


Field visits

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Group 1: Fruit orchards – pollination, fertilisation and management

 Alcobaça Fruit Station – INIAV Quinta Nova – Polo de Inovação

- › Co-organised by the [National Operating Technological and Horticultural Centre – Competence Centre](#) and [Frubaça](#)
- › Main topics: Fruit orchards – pollination, fertilisation and management

Operational Groups that will be presented

› **1.1. PoliMax: Promotion and increase in the efficiency of entomophilous pollination in apple, pear and cherry trees (2018-2021)**

In fruit production, the aim of promoting entomophilous pollination is to increase the nutritional richness and flavour of the fruit, stimulate greater resistance to fungal diseases and pests, and increase the natural conservation time during storage. In addition, this helps to create a fruit that stands out due to its economically and environmentally sustainable production method and its added value as recognised by consumers.

The project focuses on the need to promote pollination to improve production per hectare, improve the quality and conservation of fruits, and minimise the application of pesticides. In entomophilous pollination, the performance of the agents (insects) must be as precise as possible. The intra- and inter-specific ecological relationships of the insect community must be guaranteed, by promoting a network functionality that allows pollination. It is therefore essential to have habitats that meet the necessary conditions (food and protection), not only in the orchard but also in adjacent areas.

- › [PoliMax in the EIP-AGRI project database](#)
- › [PoliMax in the Portuguese CAP Network project database](#)



› **1.2. MacFertiQual: New methods of nutritional diagnosis in 'Gala' apple trees aiming at sustainability and quality (2017-2021)**

The aim of this project is to find a more balanced nutritional reference for the modern production of Alcobaça apples (Protected Geographical Indication), to develop a new apple product from the Gala cultivars, with new parameters of internal and external quality. The Operational Group tries to find a solution for the lack of information and the delay in decision making that results from the current methodology, which gives results at a very advanced stage in the cycle. New methodologies will include fast methods to be implemented by fruit growers on their farms.

- › [MacFertiQual in the EIP-AGRI project database](#)
- › [MacFertiQual in the Portuguese CAP Network project database](#)

› **1.3. OPTIMAL – Optimisation, Apple, Alcobaça (2017-2021)**

The objective of this Operational Group is to define a restricted range for planting densities that can be recommended in new 'Maçã de Alcobaça' ('Alcobaça apple') orchards, adjusted to the edapho-climatic (relating to soil and climate) conditions of the Protected Geographical Indication (PGI). The OG also wants to characterise the type of pruning that should be recommended for these orchards, to standardize a production model in the PGI region. To achieve these objectives, modern orchards with different planting densities will be selected and studied in detail, and demonstrative pruning trials will be carried out in the orchards of the farmers who are involved in this OG.

To define an orchard model that is adjusted to our conditions, it will be necessary to collect data on photosynthesis, radiation, and fruit quality parameters, and analyse their real growth compared to their potential growth. This should make the results of this project applicable to the region and not exclusively to the studied orchards, as is the case with experimental trials that are often carried out in the scope of experimentation projects.

- › [OPTIMAL in the EIP-AGRI project database](#)
- › [OPTIMAL in the Portuguese CAP Network project database](#)

› **Visit to Frubaça**

As one of the partners in the OGs MacFertiQual and OPTIMAL, Frubaça is a modern and innovative fruit and vegetable producers' cooperative. It produces, preserves, processes (fruit purees, fruit bars, juices and smoothies), packs, and sells fruit from its own farms. Frubaça has been awarded because it was the first to produce unpasteurised juice with pulp, without preservatives or sugar, using an innovative methodology.

- › [Frubaça website](#)



Group 2: Forestry – restoration of degraded areas, fertilisation

- 📍 ECOMONTADO XXI (Freixo do Meio)
- › Co-organised by [UNAC – Union of the Mediterranean Forest \(Cork and Cork Oak Competence Center\)](#)
- › Main topics: Forestry – restoration of degraded areas, fertilisation

Operational Groups that will be presented

2.1. ECOMONTADO XXI: Agroecology applied to the design of the new cork-oak forest ('Montado') (2017-2021)

In response to the loss of vitality in Montado ecosystems and the consequent loss of soil that is widespread in the cork oak areas of Alentejo, it has become necessary to apply new techniques for the natural restoration of degraded landscapes. This is done by studying the design of natural lines of run-off and water accumulation, as well as terrain-level curves, which allows artificial water routing lines (such as dams, diversion and irrigation channels) to be designed and constructed.

The result of the 'Keyline' design is a greater use of water – the same water that was previously wasted through run-off and evaporation. The aim is to combine this technique with planting shrubs and trees. This improves the structure and fertility of the soil, stimulates CO₂ sequestration, enriches the landscape, and increases the profitability of agro-silvopastoral activity in the territories.

The main objective is to establish already existing concepts of agroecology and permaculture in the cork oak forests to restore degraded areas. The aim is to integrate soil management techniques and understand biological and landscape criteria by studying and designing specific 'Keylines' for each territory. This will ensure that rainwater penetrates the soil, which will delay its evaporation, and stimulate the production of fertile land.

- › [ECOMONTADO XXI in the EIP-AGRI project database](#)
- › [ECOMONTADO XXI in the Portuguese CAP Network project database](#)

2.2. NUTRISUBER: Nutrition and fertilisation of the cork oak forest (2017-2021)

The nutrition and fertilisation of cork oak forests is considered a priority, namely the implementation of methods to diagnose nutritional deficiencies and fertilisation recommendations. The Operational Group intends to establish fertilisation recommendations for cork oak forests in Portugal, which may be improved as new experimental results are obtained.

The project has the following specific objectives: to define the fertilisation that needs to be carried out when installing new trees; to correct – before planting trees – any soil deficiencies that could harm plant development; to establish the most appropriate fertilisation for young cork oak forests, based on the results of soil and foliar analysis;



and to establish reference values for interpreting the results of the leaf analysis in adult cork oaks, to diagnose any nutritional imbalances that can be corrected through fertilisation. A technical-economic study will be prepared, to assess the cost/benefit ration of fertilising the cork oak forest. The OG also intends to prepare a cork oak 'Fertilisation Manual'.

- › [NUTRISUBER in the EIP-AGRI project database](#)
- › [NUTRISUBER in the Portuguese CAP Network project database](#)

Group 3: Cereals and horticulture – animal and human health, soil health and water management

📍 [Quinta da Cholda \(Azinhaga\), Milho Amarelo](#)

- › Co-organised by [InovMilho – National Competence Center for Maize and Sorghum Crops](#)
- › Main topics: cereals and horticulture – animal and human health, soil health and water management

Operational Groups that will be presented

3.1. QUALIMILHO – New sustainable integration strategies that guarantee quality and safety in the national corn sector (2017-2020)

Mycotoxins have caused concern in recent years, because they are associated with serious problems in animal health. It is a complex and serious problem that the agri-food sector faces, due to the high probability of occurrence, its direct effect on the quality of production and feed, and consequently on the health, productivity and safety of livestock and finally on human health.

The presence of extreme abiotic factors (thermal or water stress, hail), biotic factors (pests and diseases) and inappropriate cultural practices (incorrect sowing and harvesting dates, excessive density, inefficient disease control, etc.) that are associated with the susceptibility of varieties increase the occurrence of different mycotoxins.

QualiMilho will address the risks of pre- and post-harvest contamination and the problem of mycotoxins by implementing a system approach to define optimised strategic management.

- › [QUALIMILHO in the EIP-AGRI project database](#)
- › [QUALIMILHO in the Portuguese CAP Network project database](#)



3.2. MaisSolo (MoreSoil) (2017-2020)

The project focuses on the development and application of innovative processes, based on known techniques, alternatives to the exclusive use of plant protection products, integrating them to protect horto-industrial crops against the occurrence of soil diseases and pests.

This project is an opportunity to test and improve a set of technologies, adapting and integrating them into the technical itineraries of horticultural systems and demonstrating the advantages of their widespread use. The sustainability of these agricultural systems with high productivity and with a great impact on the country's economy requires increasing the number of crops that are present on the plot. Changing current production systems in which monoculture predominates, to a practice that includes crop rotation, cover crops and biological crop protection, to be integrated in a combined way, will be achieved through the quantification of positive externalities at the productive and economic level.

- › [MaisSolo in the EIP-AGRI project database](#)
- › [MaisSolo in the Portuguese CAP Network project database](#)

3.3. Precision irrigation (2017-2021)

Climate change is one of the threats with direct consequences on the availability of water for irrigation. As such, it is necessary to create and/or improve water storage and distribution infrastructure.

It is important to implement an integrated precision agriculture system that allows the collection of precision data necessary to understand each plot individually, and the application of water and production factors in a differentiated way (soil amendments, fertilisation, etc.). We therefore intend to develop a new service that integrates innovative monitoring technology. This service includes data integration and interpretation, as well as specialised and local technical advice to optimise results, thus allowing the producer to achieve a significant increase in production efficiency.

- › [Precision irrigation in the EIP-AGRI project database](#)
- › [Precision irrigation in the Portuguese CAP Network project database](#)



Group 4: Viticulture – nitrogen management and mechanical pruning

📍 Quinta do Gradil (Cadaval)

- › Co-organised by [ATEVA – Technical association of wine growers of Alentejo](#)
- › Main topics: Viticulture – nitrogen management and mechanical pruning

Operational Groups that will be presented

4.1. NEP – Production of crops with high nitrogen use efficiency for better water management (2017-2020)

The aim is to develop two new low-nitrogen agricultural products – tomato for industry and grape for wine production – which do not currently exist in national and international markets. A second aim is the development of new production processes to obtain these new products and to condition the behaviour of agricultural operators in order to mitigate nitrogen (N) losses to their ecosystems.

- › [NEP in the EIP-AGRI project database](#)
- › [NEP in the Portuguese CAP Network project database](#)

4.2. IntenSusVITI – Sustainable intensification of wine growing through mechanical pruning (2017-2021)

The aim of this initiative is to contribute to the sustainable intensification of wine growing in Portugal, through technological innovation that is focused on mechanising the pruning of vineyards and increasing organic matter content of the soil ('small Ecological Footprint and Zero Carbon'). This reduction of the Ecological Footprint will come from an increase in vineyard productivity and in carbon sequestration in the soil, and from a reduction in emissions, resulting from a reduced use of phytopharmaceuticals and a reduction in the volume of materials that are used in the vineyard. At the same time, this will achieve an increase in productivity and a reduction in production costs, while maintaining quality.

Demonstration / experimentation activities on the mechanisation of pruning of vineyards will be developed in a multidisciplinary approach to optimise grape production and the quality of wine, using precision viticulture.

- › [IntenSusVITI in the EIP-AGRI project database](#)
- › [IntenSusVITI in the Portuguese CAP Network project database](#)

