Smartgas: farming with biogas to reduce carbon footprint and increase sustainability and resilience to climate change of cropping systems for quality

Riferimenti
Tipo di progetto
Gruppo Operativo

Acronimo
SMARTGAS

Tematica
Gestione aziendale

Information
Time frame
2019 - 2021

Durata
32 months

Partners (no.)
10

Regione
Toscana

Comparto
Multifiliera

Localizzazione
ITI17 - Pisa
ITI19 - Siena
ITI1A - Grosseto

Costo totale
€291.772,54

Fonte di finanziamento principale
Programma di sviluppo rurale

Programma di sviluppo rurale
2014IT06RDRP010: Italy - Rural Development Programme (Regional) - Toscana

Parole chiave
Fertilisation and nutrients management
Soil management / functionality
Farming practice

Sito web
http://www.smartgastoscana.it/

Project status
completed

Objectives
The aim of the project is to identify, test and validate management strategies and agronomic solutions able to guarantee sustainable cropping and quality agricultural products, enhancing the use and distribution of digestate through better techniques/machineries and optimizing farming systems of the biogas farms. In this way, the project aims to achieve long-term consolidation of the agricultural biogas sector in Tuscany, as well as sustainable intensification goals.

Activities
Regarding the farming technology, the process innovations to be proposed are:
1) conservation and minimum tillage;
2) sub-surface and side dress distribution of digestate;
3) digestate microfiltration and use in micro-fertigation.
Cropping systems will be enhanced by:
1) double cropping (winter + summer crops);
2) catch-crops, able to catch surplus nitrogen after the harvest of the previous crop;
3) conventional and unconventional multiannual species (e.g. Italian sainfoin/cool-season cereals).

Context
Agriculture must be involved in GHG mitigation, by reducing agricultural inputs and therefore energy use (i.e. fuel and fertilizers) and increasing the carbon sequestration capability of farmland soils.
Increasing C sequestration capacity of agricultural soils is effective both as a mitigation and an adaptation strategy, as it positively influences all the

physical, chemical and biological properties of soil, thus greatly favoring crop development and nutrition. Increased sequestration can be achieved both by reducing the intensity and frequency of soil tillage (conservation tillage) and by increasing organic C inputs to the soil (e.g. organic fertilizers, cover crops, crop residues, etc). For these reasons, it is important to promote good practices aimed to increase soil carbon and to create synergies between single techniques, starting from farms in which part of these innovations have already been introduced. Anaerobic digestion is a considerable asset when coupled with optimized cultivation systems that allow:
- to make the most of the carbon and nutrient potential of digestate;
- to reduce soil tillage;
- to keep the farmland "photosynthetically active" as long as possible along the year, by means of the presence of food, feed and bioenergy crops.
While collecting information, it has been found that digestate in Tuscany is often not used at the best of its potential within the farm producing it, nor outside (i.e. in surrounding farms). In particular, some state-of-the-art technologies for the exploitation of the liquid fraction are still scarcely widespread, and its distribution by means of traditional equipment often does not achieve optimal results both from the
agronomic and environmental points of view.

Partenariato

Role	Azienda	Address	Telephone	E-mail
Leader	Confagricoltura Toscana	Via degli Alfani 27 50121 Firenze FI Italy	055 0545011	fedtosca@confagricoltura.it
Partner	SITE srl - Società immobiliare tosco emiliana	Via Aurelia Antica 58100 Grosseto GR Italy	0564 24116	
Partner	Azienda Agricola Le Rogaie	Località Barbaruta 58100 Grosseto GR Italy	0564 401200	venditadiretta@lerogaie.it
Partner	Bio.Gas.Merse Società Agricola Consortile a.r.l.	Località Montioni 35 53018 Sovicille SI Italy	0577 817592	

Role	Azienda	Address	Telephone	E-mail
Partner	Istituto di Scienze della Vita - Scuola Superiore Sant'Anna	Via Santa Cecilia 3 56127 Pisa PI Italy	050 883919	
Partner	Società Agricola Marchesi Ginori Lisci	Vicolo della Terrazza 6 56040 Ponteginori PI Italy	0588 37443	info@marchesiginorilisci.it
Partner	Società Agricola Querciolo	Corso Carducci 73 58100 Grosseto GR Italy	329 1621653	
Partner	ERATA - Ente Regionale di Assistenza Tecnica in Agricoltura	Via degli Alfani 67 50121 Firenze FI Italy	055 293354	fedtosca.erata@confagricoltura.it
Partner	Consorzio Italiano Biogas e Gassificazione (CIB)	Via Albert Einstein 1 26900 Lodo LO Italy	0371 4662633	segreteria@consorziobiogas.it
Partner	Azienda Agricola Stassano Alessandro	Via della Bonifica 137 56037 Peccioli PI Italy	0587 697274	az.agr.stassano@virgilio.it

Pratice abstract
Link utili

Titolo/Descrizione	Url	Tipologia
Sito web del progetto	http://www.smartgastoscana.it/	Sito web
Pagina Facebook del progetto	https://www.facebook.com/SmartgasToscana/	Link ad altri siti che ospitano informazioni del progetto

Titolo/Descrizione	Url	Tipologia
Pagina web sul sito del Partner ERATA	https://www.erata.it/progetti/psr-regione-toscana-2014-2020/smartgas/	Link ad altri siti che ospitano informazioni del progetto
Video finale del progetto	https://www.youtube.com/watch?v=WcvpX4KliYs	Materiali utili