da Natureza e das Florestas IP; Direção-Geral de Alimentação e Veterinária; Instituto Nacional de Investigação Agrária e Veterinária IP.; Instituto Superior de Agronomia; Instituto Pedro Nunes; Universidade de Trás-os-Montes e Alto Douro.
Agri Association	Centro PINUS; Associação de Produtores Florestais do Vale do Sado; Associação de Produtores Florestais do Concelho de Coruche e Limítrofes.
Agri enterprise	Viveiros do Furadouro Unipessoal Lda; Pombalverde - Produção e Comercialização de Plantas, Lda; Germiplanta- Viveiros de Plantas, Lda.; Florgénese - Produtos e Serviços para a Agricultura e Floresta, Lda; Biochem Iberica – Químicos agrícolas e industriais, Lda.

Project

Objectives:

Assess the disinfection methods' efficacy at eliminating the fungus from seeds, substrates, containers and irrigation water, as well as their impact on seeds germination and seedlings quality, to apply the best treatments at nurseries; monitor seedlings in the field during plantation's first year.

Expected results:

To establish new preventive measures, based on the disinfection methods applied at the forest plant production level, ensuring the good quality and health status of seedlings, avoiding the negative effects of *F. circinatum* presence in host species and the negative economic impact that may result. Implementation of the recommended methods in a real context integrated in the "technical itinerary".

Results so far/first lessons:

Selection of disinfectants with potential use on the production factors (seeds, substrates, containers and irrigation water) was carried out, as well as of several potential materials in order to substitute the pine bark as substrate. There aren´t specific products on the market to control *F. circinatum*, being important to focus on the prevention and adoption of innovative processes.

Who will benefit:

Forest nurseries, technicians, forest owners, Forest Producers Organizations, pine industry and government institutions.

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PLANT PROTECTION / ANIMAL HEALTH AND WELFARE

Supported by:

MIT UNTERSTÜTZUNG VON BUND, LÄNDERN UND EUROPÄISCHER UNION

LE 14-20

Start: 01/03/2016
End: 28/02/2019

Budget: 500.000 €

AGRI Innovation summit 2017

Operational Group:

Alternative methods for wireworm control in potatoes

Alternative Methoden in der Drahtwurmbekämpfung bei Kartoffeln - ARGE Drahtwurm

Practical problem

Wireworms cause major damage in potatoes, which only in Austria is estimated at several million Euros each year. As no pesticides are currently approved for control of wireworms in potato, there is a need for the development of alternative, effective and environmentally friendly control methods.

Partners

Type:	Name:
NGO	GLOBAL 2000 Umweltforschungsinstitut
Producers/farmers	Erzeugergemeinschaft Bauernerdäpfel Verkaufs GmbH; E. Rauchberger; J. Mayer; P. Votzi; K. Paul; Sauwalderdäpfel Eduard Paminger KG; Giner Kartoffel&GemüseGmbH
Advisor	InteressenGemeinschaft Erdäpfelbau
Research institutes	University of Innsbruck; Meles GmbH; Agroscope; AGES GmbH

Project

Objectives:

The aim of the project is to develop effective and environmentally friendly control methods as alternatives to the use of pesticides. Following a screen, several methods will be tested under practical field conditions in close cooperation with farmers to ensure applicability of the methods.

Expected results:

The identification of one or more alternative methods which result in satisfactory wireworm control in all major Austrian potato growing regions will be the main project result.

Additionally, results are expected about the occurrence and distribution of wireworm species, virulence of different entomopathogenic fungal strains, and field effectiveness of various control measures against wireworms.

Results so far/first lessons:

Basic information necessary for alternative control measures such as the spatial and temporal wireworm distribution, and the species-specific virulence of entomopathogenic fungal strains has been established.

Preliminary results from the field trials show that wireworms can be lured into dense wheat strips, and summer-applied entomopathogenic fungi can be found in the soil the subsequent spring.

Who will benefit:

Potato growers will be the main beneficiaries. Advisors, the scientific community and the environment will also benefit.

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PLANT PROTECTION / ANIMAL HEALTH AND WELFARE

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Operational Group:

Automated behavioural enrichment for poultry – development of an innovative system to improve animal welfare

Automatische Beschäftigungsanlage für Legehennen und Puten – Entwicklung eines innovativen und tierwohlorientierten Haltungssystems

Practical problem

As a result of stopping with beak trimming in laying hens and turkeys, injuries caused by behavioural disorders like feather pecking and cannibalism are expected. Offering manipulable material can be a promising approach to prevent the occurrence of these behavioural disorders.

Partners

Type:	Name:
Research institutes	University of Veterinary Medicine Hannover, Foundation; Institute for Animal Hygiene, Animal Welfare and Farm Animal Behaviour
Farmers organisation	Chamber of Agriculture Lower Saxony
Laying hen farmers	Richard Mardink; Habermann GbR; Holger Dohrmann; Geflügelhof Höckel GmbH&Co.KG
Turkey farmers	Geschwister Rust GbR; Norbert Schmidt
Turkey hatchery	Moorgut Kartzfehn von Kameke GmbH & Co. KG

The OG is now cooperating with the company Big Dutchman to develop the system to turkey farming.

Project

Objectives:

The aim in laying hen husbandry is an optimisation of an existing automated enrichment system. For turkey farming an innovative automated system should be developed, considering the characteristic pecking behaviour. Data collection concerning animal behaviour, animal health and economy is also an objective.

Expected results:

Providing manipulable materials should result in a decrease of behavioural disorders like feather pecking and cannibalism, which in consequence reduces injuries and improves feather condition. Therefore, the system could contribute to animal welfare.

Results so far/first lessons:

First analysis of behavioural observations show that the automatic system is accepted by laying hens. In turkeys, it seems to be more difficult to ensure a long-lasting interest in the provided material. Different approaches are in progress.

Who will benefit:

The automatic system should have benefits for both, animals and farmers.

Start: 18/05/2016
End: 15/02/2019

Budget: 802.881 €

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PLANT PROTECTION / ANIMAL HEALTH AND WELFARE

Supported by:

Start: April/2017
End: December/2020

Budget: 447.123 €

AGRI Innovation summit 2017

Operational Group:

BioPest - Integrated strategies to fight against key pests in nut species.

BioPest - Estratégias integradas de luta contra pragas-chave em espécies de frutos secos

Practical problem

Plagues that cause high damages and have difficult control. There's a quarantine plague (*D. kuriphilus*) for which there isn't technical information or chemical substances to control them. Search alternative means of struggle that allow increase productivity, quality and sustainability of cultures.

Partners

Type:	Name:
Research/ Teaching	INIAV - Instituto Nacional de Investigação Agrária e Veterinária, I.P.; Inst. Politécnico de Bragança; Inst. Politécnico de Castelo Branco; Inst. Politécnico de Viana do Castelo ; Univ. Trás-os-Montes e Alto Douro; Centro Nacional Competências dos Frutos Secos
Agri association	Associação Agro-florestal e Ambiental da Terra Fria Transmontana; Associação Florestal do Lima; Asso. Florestal Vale Douro Norte; Associação Portuguesa da Castanha; Associação Regional dos Agricultores das Terras de Montenegro
Farmer	Filipe Rodrigues Pereira
Agri enterprise	Coop. Agrícola de Alfandega da Fé CRL; Coop. Agrícola de Penela da Beira CRL; Coop. Agrícola de Produtores de Frutos de Casca Rija CRL; Coop. dos Lavradores do Centro e Norte, CRL; Coop. Souto os Cavaleiros, CRL; Agro Rio Bom, LDA; Empresa Municipal de Desenvolvimento Rural de Vinhais

Project

Objectives:

It is intended to develop a set of plague protection studies and strategies to solve the chestnut, almond and walnut phytosanitary problems, through the biological protection of conservation and the application of biological and biotechnical control methods.

Expected results:

Increase the productivity and quality;

Obtain information to support the standards of almond, walnut and chestnut integrated production;

Elaborate technical flyers for the dissemination of biological and biotechnology means;

Prepare a manual of Good Agricultural Practices;

Establish an alert network about the population plague levels and combat methods. Adopt long-term technologies.

Results so far/first lessons:

Obtaining knowledge about bioecology of the chestnut, almond and walnut tree plagues, the risk periods, the evaluation of the necessity to adopt direct measures of combat and the opportunity of the interventions.

Involvement of nuts sector partners (producers, associations, cooperatives and companies) Organization/participation in "open days" and "workshops/seminars", to sensitize the producers.

Who will benefit:

The main beneficiaries and users of the knowledge are the nut producers and the technicians of the associations.

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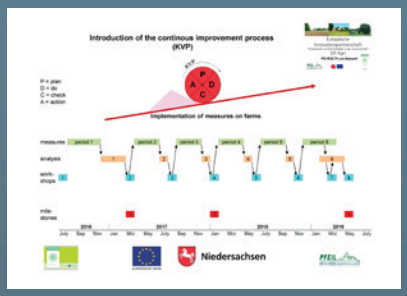

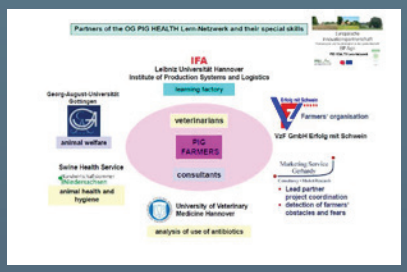

Start: 18/05/2016
End: 15/08/2019

Budget: 353 380 €

AGRI Innovation summit 2017

Operational Groups:

Development of a learning network to continuously improve health management in pig production to reduce antibiotics

Entwicklung eines LERN-Netzwerks zur Verbesserung von Gesundheitsmanagement in der Schweineproduktion zur Reduzierung des Antibiotikaeinsatzes - PIG HEALTH Lern-Netzwerk

Practical problem

The use of antibiotics has to be reduced to a minimum within the next years. Farmers have to conduct farm specific measures to improve health management. Farmers have to take into account that the use of antibiotics depends on many factors and that different factors are impacting on animal health.

Partners

Type:	Name:
Farmers organisation	VzF GmbH Erfolg mit Schwein, Uelzen
Research institutes	Department of Animal Sciences, Georg-August-Universität Göttingen; Institute of Production Systems and Logistics, Leibniz; Universität Hannover; University of Veterinary Medicine, Hannover
State organisation	Swine Health Service, Chamber of Agriculture Lower Saxony, Oldenburg
Private company	Marketing Service Gerhardy, Garbsen

Project

Objectives:

Aims are: (i) to develop a learning network to enhance the willingness to continuously improve hygiene and health management in pig production; (ii) to implement a continuous improvement process to reduce the use of antibiotics; (iii) to elaborate guidelines to transfer the results to other workgroups.

Expected results:

Based on the learning network, the hygiene and health management shall be improved on the farms and animal welfare and competitiveness will be increased. The cooperation between farmers, veterinarians, and consultants shall be strengthened to meet the challenges of economic issues, farm animal well-being, society and market.

Results so far/first lessons:

The OG partners use different specific wording which is not commonly known (e.g. biosecurity, feed-conversion) and the understanding of expressions differs (e.g. animal health, farm animal well-being). That is a challenge for networking. Launching the “continuous improvement process” made it obvious that the tasks and interests of farmers, veterinarians and consultants need to be well detected.

Who will benefit:

The project will benefit farmers, veterinarians and concerned professionals, and improve farm animal well-being.

Contact: Hubert Gerhardy
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PLANT PROTECTION / ANIMAL HEALTH AND WELFARE

Supported by:

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Start: 01/01/2016
End: 31/12/2018

Budget: 316.164 €

AGRI Innovation summit 2017

Operational Group:

Efficiency Check

Effizienz-Check: Entwicklung einer modernen und praxisgerechten Web-Applikation zur Unterstützung der Milchbauern für gezielte Maßnahmen zur Verbesserung der ökonomischen und nährstoffbezogenen Effizienz in der Milchproduktion

Practical problem

Dairy farms are very complex systems and their farmers are confronted with many different facts and figures on varying information sources. So it's very difficult to optimize their tool chains and workflows for an optimal profitability in milk production.

Partners

Type:	Name:
Farmers association	Association of Austrian Cattle Breeders (ZAR)
State organizations	Chamber of Agriculture in Upper Austria (LK OÖ); Styrian Animal Health Service (TGD Stmk.)
Private companies	LKV Austria Qualitätsmanagement GmbH; ZuchtData EDV Dienstleistungen GmbH

In addition, farmers, veterinarians and provincial recording associations are closely involved in the project.

Project

Objectives:

Define farmers needs for analysing tools.

Set up data interfaces and develop a Handy App for collecting needed information on farm.

Find ways to model the linkage between management, housing conditions, animal health and profitability.

Develop a WEB Application to visualize this linkage.

Expected results:

A WEB application to visualize the linkage between management, housing conditions, animal health and profitability. Thus, farmers will call higher attention to animal welfare and health. Only healthy cows that feel comfortable within their housing are able to use their full capability for milk production. The WEB application will be accessible for farmers and their vets and advisors, free of charge.

Results so far/first lessons:

We made workshops and a survey with farmers and staff members of provincial recording associations to collect their expectations in such a WEB application.

The modelling of effects of investments in better housing conditions and health monitoring tools on profitability of milk production is very difficult, because it depends especially on the quality of implementation.

Who will benefit:

All dairy farmers with cows under milk performance control.

Contact:Franz Steininger
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PLANT PROTECTION/ ANIMAL HEALTH AND WELFARE

Supported by:

Scottish Government Riaghaltas na h-Alba gov.scot

SRDP

The European Agricultural Fund for Rural Development: Europe investing in rural areas

Start: 01/07/2016
End: 01/06/2019

Budget: £ 81.000

AGRI Innovation summit 2017

Operational Group:

Live Lambs: Improving lamb survival and farm profitability

Practical problem

The average Scottish Less Favoured Area Upland Ewe Flock rears 143 lambs per 100 ewes. Despite advances in knowledge this figure has changed little in the last 25 years. Rearing more lambs from the same number of ewes will help farmers reduce cost of production.

Partners

Type:	Name:
Pharmaceutical company	MSD Animal Health
Feed company	Rumenco

In addition, five focus farmers are working closely with the partners, while their data and experiences are shared with a wider group of farmers for discussion and knowledge transfer.

Project

Objectives:

Reduce and benchmark lamb deaths from mating to sale with five focus farmers and a larger farmer discussion group.
Encourage condition scoring to validate ewe nutrition.
Trial DUP supplements in ewe feed to assess effect on lamb deaths.
Highlight relevant research.
Disseminate project benefits.

Expected results:

Higher lamb survival rates and increased number of lambs sold on five focus farms and wider farmer group.
Greater uptake of condition scoring to aid feed planning.
Improved animal health planning.
Increased use of high DUP feeds in late pregnancy.
Improved farmer understanding of ewe and lamb behavior.
Improved farm and industry carbon footprint.

Results so far/first lessons:

All but one of the focus farmers have recorded a reduction in lamb losses over three years. Target rearing rate is context dependent; it is important to understand the context before interpreting the results. The best performing farmer achieved 8% losses from scanning to sale and is on track to sell 175% lambs per ewe.

Who will benefit:

Farmers - increased output, Flock - improved welfare, Global community - reduced carbon emissions per unit of product.

Contact: Poppy Frater
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PLANT PROTECTION/ANIMAL HEALTH AND WELFARE

Supported by:

COMPETE 2020 PORTUGAL 2020 UNIÃO EUROPEIA Fundo Europeu de Desenvolvimento Regional

Start: January/2017
End: December/2019

Budget: 943.327 €

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Colaborative Business R&TD Projects:

PIGS+CARE – Production optimization of heavier pig carcasses by natural and zealous means without castration, aiming for new meat products without residues and high added value

PIGS+CARE - Otimização da produção de carcaças pesadas de suíno de modo natural e zeloso sem recurso à castração, visando novos produtos cárneos sem resíduos e elevado valor acrescentado

Practical problem

Surgical castration soon will be banned in European Union and occurrence of boar taint may depreciate meat. Chemical castration is an expensive alternative but not very attractive to consumers.

Partners

Type:	Name:
Agri enterprise	Cevargado, Lda.; Primor – Charcutaria, SA; ICM - Indústria de Carnes do Minho, SA
Research/ Teaching	Instituto Politécnico de Viana do Castelo - Escola Superior de Tecnologia e Gestão; Instituto Politécnico de Coimbra - Escola Superior Agrária de Coimbra

Project

Objectives:

The project aims to meet the following objectives:

-Introduce functional foods in finishing diets that ensure a substantial reduction of male odour (androstenone and skatole) in fresh and processed pork meat and ascertain the effect of processing techniques on perceiving odour and flavour.

-Introduce hygienic and animal welfare practices in pigs housing and transport to attenuate absorption and synthesis of male odour precursor compounds in fresh and processed pig meat and ascertain the effect of processing techniques on odour and flavour perception

-To set up a sensory panel specialized in the detection of androstenone and skatole in fresh and processed pork meat.

-To present a quality seal (+CARE) that demonstrates practices level of animal welfare, improve animal health and reduce the environmental impact of pig farming.

-To gain pork consumers in very demanding markets in relation to animal welfare conditions and sensitive to the assumptions under study.

Expected results:

Alternative models of pig feeding and housing that allows new meat products to be obtained without (or very reduced) odour or boar flavour, will be developed. These innovative systems of animal husbandry and transport, sponsoring greater welfare, hygiene and animal health, will guarantee a less artificial and less contaminated production chain targeting ethical consumerism demands.

Results so far/first lessons:

-Pure insulin is an expensive prebiotic but with proven good effect on boar taint. In this project we will feed pigs knowing the exact inulin content for a better understanding of other factors affecting boar taint.

-Our first results of insulin analysis show that corn is very low (0% DM) but wheat, barley and soya or rapeseed meal have contents around 5% on dry matter.

Who will benefit:

Consumers: less chemicals;

Enterprises: new products and markets

Animals: greater welfare

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PLANT PROTECTION/ANIMAL HEALTH AND WELFARE

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PRODER:

PROFRUTA - Characterization of Portuguese Propolis and Evaluation of its Potential in the Control of Plant Diseases

PROFRUTA -

Practical problem

Proliferation of plant diseases occurs due to climate changes and microbial resistance to phytopharmaceutical products. Increasing dose or variety of pesticides used may affect the plant homeostasis. Natural fungicides and bactericides could be an alternative or complement to traditional treatments.

Partners

Type:	Name:
Agri Enterprise	Beecaramulo Lda
Others Associations	COTHN-Centro Operativo e Tecnológico Hortofrutícola Nacional
Research/Teaching	Faculdade de Ciências e Tecnologia Universidade Nova de Lisboa
Research	Instituto Nacional de Investigação Agrária e Veterinária, I.P.

Project

Objectives:

Chemical and functional characterization of Portuguese propolis extracts; development of formulation appropriate for plant treatment; "In vitro" and "in vivo" evaluation of propolis fungicide and bactericide activity; sensorial and functional characterization of fruits treated with propolis.

Expected results:

Standardization of propolis extracts relatively to their fungicide action;
Development of formulations appropriate for fruit treatment and determination of inhibitory doses;
Evaluation of the effect of propolis application in the physiology, sensorial attributes and functional properties of treated fruits;
Validation of laboratory results in field tests

Results so far/first lessons:

In vitro assays showed that propolis extracts were able to inhibit the growth of *Penicillium expansum*, *Botrytis cinerea*, *Alternaria alternata*, *Colletotrichum gleosporioides*, *Stemphylium vesicarium*. Pears treated with propolis and pears treated with commercial fungicides did not show marked differences in what concerns fruit rot.

Who will benefit:

Fruit producers (alternatives for fruit protection), Propolis Producers (increasing the market for propolis)

Start: April / 2014
End: December/ 2017

Budget: 311 409 €

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PLANT PROTECTION/ANIMAL HEALTH AND WELFARE

Supported by:

Operational Group:

QUALITOMATE - the complexity of being simply RED.

QUALITOMATE - a complexidade de ser simplesmente vermelho.

Practical Problem

The RED color in the fruit's pulp is a conditioning characteristic in the processed tomato industries.
The knowledge of the correct factors and their interactions to the RED color formation is the pathway to decrease the percentage of fruits rejection.

Partners

Type:	Name:
Research/ Teaching	Centro de Competências para o Tomate Industria (CCTI); ISA-Instituto Superior de Agronomia; Instituto Politécnico de Santarém/ESA
Agri association	Centro Operativo e Tecnológico Hortofrutícola Nacional; FNOP-Federação Nacional das Organizações de Produtores de Frutas e Hortícolas
Agri enterprise	ITALAGRO- Indústria de Transf. de Prod. Alimentares, S.A.; RELCAMPO - Viveiro de Plantas Hortícolas; Sociedade Agrícola Ortigão Costa, Lda.; Sociedade Agro-pecuária do Vale da Adega, S.A.; FRUTO MAIOR, OP Hortofrutícolas Lda.; TOMATAZA S.A.

Project

Objectives:

The project aims to increase the knowledge of the external causes and its interaction with the tomato plant physiology, facilitating hypothesis to maximize the occurrence of red fruits.
The understanding of the causes will guide the sector to adopt correct practices in the pursuit of waste mitigation.

Expected results:

The project has two major branches of studies: one is related with external factors (diseases, fertilization, soil) and other linked with the plant physiology and its capacity to respond to the surrounding agri-system.
All the planned work intents to increase the knowledge about the tomato culture, focusing in the quality of the fruits and decreasing the rejections in the end of each campaign.

Results so far/first lessons:

Crop protection of processing tomato crop in Portugal has been studied since 2001 to develop IPM strategies, particularly risk assessment techniques and decision making rules.
Firstly to control usual problems (downy mildew and caterpillars) and also to study new species, *Frankliniella occidentalis*/ TSWV and more recently *Tuta absoluta*. The current consortium enables the recent working in progress.

Who will benefit:

The efficient use of resources will affect directly the agri-system's actors, producers and the industrial quality.

Start: January/2017
End: January/2021

Budget: 331.031 €

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PLANT PROTECTION / ANIMAL HEALTH AND WELFARE

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Operational Group:

UNDERCORK - Integrated management of the flathead oak borer *Coroebus undatus.*

UNDERCORK - Gestão integrada da cobrilha (Coroebus undatus) *da cortiça.*

Practical problem

The Coroebus undatus attacks the cork oak (Quercus suber L.) developing galleries in the cork tissue being a major source of cork devaluation. The extracted cork planks become unsuitable for the production of natural cork stoppers, with huge economic impact for cork producers and the cork industry.

Partners

Type:	Name:
Agri association	Unac - União da Floresta Mediterrânica
Research/Teaching	Instituto Nacional de Investigação Agrária e Veterinária IP; Instituto Superior de Agronomia; Universidade de Évora
Agri enterprise	Amorim Florestal, Sa; Companhia das Lezírias S.A. ; Herdade do Pinheiro, S.A.; Luís Filipe Bual Falcão da Luz; Sociedade Agrícola Monte da Sé Lda.

Project

Objectives:

Based on the information about the impact and spatial distribution of Coroebus undatus, the objectives are to know the mechanisms that regulate the selection of host trees, to develop methods of preventive management and control methods to reduce their population levels.

Expected results:

Risk probability models and identification of the most determinant variables for the Coroebus undatus presence. Develop new methods of detection, diagnosis, monitoring, and control (Identify native natural enemies; detection of the Coroebus undatus before the cork extraction; traps for monitoring and capture) to be used as integrated strategies to reduce the attack levels. Knowledge transfer.

Results so far/first lessons:

The analysis of the cork defects showed that the majority remained stable and at low values (<5%) since 2002. However the Coroebus undatus evidenced a tendency to grow: the mean intensity of the attacks increased to 40%. In recent years, some studies have been carried out to develop control methods (traps with pheromones) for the Coroebus undatus, but the results are still very insufficient.

Who will benefit:

Cork producers, forest associations/cooperatives, forestry technicians, cork industry and plant protection companies.

Start: September/2017
End: August/2022

Budget: 448.741 €

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www.aislisbon2017.com