

Project number: 6191
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Crops and Animals Together - CANTogether



Key external stakeholders:

Pig farmers, tillage farmers, policy makers, pig and tillage advisors

Practical implications for stakeholders:

This project analysed data from pig and tillage farmers and looked at the economic and environmental benefits of using pig manure on tillage ground in the North East of Ireland

- The data analysis showed that there was an advantage in terms of economics and outputs on tillage farms that used pig manure compared with those that just used mineral fertiliser.
- The main technology produced as part of the project is an online platform developed to facilitate communication between pig and tillage farmers.

Main results:

- There was a reduction in the import of mineral fertiliser and a higher crop yield on tillage farms that used pig slurry over those that used mineral fertiliser alone.
- A website was developed with the aim of facilitating communication between pig farmers and tillage, livestock and dairy farmers that are interested in using pig manure as a resource on their farms.

Opportunity / Benefit:

An online platform was developed to facilitate communication between farmers that want to exchange material thus reducing the reliance of farmers on imports of artificial fertilizer which are subject to price volatility. Pig farmers and advisors can use the results to strengthen the case for the use of pig manure on tillage land in Ireland.

Collaborating Institutions:

INRA, UNIZAR, GeoSpatiumLab S.L, CLW Environmental Planners Ltd, Institut de L'Elevage, Wageningen University

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1. Project background:

The overall aim of this project was to investigate methods of promoting the use of pig manure on tillage farms as a source of locally available nutrients for improving the soil quality on tillage farms. In Ireland, pig manure is most commonly utilised by application to grassland on neighbouring livestock farms. However, with the introduction of the Nitrates Directive (S.I. No. 610, 2010) many farms that previously accepted pig manure are already at capacity as the organic nitrogen (N) loading from livestock may already be at the limit of 170 kg N/ha. In addition, the phasing out of the transitional arrangements for the Nitrates Directive by 2017 will mean additional land must be sourced for spreading pig manure. Investigations were designed to determine methods that will improve the integration of pig slurry on crops by encouraging more tillage farmers to use pig slurry.

2. Questions addressed by the project:

- How can more tillage farmers be encouraged to use pig slurry on their crops?
- How can new tillage lands be identified suitable for pig slurry application?
- How can communication between tillage farmers and pig farmers be promoted, encouraged and facilitated?

3. The experimental studies:

A workshop was held in Dublin with members of the project and an initial idea of an online brokering tool was developed. Workshops were also held with members of pig and tillage discussion groups and Teagasc advisors to get initial feedback on the idea. A collaborative project with Teagasc and GeoSlab in Spain brought about the development of a functioning website hosted by GeoSlab. This website was shown to pig farmers and advisors again before the website was finalised.

A comprehensive set of data was collected from 5 pig farms and 6 tillage farms. This data was analysed by INRA using several models including a Mineral Balance model and models developed as part of the Cantotogether project.

• Main results:

Cooperation between pig farmers and tillage farmers reduces mineral fertiliser use on tillage farms that use pig manure relative to their specialised counterparts who use just mineral fertiliser

- Mineral N fertiliser input per hectare on tillage farms that use pig manure was 21 kg N ha⁻¹ lower than on tillage farms that didn't.
- Output of grain was 0.9 tonnes per hectare higher on tillage farms that use pig manure

4. Opportunity/Benefit:

The data further supports the previous work by Teagasc to promote and encourage the use of pig

manure on tillage land. The data analysis shows that there is an advantage on farms that use pig manure on tillage crops in terms of a reduction in the amount of mineral fertiliser required to grow crops as well as an increased yield of the crops produced. A website was developed that allows pig farmers and tillage farmers to search for each other by way of volume of pig manure available or required, location or presence of a manure store on the tillage farm. This website increases the opportunity for farmers to communicate in order to benefit one another.

5. Dissemination:

The online platform is located here <http://mularroya15.cps.unizar.es:8080/brokeringsystem/>
Workshops were held with two groups of pig farmers on Wednesday January 21st 2015 in Kilkenny and October 6th 2015 in Cavan.

The project was presented at the Crops Open Day, Oakpark, 2015 with a board titled 'The value of pig manure'. Full board can be seen here <http://www.fp7cantogogether.eu/news/cantogogether-at-crops-open-day-2015-carlow-ireland>

Details of the project were posted on the Cantogogether website <http://www.fp7cantogogether.eu/>

Main publications:

Regan, J., Marton, S., Barrantes, O., Ruane, E.M.m Hanegraaf, M., Berland, J., Korevaar, H., Pellerin, S., Nesme, T. (Submitted) 'Does the recoupling of dairy and crop production at the district scale lead to environmental benefits? A case-study approach in Europe.' European Journal of Agronomy

Popular publications:

Today's Farm - Mutual benefits: tillage farmers apply pig manure (July/August 2015)

6. Compiled by: Eimear Ruane, James Humphreys
