

Fly Larvae Associated with Mix Biochar for reducing swine manure Emission

Riferimenti

Tipo di progetto

Gruppo Operativo

Acronimo

FLAMBE'

Tematica

Emissioni di inquinanti e gas serra

Information

Time frame

2017 - 2019

Durata

24 months

Partners (no.)

6

Regione

Emilia-Romagna

Comparto

Zootecnia - suini

Localizzazione

ITH51 - Piacenza

ITH52 - Parma

Costo totale

€189.858,45

Fonte di finanziamento principale

Programma di sviluppo rurale

Programma di sviluppo rurale

2014IT06RDRP003: Italy - Rural Development

Programme (Regional) - Emilia Romagna

Parole chiave

Climate and climate change

Fertilisation and nutrients management

Waste, by-products and residues management

Agricultural production system

Project status

completed



Objectives

The overall goal of this Plan is to propose a cost-effective strategy to manage swine manure for the Emilia Romagna breeders. The Plan is aimed at reducing the environmental pressures in terms of greenhouse gas emissions and ammonia associated to the swine management and to enhance the use of swine manure. Swine manure may be utilized as fertilizer, giving essential nutrients for agricultural crops but the continued land application of manure may result in excessive nutrient loss from soil to water deteriorating ecosystem. Therefore vermicomposting and pyrolysis will be proposed as new technologies for manure treatment that can reduce waste, GHGs emissions, and be environmentally safe.

Activities

1) Swine manure digestion by larvae. 2) Separation of the lipid and protein parts to be used for energy purposes, following a circular economy approach. 3) Pyrolysis of larvae residues to obtain energy (syngas) and biochar that can be used as soil amendment in agriculture to improve structure and quality of soil. 4) assessment of the reduction of environmental impact resulting from the use of swine manure for energy and agronomic purposes following a life cycle assessment approach

Partenariato

Digestione con larve associata a pirolisi dei residui per ridurre le emissioni di gas serra da parte degli allevamenti suini

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<https://www.innovarurale.it/pei-agri/gruppi-operativi/bancadati-go-pei/digestione-con-larve-associata-pirolisi-dei-residui>

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Pratiche abstract

Description

Main practical recommendation

The overall goal of this Plan is to propose a cost-effective strategy to manage swine manure for the Emilia Romagna breeders. The Plan is aimed at reducing the environmental pressures of swine manure in terms of greenhouse gas emissions and ammonia and to enhance the use of swine manure in agriculture. Therefore vermicomposting and pyrolysis of swine manure will be proposed as new technologies for manure treatment that can reduce waste, GHGs emissions, and be environmentally safe.

Main Results/outcomes

- Reduction of ammonia emissions from swine manure through the conversion of nitrogen into more usable forms
- Reduction of greenhouse gas emissions due to the application of swine manure in the field, substituting them with biochar,

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obtained by the pyrolysis, as soil amendment.

- Improvement of the structural and qualitative features of soil. In fact, the biochar application allows to maintain texture and structure, to enhance soil carbon stock, to reduce evapotranspiration as well as leaching of contaminants.
- Reducing emissions of greenhouse gases associated with the overall proposed solution.

Link utili

Titolo/Descrizione	Url	Tipologia
Relazione tecnica finale	https://agricoltura.regione.emilia-romagna.it/progetti-innovazione/raccolta-pro...	Materiali utili