

Demonstrating nutrient recycling in crop farming: An on-farm demo-trial Ireland

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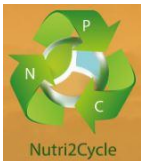


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#Nutri2Cycle



Arable system in Ireland

- Typically plough based
- Growing interest in minimum and no-till systems
- Cereals, beans, maize silage, beet, oilseeds among main crops
- Has become more specialised over the years
- Limiting on-farm opportunities for manure recycling
- Recognition of the value of organic manures, recycled nutrients – cost and soil
- Challenges to implement including access, transport, nutrient availability, spread pattern



H2020 project – 2018 to 2023

The recycled fertilisers used in the demonstration



Cattle slurry (CS)



Poultry Manure (PM)



Broiler Manure (BM)



Dairy Phoscalia sludge (DPS)



Dairy activated sludge (DAS)



Pig slurry solids (PSS)

The on-farm demonstration trial

On the farm of Sylvester Bourke, Co. Wicklow, fitting in with the rotation in the field

2019 Maize silage



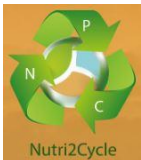
2020 Spring wheat



2021 Oilseed rape



2022 continues with winter wheat crop at present



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Objectives

- Demonstrate incorporation of a range of recycled nutrient sources into the crop nutrient management plan to displace a portion of the mineral/chemical fertiliser

In the short-term:

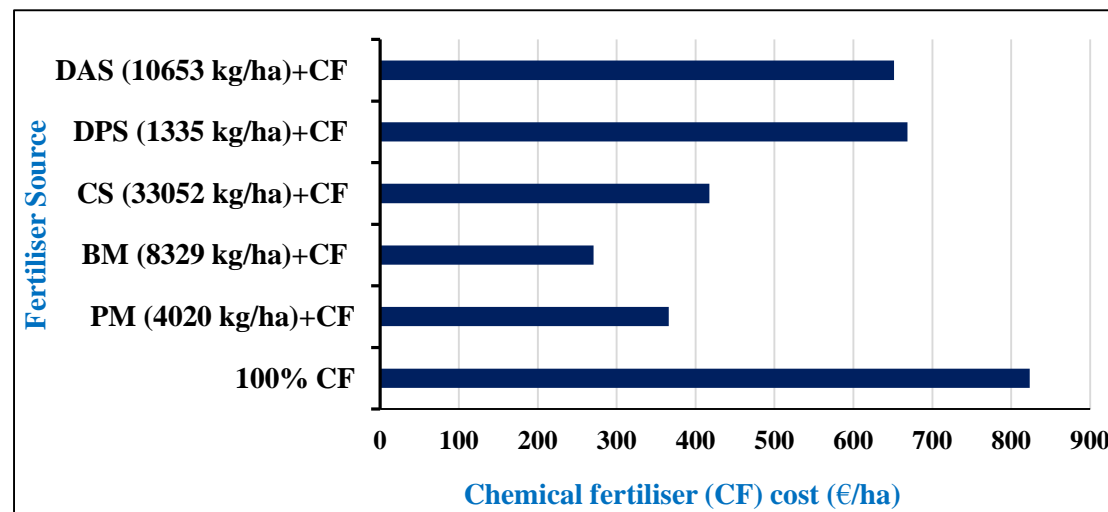
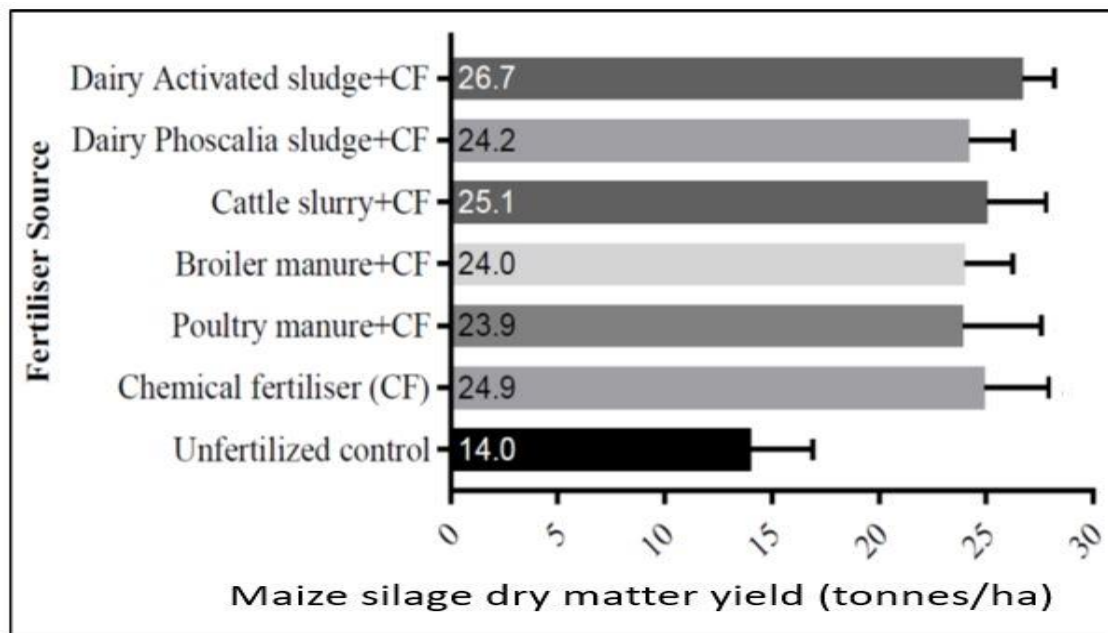
- Measure yield performance
- Evaluate the economics
- Evaluate practicalities
- Use for extension

In the longer-term:

- Evaluate effects on soil carbon and soil biology



2019 Maize silage

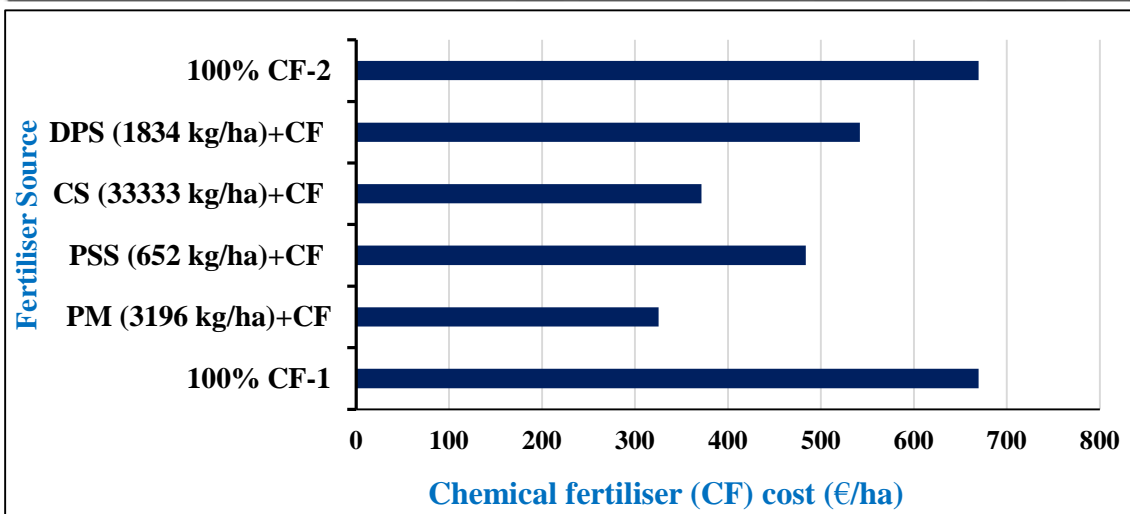
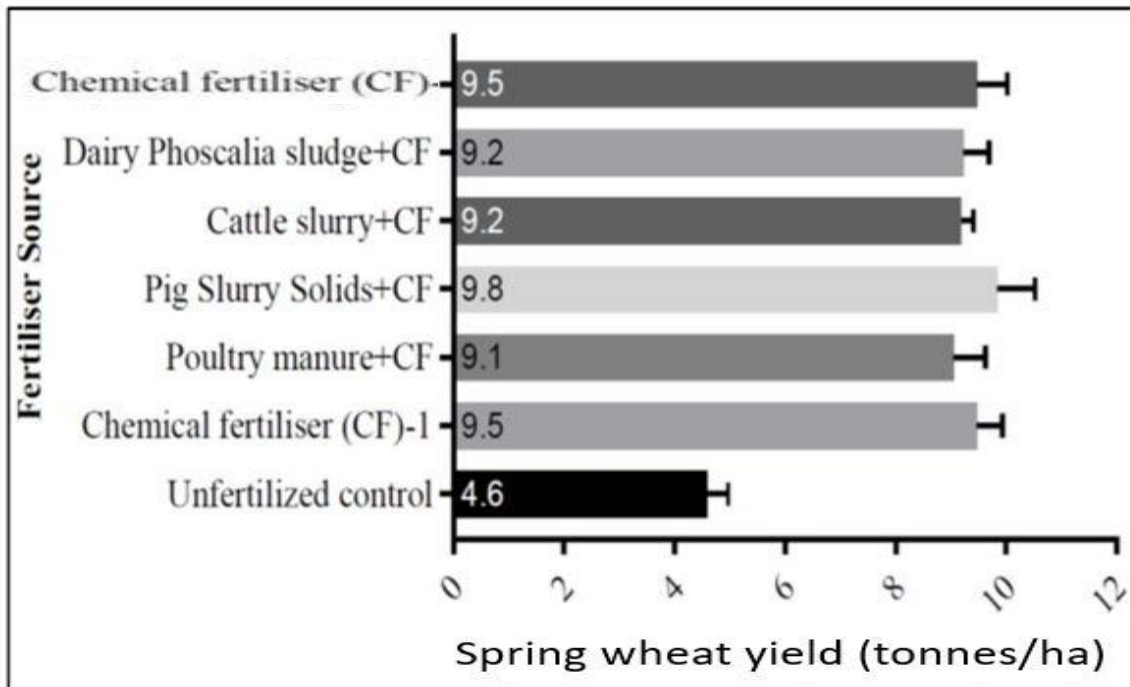


*Cost assumptions (N 2.18, P 3.69, K 1.44 and S 0.50 euro/kg)

H2020 project – 2018 to 2023

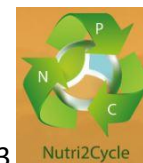


2020 Spring Wheat

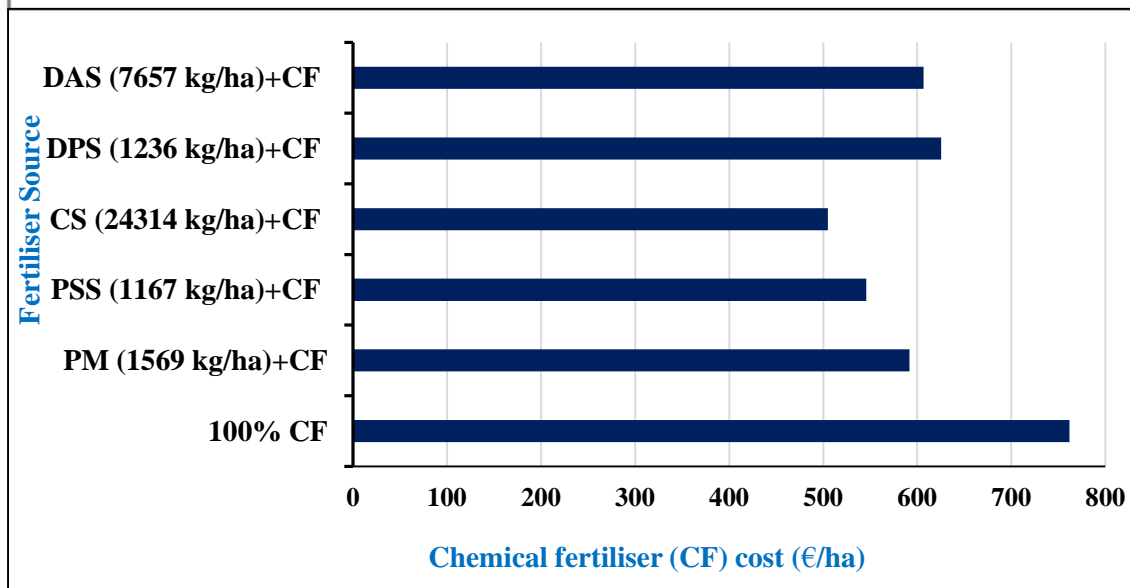
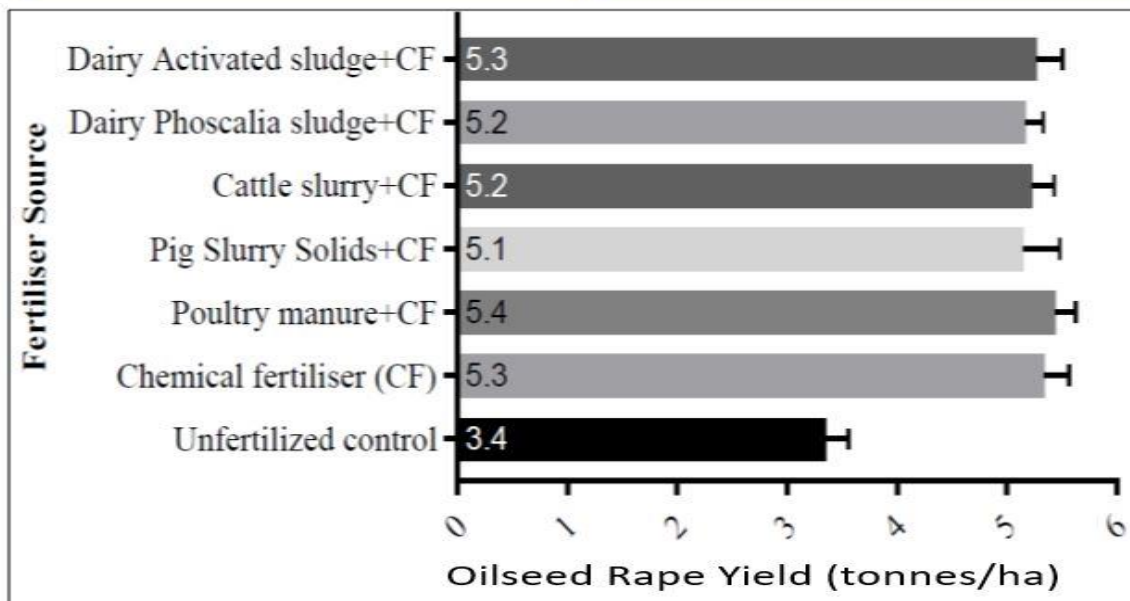


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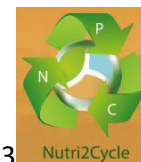


2021 Oilseed Rape



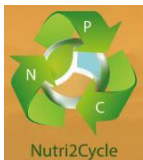
*Cost assumptions (N 2.18, P 3.69, K 1.44 and S 0.50 euro/kg)

H2020 project – 2018 to 2023



Indications of the demonstration so far

- Similar yields achieved while displacing chemical/mineral fertiliser
- Potential cost savings
- Limited fertiliser replacement values available for some recycled fertilisers
- Differing spreading characteristics between fertilisers
- Potential to examine soil carbon and biology effects as the treatments continue – the value of longer-term sites



Want to know more?



Nutri2Cycle Project- Mark Plunkett
432 views · Jun 18, 2020



Nutri2Cycle Project
255 views · Apr 20, 2021

<https://www.youtube.com/watch?v=vt9CKYwn48A&t=36s>

https://www.youtube.com/watch?v=84lrM_tBPvU&t=33s



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<https://www.nutri2cycle.eu/>

Thank you Questions?



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