

## Agricultural techniques to prevent nitrates pollution and the organic matter conservation

### Riferimenti

Tipo di progetto

Gruppo Operativo

Acronimo

NITRATI FERRARA

Tematica

Emissioni di inquinanti e gas serra

Information

Time frame

2016 - 2019

Durata

36 months

Partners (no.)

7

Regione

Emilia-Romagna

Comparto

Multifiliera

Localizzazione

ITH56 - Ferrara

Costo totale

€362.406,98

Fonte di finanziamento principale

Programma di sviluppo rurale

Programma di sviluppo rurale

2014IT06RDRP003: Italy - Rural Development

Programme (Regional) - Emilia Romagna

Parole chiave

Fertilisation and nutrients management

Soil management / functionality

Agricultural production system

Sito web

<https://www.fondazioneavarrar.it/index.php/chiamo/iniziativa-gruppo-nitrati-...>

Project status

completed



### Objectives

To develop agronomical practices that reduce nitrates losses in vulnerable zone (Ferrara Province), by increasing the organic matter and reduce the water leaching and runoff in soils representative of the area.

These effects will be achieved making use of organic soil improvers (compost) and/or through the application of conservation agriculture techniques, on demonstrative fields.

The hypothesis that will be tested is that the increase of soil organic matter:

- 1) decreases the leaching and runoff of water with loss of nitrates;
- 2) determines conditions for denitrification.

### Activities

- study of the soils on which the tests are carried out, aimed in particular to the transferability of the results;
- planning and implementation of the agricultural techniques aimed at increasing organic matter in soils and reducing nitrate leaching and run-off;
- monitoring of organic matter and the nitrogen cycle in the agronomic systems compared;
- assessment of economic and environmental sustainability of the proposed innovative practices, compared with the traditional ones;
- training, technical-scientific and educational dissemination, including through the EIPAGRI network.

Partenariato

| Role    | Azienda                                       | Address                                                   | Telephone    | E-mail                               |
|---------|-----------------------------------------------|-----------------------------------------------------------|--------------|--------------------------------------|
| Leader  | Fondazione per l'agricoltura Fratelli Navarra | Via Conca 73/b<br>44123 Malborghetto di Boara FE<br>Italy | 0532 756110  | marco.rivaroli@fondazione.navarra.it |
| Partner | Areté srl                                     | Via del Gomito 26/4<br>40127 Bologna BO<br>Italy          | 051 4388500  | lgruppioni@areteonline.net           |
| Partner | Fondazione CRPA Studi Ricerche                | Viale Timavo 43/2<br>42121 Reggio Emilia RE<br>Italy      | 0522- 436999 | info@fondazionecrpa.it               |
| Partner | HORTA s.r.l.                                  | Via E. Gorra, 55<br>29122 Piacenza PC<br>Italy            | 0523 1860024 | f.passuello@horta-srl.com            |
| Partner | I.TER Soc. Coop.                              | Via Zacconi 12<br>40127 Bologna BO<br>Italy               | 051 523976   | scotti@pedologia.net                 |
| Partner | Sarto Graziano                                | Via Rangona 47/A<br>44015 Portomaggiore FE<br>Italy       | 0532 812203  | Graziano.sa@libero.it                |
| Partner | Università degli Studi di Ferrara             | Via Ludovico Ariosto 35<br>44121 Ferrara FE<br>Italy      | 0532 455737  | ctg@unife.it                         |

## Pratiche abstract

### Description

Starting from the assumption that the increase of the soil organic matter decreases the risk of water leaching and runoff and determines optimal conditions for denitrification and the complete removal of nitrates (anoxia and availability of C substrates), the Operational Group aims to develop agricultural practices that go in this direction, i.e. bringing back organic matter to the soil through soil improvers (compost) and maintaining or increasing the organic matter thanks to conservation agriculture techniques.

These practices are compared with conventional ones inside two farms that have different soils and representative of the main types of soils of the province of Ferrara.

Other than the agronomic activity, the Operational Group supports the research for the evaluation of the main expected results: a) maintaining / increasing the organic matter content of soils, with the expected effects on the nitrogen cycle; b) the stabilization of the soil structure, the increase of the bearing capacity of soils and the reduction of the compaction due to

heavy rain ("splash" effect); c) the increase in the water retention of the soil and the decrease in peak hydraulic loads, critical in an area at a high flood risk, such as the Province of Ferrara; d) the increase of biodiversity and metabolic activity of the soil, with positive effects such as the improved efficiency of macro and micro nutrient cycling, fertility build up and higher removal of pesticide residues.

### Link utili

| Titolo/Descrizione                       | Url                                                                                                                                                                                         | Tipologia                                                 |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| Sito web NITRATI FERRARA                 | <a href="https://www.fondazioneavarrar.it/index.php/chi-siamo/iniziativa-gruppo-nitrati-...">https://www.fondazioneavarrar.it/index.php/chi-siamo/iniziativa-gruppo-nitrati-...</a>         | Sito web                                                  |
| Pagina sul partner Fondazione CRPA       | <a href="https://www.fondazionecrpa.it/prodotto/goi-nitrati-ferrara/">https://www.fondazionecrpa.it/prodotto/goi-nitrati-ferrara/</a>                                                       | Sito web                                                  |
| il video con i sultati del progetto      | <a href="https://www.youtube.com/watch?v=jNRGw1fm57w">https://www.youtube.com/watch?v=jNRGw1fm57w</a>                                                                                       | Materiali utili                                           |
| Relazione tecnica finale                 | <a href="http://www.consorziocer.it/Public/ConsorzioCER/Editor/Doc/Relazione%20Tecnica_F...">http://www.consorziocer.it/Public/ConsorzioCER/Editor/Doc/Relazione%20Tecnica_F...</a>         | Materiali utili                                           |
| OG Nitrarti Ferrara - I Ter Webpage      | <a href="https://www.pedologia.net/it/NITRATI-FERRARA/cms/Pagina.action?pageAction=&amp;page...">https://www.pedologia.net/it/NITRATI-FERRARA/cms/Pagina.action?pageAction=&amp;page...</a> | Link ad altri siti che ospitano informazioni del progetto |
| Video sui risultati del progetto         | <a href="https://www.youtube.com/watch?v=jNRGw1fm57w">https://www.youtube.com/watch?v=jNRGw1fm57w</a>                                                                                       | Materiali utili                                           |
| Rassegna Stampa Progetto Nitrati Ferrara | <a href="https://www.pedologia.net/userfiles/FileAllegato/files/rassegna_nitrati_fe_1.pdf">https://www.pedologia.net/userfiles/FileAllegato/files/rassegna_nitrati_fe_1.pdf</a>             | Materiali utili                                           |
| Risultati dello studio                   | <a href="https://www.pedologia.net/userfiles/FileAllegato/files/BROCHURE_2020_Navarra_ri...">https://www.pedologia.net/userfiles/FileAllegato/files/BROCHURE_2020_Navarra_ri...</a>         | Materiali utili                                           |