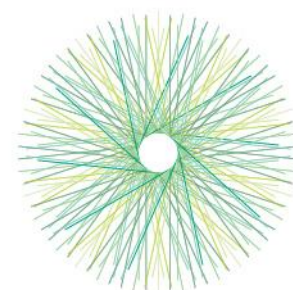


Press article

Carbon storage

AUGUST 2018



eip-agri
AGRICULTURE & INNOVATION

Press article long article

Looking after the soil to bring life and carbon back

Benefits for the farmer, the environment, the climate, biodiversity and the soil itself

Alfred Grand is an organic arable farmer near Tulln, Austria. Minimising tillage and using a rotational cropping system on his 90 ha farm is what he swears by to increase organic matter in his soil. He is part of the Austrian Operational Group BIOBO.

Since 1998 Alfred has reduced tillage and when he converted to organic farming in 2006, he stopped using fertilisers completely. His approach since then has been to look after his soil as a priority, in order to ensure healthy and productive crops, whilst storing carbon in the soil. Alfred: "If I want the soil to work for me, I have to provide the environment and the tools so that my soil can fulfil all its functions. This means I have to reduce tillage, seed cover crops as early as possible and implement a good crop rotation".

In the Operational Group (OG) BIOBO, a number of practices are tested on farms in different regions. Alfred is one of the 6 organic farmers involved. This OG focusses on improving yield and developing humus in the soil through reduced soil cultivation and organic fertilisation (green manure and organic fertiliser). BIOBO will gain new insights into alternative procedures in arable farming on the topic of soil fertility which could be useful for both organic and conventional farms.

The practice of minimising tillage is one of the main management practices that Alfred uses to stop the decline of organic matter in soils and regenerate soil health. He also takes crop rotation into account, integrating crops that contribute to the soil biomass such as alfalfa (lucerne). Alfred is constantly looking for ways to improve his practices and recently he discovered the "roller-crimper" method developed by Rodale Institute (USA). "I am always looking for new ways to improve my results, sometimes my colleges think I am crazy" says Alfred. In this new method, in Autumn a cover crop mixture is sown and then in Spring when the cover crop is flowering, it is rolled and crimped. During rolling, a cash crop, Alfred used soybean, is seeded directly into the mulch. The timing of the rolling and crimping has to be just right, Alfred explains "I learned this the hard way, if it's done too early the plant will start to regrow, if done too late, it will result in seeds falling into the soil and creating a weed problem for next years' crop". By using this method with the correct timing, annual weeds are suppressed, the soil stays moist, biodiversity is supported, erosion is prevented, and carbon sequestration is promoted. The improved soil structure also results in a higher water infiltration rate.

Alfred compared 2 fields last year within the BIOBO project, one with his standard method and one using the roller-crimper method: "Looking at the results, the roller-crimper yield was 600kg lower than the standard method, but the weed control in the roller-crimper field was zero." Economic analysis shows that the savings on weed control compensated for the lower yield "I benefit as a farmer, but so does the environment, the climate, biodiversity and the soil itself!"

Press article short article

Looking after the soil to bring life and carbon back

Benefits for the farmer, the environment, the climate, biodiversity and the soil itself

Alfred Grand is an organic arable farmer near Tulln, Austria. Since 1998 Alfred has reduced tillage and in 2006 he stopped using fertilisers. His priority since then has to been to look after his soil in order to ensure healthy and productive crops, whilst storing carbon in the soil. Alfred: "If I want the soil to work for me, I have to provide the environment and the tools so that my soil can fulfil all its functions."

Alfred is one of the 6 organic farmers involved in Operational Group (OG) BIOBO. This OG focusses on improving yield and developing humus in the soil through reduced soil cultivation and organic fertilisation (green manure and organic fertiliser).

One of the practices is minimising tillage to stop the decline of organic matter in soils and regenerate soil health. Another is crop rotation integrating crops which contribute to the soil biomass such as alfalfa (lucerne). Alfred recently discovered the "roller-crimper" method developed by Rodale Institute (USA) in which a cover crop mixture is sown in Autumn and then in Spring it is rolled and crimped. During rolling, a cash crop, Alfred used soybean, is seeded directly into the mulch. Alfred compared 2 fields within the BIOBO project "The roller-crimper field's yield was 600kg lower than the standard method," however the savings on weed control compensated for the lower yield, "I benefit as a farmer, but so does the environment, the climate, biodiversity and the soil itself!"

Background information

Project information

BioBo project coordinator: gabriele.gollner@boku.ac.at

BIOBO: <https://ec.europa.eu/eip/agriculture/en/find-connect/projects/og-biobo-ertragsentwicklung-und-humusaufbau-%C3%BCber>

Alfred Grand: landwirtschaft@grand.at

Pictures

Pictures below are free for use. Click on the picture to download the high-resolution version



The practice of minimising tillage is one of the management practices that Austrian farmer Alfred Grand uses to stop the decline of organic matter in soils



Alfred Grand experiments with the 'roller-crimper' method: a farming practice that adds even more carbon to his system



More information on carbon sequestration in arable farming

The [EIP-AGRI Focus Group 'Moving from source to sink in arable farming'](#) visited Alfred's farm during their second meeting in June 2018. The 20 experts will continue to work on the minipapers and the Focus Group report is scheduled to be published early 2019.

More related EIP-AGRI carbon sequestration topics

- [EIP-AGRI Focus Group 'New forest practices for adaptation to climate change'](#)
- [EIP-AGRI Focus Group 'Grazing for carbon'](#)
- [EIP-AGRI Focus Group 'Soil organic matter in Mediterranean regions'](#)
- [EIP-AGRI brochure 'Soil organic matter matters'](#)

EIP-AGRI Inspiration from your country on carbon sequestration

Here below you find a list of topics that have been covered in one of the EIP-AGRI events and / or EIP-AGRI publications.

France	Cutting atmospheric carbon: a central role for soils	Agrinnovation magazine n°4 – p.19
Germany, Italy, Sweden	Climate-friendly practices	Inspirational idea
Italy	Agro-industrial waste put to good use as biofertiliser	Inspirational idea
Portugal	A passion for permanent pasture	Inspirational idea
Sweden	Swedish organic farm leads the way in fighting climate change	Press article
UK	Increasing farm profitability while cutting carbon emissions, a toolkit developed by farmers for farmers	Inspirational idea Press article

Operational Groups on carbon sequestration in your country?

At the beginning of August 2018, the [EIP-AGRI Operational Groups database](#) on the EIP-AGRI website included 15 Operational Groups in the EU working on carbon sequestration:

- Ireland: 3
- Italy: 12

EIP-AGRI

The European Innovation Partnership 'Agricultural Productivity and Sustainability' (EIP-AGRI) is one of five EIPs which have been launched 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 by bringing research and practice closer together – in research and innovation projects as well as via the EIP-AGRI network.

EIPs aim to streamline, simplify and better coordinate existing instruments and initiatives, and complement them with actions where necessary. Two specific funding sources are particularly important for the EIP-AGRI: the EU Research and Innovation framework, Horizon 2020, as well as the EU Rural Development Policy.

- [EIP-AGRI Brochure on the EIP-AGRI Network \(2015\)](#) (EN – BG – FR – GR – HU – IT – PT – RO - SP)
- [EIP-AGRI Brochure on Thematic Networks under Horizon 2020](#) (EN – BG – FR – HU – SP)
- [EIP-AGRI Brochure Horizon 2020 multi-actor projects](#) (EN – BG)
- [EIP-AGRI Brochure on Funding opportunities under Horizon 2020 - 2019 Calls](#) (EN)

EIP-AGRI Operational Groups

EIP-AGRI Operational Groups are groups of people who work together in an innovation project funded by Rural Development Programmes (RDPs). Operational Groups are the EIP-AGRI's main tool for turning innovative ideas into real solutions for the field.

An Operational Group consists of several partners with a common interest in a specific, practical innovation project. The people involved in the Operational Group should bring in different types of practical and, where necessary, scientific expertise. They may include farmers, scientists, agri-business representatives and many others. Every country or region has the possibility to define specific national demands or restrictions on how to put together an Operational Group.

- Visit the [Operational Groups page](#) on the [EIP-AGRI website](#)

- **EIP-AGRI Brochure on Operational Groups: Turning your idea into innovation (update 2016)**
(DE - EL - EN – CZ – FR - HU – PT – RO – SK – SP)
- **EIP-AGRI Brochure Operational Groups - Collaborate to innovate** shows examples of successful collaborations in Portugal, France, Estonia, Finland, Germany and the Netherlands. It provides Operational Groups with inspiration and tools for further knowledge exchange within the EIP-AGRI network.

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