



CORE Organic Plus

European transnational organic research

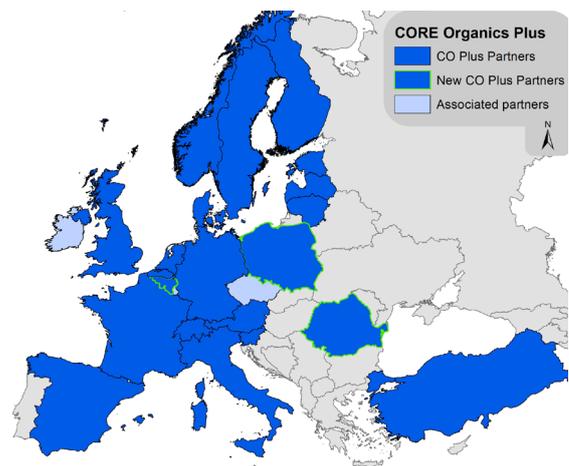
Joining forces to improve sustainable development in food production

Just as birds of passage can gain up to 70 percent of energy in coordinating their efforts by flying in formation, research programmes can profit from transnational coordination.

CORE Organic Plus is a European transnational research cooperation network supported by the European Commission consisting of 24 partners from 21 European countries/regions. The partners collaborate on funding transnational research projects with cofunding from the European Commission.

CORE Organic has existed since 2003 and has launched 5 transnational calls. The funding bodies plan to continue the collaboration with regular calls. The next call is expected at the end of 2016.

This leaflet presents the 11 running research projects initiated in 2015 within the thematic research areas: Plant/soil interaction, livestock production, functional biodiversity and food processing.



24 partners from 21 European countries/regions

Denmark (ICROFS coordinator), Germany (BLE deputy coordinator), Austria, Belgium (Flanders and Wallonia), Estonia, Finland, France, Italy, Latvia, Lithuania, Norway, Poland, Romania, Slovenia, Spain, Sweden, Switzerland, The Netherlands, Turkey and United Kingdom.

Four thematic research areas

The 11 projects are structured around the following four thematic research areas:

1: Crop: Plant/Soil interaction in organic crop production

Sustainable agricultural production with an emphasis on self-sustaining biological systems and minimal external inputs. Multidisciplinary research at field and farm level to understand the influence of soil processes on the healthy development of plants and the control of weeds, diseases and pests. The relationships between plant, soil and microbiota and how these impact on plant nutrition and health. The projects within this area are: SoilVeg, FertilCrop and ReSolVe.

2: Functional biodiversity to improve management of diseases, weeds and pests

Functional biodiversity in horticulture, greenhouse crops and perennials to increase the performance of natural enemies. Resilient agro ecosystems that are both economically viable and maximise the use of ecologically-based solutions to reduce pests, diseases and weeds in agriculture and enhance resilience of the system as far as possible by efficient biological and ecological control. The projects within this area are: ECOORCHARD and PRODIVA.

3: Livestock health management system including breeding

Health and welfare in organic livestock production also in respect of combining farm management and genetic improvement. Optimized feeding schemes in dairy production to be identified while reducing the use of concentrate. Management and breeding strategies for energy balance through e.g. lactation which focus on a steady metabolism and animal health to be developed. The projects within this area are: ORGANICDAIRYHEALTH, PROPara and 2-ORG-COWS.

4: Ensuring quality and safety of organic food along the processing chain

Maintaining an extended shelf life for organic food processors. Specific principles and methods of processing to be defined and standards to be elaborated. Tools to be developed and made available to assess quality characteristics for organic food processing and to align the processing of organic food, while minimizing environmental impact and safeguarding food quality. The projects within this area are: EcoBerries, FaVOR-DeNonDe and SusOrganic.

SoilVeg: Improving soil conservation and resource use in organic cropping systems for vegetable production through introduction and management of Agro-ecological Service Crops

SoilVeg studies alternative management of agro-ecological service crops to sustain organic vegetable production and promote the quality of the environment. The main challenge of the project will be to test the hypothesis that, compared with the incorporation of ASC into the soil as green manure, the use of the roller crimper reduces nutrient losses from the soil/plant system and GHG soil emission.

FertilCrop: How to build additional soil fertility in organic cropping systems

FertilCrop aims at improving soil fertility using synergies provided by improved crop management techniques. FertilCrop evaluates farming systems that efficiently build soil fertility based on field trials and farm networks in 13 European countries. FertilCrop focuses on the interactions of crops with: the accompanying vegetation; soil organisms that build soil structure; and microorganisms that indicate soil fertility and drive the nutrient dynamics. Improved systems will be tested with: modeling tools to predict crop growth; and farm prototyping exercises. The project will also develop field tests for farmers to evaluate soil quality.

ReSolVe: Restoring optimal soil fertility in degraded areas within organic vineyards

The aim of the project is to identify management measures which can significantly improve organic vineyard production in terms of physical, chemical and biological soil quality, plant health, growth and performance and grape yield and quality. The project wants to test the effects of three typologies of organic agro-techniques, such as compost addition, green manure and dry mulching with cover crops. They will be tested in viticultural areas that have lost their fertility in Italy, France, Spain, Turkey, Slovenia and Sweden.

ECOORCHARD: Pest management in organic apple orchards

The aim of the project is to reduce pest damage and pesticide use by increasing on farm functional (agro)-biodiversity (FAB). The project searches for techniques, tools and monitoring protocols that improves management of functional biodiversity, which consistently enhance the performance of natural enemies, reduce pest pressure and are adapted for farmers' implementation.

It will assess promising techniques, namely specific flora introduction to provide and optimize supplementary alternative food/prey for natural enemies. It is an ambition to create a European-wide network of stakeholders for collecting, sharing and improving scientific and practical knowledge and experience in functional biodiversity management for resilient organic orchards.



PRODIVA: Diversify your cropping system for better weed management

The project seeks to produce guidelines for the application of crop diversification measures that will improve the management of weeds. Relevant data from previous and running crop rotation experiments are extracted and analyzed. The suppressive ability of cover crops against weeds will be quantified and different crop species mixtures and their relevance for weed suppression are experimentally studied. Similarly, variety mixtures of oat and spring barley varieties, are studied in field experiments in three countries. 200 fields with spring barley will be surveyed during two growing seasons to identify any associations between cropping system diversity and weed flora. A database with information from the surveyed fields will be established.

ORGANICDAIRYHEALTH: Improving animal health and welfare in organic cattle milk production through breeding and management

The project will improve dairy health in organic dairy production through a combined improvement of management and breeding. Mastitis and metabolic diseases are major challenges in pasture based systems. Local/native breeds produce less milk than modern breeds, but they may be better adapted to local, especially organic, conditions where farmers are more strongly depending on local fodder resources. But very little is known about health status, medicine use and phenotypic functional characteristics of local/native breeds in organic dairy production in Europe. Genomic selection and crossbreeding of local/native and commercial breeds are investigated for future organic dairy cow breeding. Risk factors for stress and udder infections will be identified and systematic use of drying off quarters with mild mastitis will be analysed. Efficient preventive and handling strategies will be developed, and pasture based feeding strategies is developed for reducing metabolic disease and mastitis risks.

PROPara: Evaluation of practices for parasite control in organic ruminant systems

Parasitism is a major challenge to the health and welfare of organic livestock. The project will evaluate available means to monitor and control endoparasites through a series of farm-based parasitological and socio-economical studies under organic conditions. The project will assess existing knowledge from research, development and benchmarking studies on parasite control, with on-farm trials. Novel data on disease prevalence will be associated with risk factors and control measures. User friendly decision support tools will be developed, refined and evaluated. The project will perform cost-benefit analysis on control measures available for organic ruminants and develop and deliver technical innovation to facilitate deployment of sustainable parasite control strategies.

2-ORG-COWS: Improving health in native dual-purpose cattle

The one-sided genetic selection, favouring increased milk yield, complicates feeding and management of modern Holstein genetics when confronted with the strict rules defined for organic milk production. This requires a reformulation of existing dairy cattle breeding goals, or the utilization of alternative and locally adapted breeds. The project will make an evaluation of novel functional traits and associated environmental descriptors for the implementation of organic breeding strategies of local dual-purpose cattle kept in organic production systems. An overall organic breeding index for the improvement of health, product quality, fertility, longevity and welfare of dual-purpose cattle kept in pasture based production systems is produced and thus provide helpful "breeding tools" for farmers.

EcoBerries: Profitable value chains for organic berry products

The expected outcome of the project is improved sustainable and profitable value chains for organic berry production meeting the growing demand for increased availability of safe and healthy berry products produced with respect to quality and environmental impact. The project will identify processing solutions to enhance the safety and overall quality and nutritional value of organic berries and products, it will adapt traditional processing methods to organic requirements, use innovative packaging technologies and develop new sustainable processing schemes.

FaVOR-DeNonDe: Drying, Juices and Jams of Organic Fruit and Vegetables: What happens to Desired and Non-Desired compounds

FaVOR-DeNonDe will contribute significantly to new knowledge about the balance between desired and non-desired components in selected fruits and vegetables as well as how different processing techniques appropriate for organic production affect specific quality traits of fruits and vegetables. Specifically, how the impact of organic and innovative processing techniques will influence: 1: the sensory properties and the acceptance of the products 2: the presence of antioxidant compounds 3: the presence of allergens and 4: the presence of mycotoxins.

SusOrganic: Increasing sustainability and quality of organic produce

SusOrganic will develop technical solutions, standard operation procedures and guidelines leading to increased product quality that is reliably achieved whilst reducing resource consumption. Organic food is expected to be of high quality and produced sustainably regardless of its degree of processing. However, there is a lack of guidelines both for food processing conditions for organic raw materials, and for the environmental footprint of the product. The project aims to develop quality standards and processing guidelines and optimised processes for higher product quality and energy efficiency. Environmental impact (LCA) and economic (LCCA) analysis will be made. Tests (drying/cooling) using the process settings commonly used will be carried out in order to optimize the process settings. Development of on-line non-invasive systems based on optical properties of food matrices will be made and a sound database established.



The CORE Organic Board

Participating organisations

The consortium consists of 24 partners:

Austria:

Federal Ministry of Agriculture, Forestry, Environment and Water Management (BMLFUW)

Belgium:

Department of Agriculture and Fisheries, Flanders Dep. LV)

Walloon Agricultural Research Centre (CRA-W)

Denmark:

International Centre for Research in Organic Food Systems, Aarhus Universitet (ICROFS)

Ministry of Food Agriculture and Fisheries, Danish AgriFish Agency

Estonia:

Ministry of Agriculture (PMin)

Finland:

Ministry of Agriculture and Forestry (MMM)

France:

French Ministry of Agriculture, Food and Fisheries (MAAF)

National Institute for Agricultural Research (INRA)

Germany:

Federal Agency of Agriculture and Food (BLE)

Federal Ministry of Food and Agriculture (BMEL)

Italy:

Ministero delle Politiche Agricole, Alimentari e Forestali (MIPAAF)

Latvia:

Latvian State Institute of Agrarian Economics (LSIAE)

Lithuania:

Ministry of Agriculture (ZUM)

Netherlands:

Ministry of Economic Affairs (MinEZ)

Norway:

The Research Council of Norway (RCN)

Poland:

The National Centre for Research and Development (NCBR)

Romania:

The Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI)

Slovenia:

Ministry of Agriculture and the Environment (MAE)

Spain:

National Institute for Agriculture and Food Research and Technology (INIA)

Sweden:

Swedish Research Council for Environment, Agricultural Science and Spatial Planning (Formas)

Switzerland:

Federal Office for Agriculture (FOAG)

Turkey:

Ministry of Food, Agriculture and Livestock (GDAR)

United Kingdom:

The Department for Environment, Food and Rural Affairs (DEFRA)

Observer: TP Organics. Institutions actively contributing to work within the project: FiBL, CH; ILVO, BE; Bionext, NL; Organic England, UK; IFOAM EU