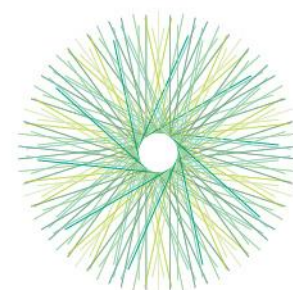


# Press article

## Soil health

APRIL 2022



eip-agri  
AGRICULTURE & INNOVATION

## Press article

### Improving soil biodiversity to reduce inputs

#### Sustainable soil management practices to reduce the use of inputs and increase crop productivity and quality

**The cultivation of vegetables in the south of Spain is threatened by low availability of nutrients in the soil as soil biodiversity has been affected by years of intensive agriculture. One of the case studies from the Horizon 2020 project SoildiverAgro is testing sustainable management practices for potatoes, including the application of commercial products based on micro-organisms, to reduce soil-borne diseases and pests and increase nutrient availability.**

The SoildiverAgro project aims to develop sustainable soil management practices which can be used across Europe. 15 case studies focus on some of the most important agricultural crops. One of them focuses on the potato (conventional farming). Potatoes are one of the most consumed foods in the world, alongside rice and wheat. Potato production in Spain has increased in recent years, but it faces challenges related to diseases present in the soil and the continuous need to apply external inputs to guarantee yield and quality.

Irene Ollio, researcher from the project explains: "We want to introduce sustainable management techniques which increase soil nutrient availability and soil water retention capacity, with the aim of reducing the occurrence of soil-borne diseases and pests. At the same time, this would reduce environmental impacts and input costs, and it would improve the quality of the potato crop."

For this purpose, the Technical University of Cartagena applies a range of management techniques that are applied on an experimental farm and will be monitored and analysed over 3 years. Farmers from the area are involved to advise the university researchers on the experiments.

The potatoes were planted in December 2020 and the experiments will last until 2023. Irene: "The crops are being cultivated under the conventional farming conditions typical for our region meaning ploughing, initial fertilisation (sheep manure), fertigation, application of pesticides and use of weed control measures." However, there are 4 plots and within each one, different management techniques are being applied. The first is a standard fertilisation application for the area, the second is a reduction of 30% of this standard fertilisation, the third also has a reduction of 30% fertilisation plus the application of two commercial products based on the use of beneficial micro-organisms.

Plant growth promoting bacteria and mycorrhizae are micro-organisms which can support plants in many ways: fixing atmospheric nitrogen, solubilising minerals such as phosphorus and potassium, regulating nutritional balance, improving growth, protecting against the effects of phytopathogens. Therefore they can be used instead of chemical fertilisers and pesticides.

For each harvest, the potatoes will be analysed in terms of yield, quality of the tubers (firmness, density, starch content, weight and size) and the incidence of pests and diseases. The data is analysed and compared and conclusions will be drawn about the optimal practices. They have analysed the data from the first harvest in June 2021, preliminary results show that reduction in fertilisation did not affect crop yield or other quality parameters, and a reduction in pests and diseases was observed in the two treatments with application of the micro-organism formulations.

Irene concludes: "We still have a lot of data to analyse for the second and third years of crop cycles."

## Background information

This case study is Case Study 1 is one of 15 in the SoildiverAgro project. The case studies are spread across Europe and working on different agricultural sectors and issues. The Case Studies will all share and compare results to create a complete set of management practices and cropping systems that enhance soil genetic and functional biodiversity to reduce the use of external inputs while increasing crop production and quality, the delivery of ecosystem services and contributing to EU agricultural stability and resilience.

### Contact information

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- [SoildiverAgro Case Study 1](#)
- [SoildiverAgro project](#)

### EIP-AGRI contact

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### Project photos

Click on the pictures to download the high resolution versions. The pictures are free for use, please mention the copyright SoildiverAgro.



Irene Ollio, researcher from the project: "The crops are being cultivated under the conventional farming conditions typical for our region meaning ploughing, initial fertilisation (sheep manure), fertigation, application of pesticides and use of weed control measures. However, there are 4 plots and within each one, different management techniques are being applied."  
Copyright: SoildiverAGro



### More information on soil health

The EIP-AGRI Support Facility published in April 2022 a **thematic newsletter** focusing on soil health. It includes inspirational ideas, EIP-AGRI Support facility activities, relevant EIP-AGRI network activities, such as publications, events, projects and funding opportunities. This newsletter is available in [English](#), [French](#) and [German](#).

## EIP-AGRI activities

### EIP-AGRI networking activities on soil health

- On 8-9 June 2022, the [EIP-AGRI brokerage event 'Get involved in the EU Mission: A soil Deal for Europe'](#) will take place. During this event participants will receive further information on the EU Mission work programme 2022 and its call and topics. Participants will have the opportunity to meet potential partners to apply for a call.
- On 13-14 April 2021, the European Commission, Directorate-General for Agriculture and Rural Development, and the EIP-AGRI Service Point organised the online **EIP-AGRI seminar: 'Healthy soils for Europe: sustainable management through knowledge and practice'**. This interactive event was dedicated to exchanging practical solutions to soil health problems, and discussing what needs to be done for farms to take them up. Find all presentations, videorecordings of the presentations and background information at the event webpage. The seminar included many examples of member states.
- The **EIP-AGRI Workshop: 'Shaping the EU mission 'Caring for soil is caring for life''** took place online on 20-21 October 2020. This workshop was organised by the European Commission's Directorate-General for Agriculture and Rural Development and the EIP-AGRI Service Point.
- **EIP-AGRI Focus Groups:**
  - [Fertiliser efficiency - Focus on horticulture in open field](#)
  - [Grazing for Carbon](#)
  - [IPM practices for soil-borne diseases suppression in vegetables and arable crops](#)
  - [Moving from source to sink in arable farming](#)
  - [Nutrient recycling](#)
  - [Protecting agricultural soils from contamination](#)
  - [Soil organic matter content in Mediterranean regions](#)
  - [Soil salinisation](#)
  - [Digital tools for sustainable nutrient management](#)
  - ...

### EIP-AGRI publications

- [Agrinnovation magazine - Issue n° 7 - September 2020 – Focus on soils](#)
- [EIP-AGRI Brochure Soil organic matter matters](#)
- [EIP-AGRI Brochure Climate-smart agriculture: Solutions for resilient farming and forestry](#)
- [EIP-AGRI Brochure Sustainable and resilient farming: Inspiration from agro-ecology](#)
- [EIP-AGRI brochure Sustainable livestock farming](#)
- [AGRI challenge video: reducing the plastic footprint of agriculture](#)
- [Animated video: New ways to deal with soil salinisation in farming](#)
- [AGRI challenge video: protecting soils from contamination](#)
- [AGRI challenge video: soil fertility through carbon storage](#)

#### Soil health in the EIP-AGRI spotlight

- The [Soil health webpage](#) gives you access to important information, results from EIP-AGRI activities, publications, valuable resources and more. The webpage includes **more than 30 inspirational ideas from EU countries** working soil health.
- An [EIP-AGRI Youtube channel playlist](#) collects many soil-health related videos from EIP-AGRI network members.
- The [thematic newsletter focusing on soil health](#) from April 2022, includes inspirational ideas, EIP-AGRI Support facility activities, relevant EIP-AGRI network activities, such as publications, events, projects and funding opportunities. This newsletter is available in [English](#), [French](#) and [German](#).

## EIP-AGRI projects on soil health

### Operational Groups

**350 Operational Groups working on soil**, are available in the EIP-AGRI operational Groups database (update April 2022)

- **Austria:** 8
- **Belgium:** 3
- **Bulgaria:** 1
- **Croatia:** 2
- **Finland:** 2
- **France:** 32
- **Germany:** 37
- **Hungary:** 10
- **Ireland:** 13
- **Italy:** 79
- **Latvia:** 2
- **Lithuania:** 4
- **The Netherlands:** 71
- **Portugal:** 12
- **Slovenia:** 10
- **Spain:** 55
- **Sweden:** 2
- **UK:** 7

### Horizon 2020 multi-actor projects

- **iSQAPER** - Interactive Soil Quality Assessment in Europe and China for Agricultural Productivity and Environmental Resilience: [website](#) - [CORDIS](#) (05/2015-04/2020)
- **LANDMARK** - LAND Management: Assessment, Research, Knowledge base: [website](#) - [CORDIS](#) (05/2015-10/2019)
- **SOILCARE** - Soil Care for profitable and sustainable crop production in Europe: [website](#) - [CORDIS](#) (03/2016-02/2021)
- **Diverfarming** - Crop diversification and low-input farming across Europe: from practitioners engagement and ecosystems services to increased revenues and chain organisation: [website](#) - [CORDIS](#) (05/2017-04/2022)
- **DiverIMPACTS** - Diversification through Rotation, Intercropping, Multiple cropping, Promoted with Actors and value-Chains Towards Sustainability: [website](#) - [CORDIS](#) (06/2017-05/2022)
- **FAirWAY** - Farm systems that produce good Water quality for drinking water supplies: [website](#) - [CORDIS](#) (06/2017-05/2021)
- **WATERPROTECT** - Innovative tools enabling drinking WATER PROTECTION in rural and urban environments: [website](#) - [CORDIS](#) (06/2017-05/2020)
- **EXCALIBUR** - Exploiting the multifunctional potential of belowground biodiversity in horticultural farming: [website](#) - [CORDIS](#) (06/2019-05/2024)
- **SoildiverAgro** - Soil biodiversity enhancement in European agroecosystems to promote their stability and resilience by external inputs reduction and crop performance increase: [website](#) - [CORDIS](#) (06/2019-05/2024)

### Horizon 2020 Thematic Networks

- **BEST4SOIL** - Boosting 4 BEST practices for SOIL health in Europe: [website](#) - [CORDIS](#) (Thematic network – 10/2018-09/2021)

## EU Mission: a Soil Deal for Europe

Soils are a scarce, non-renewable resource. It takes hundreds of years to generate a centimeter of topsoil which can be destroyed in couple of years or less. Soils are the basis for nutritious and safe food but they also deliver vital and interconnected ecosystem functions such as water regulation, hosting biodiversity, nutrient cycling, climate mitigation and adaptation benefits, supporting landscapes and cultural aspects of life.

Achieving our **Green Deal** targets on climate, biodiversity, sustainability of food systems and zero pollution heavily depend on healthy soils. However, 60-70% of all soils in Europe are unhealthy due to poor management practices, pollution, climate change and urbanisation.

[Read more](#)

## Innovation & knowledge exchange | EIP-AGRI

The European Innovation Partnership 'Agricultural Productivity and Sustainability' (EIP-AGRI) has been launched in 2013 by the European Commission in a bid to promote rapid modernisation of the sectors concerned, by stepping up innovation efforts. The EIP-AGRI aims to foster innovation in the agricultural and forestry sectors and in rural areas by bringing research and practice closer together – in research and innovation projects as well as via the EIP-AGRI network. Also grassroots ideas from farmers get developed into innovations through the so-called Operational Group innovation projects. The EIP-AGRI aims to streamline, simplify and better coordinate existing instruments and initiatives, and complement them with actions where necessary. More information at the '[About section](#)' of the EIP-AGRI website.

## EIP-AGRI Operational Groups

- 98 Rural Development Programmes provide support to innovative EIP Operational Group projects \*
- Over 3200 Operational Groups are planned to be established under the approved RDPs (2014 – 2020)
- More than 2200 Operational Groups projects have been selected for funding and are currently ongoing (or already finished)\*. Member States will still start more Operational Group projects which may run until 2025 (under current transitional rules for EU rural development programmes). [Find information on all of them in the EIP-AGRI database.](#)

\* Information officially submitted to the European Commission by RDP Managing Authorities (November 2020)

EIP-AGRI Operational Groups **are groups of people who work together in an innovation project funded by Rural Development Programmes (RDPs)**. They bring together partners with complementary knowledge. The composition of the group will vary according to the theme and specific objectives of each project. Farmers, advisors, scientists, businesses or other relevant partners work together to find practical solutions for specific problems or opportunities for European farmers and foresters. Farmers and foresters need to cooperate throughout the project to ensure that the innovative solutions are practical and likely to be quickly applied in the field. Read the [basic principles](#). [Innovation support services](#) (including advisors with a focus on innovation), and in particular innovation brokering, can therefore play a crucial role in getting worthwhile projects off the ground by facilitating contacts.

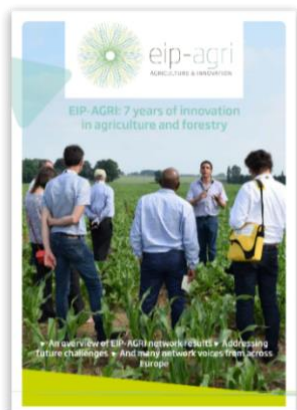
Check out the section on the EIP-AGRI website dedicated to '[Operational Groups](#)', including:

- more than 2200 Operational Groups available in the database
- detailed information on how to set up Operational Groups, on supporting networks and relevant EIP-AGRI seminars and workshops
- links to results and contact details of ongoing Operational Groups in the [EIP-AGRI database](#)
- a [list of all RDP Managing Authorities](#)

## EIP-AGRI, 7 years of innovation



The enthusiasm of the EIP-AGRI network members is essential to the success of the EIP-AGRI, and in ensuring that everyone can benefit. [Watch this EIP-AGRI video](#) to hear researchers, farmers, advisors, Managing Authorities and National Rural Networks explain how the EIP-AGRI has helped them over the past 7 years.



Since 2013, the EIP-AGRI has been promoting interactive innovation to make EU agriculture and forestry more sustainable, productive, and fit for the future. This report shows how the EIP-AGRI network has grown into a thriving network. [Read the report](#)