

Compost & Digestate demonstration trials on Irish arable & pasture crops

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Abstract

rx3 (www.rx3.ie) is a Department of the Environment, Community & Local Government project helping to develop markets for Irish recycled material to form new products.

Before 2011, barriers to market development for compost products in Ireland included a lack of education and poor awareness / public perception of waste derived composts and little knowledge of use / benefits associated with compost and digestate and how to apply to maximum advantage.

Crop demonstration trials have been a feature of compost marketing in countries that have successfully introduced widespread source segregation, separate collection and composting of organic wastes and this information is widely published. Similar projects were required in Ireland to demonstrate benefits of compost use to farmers. Therefore, rx3 appointed Methanogen Ltd to deliver a 36-month project demonstrating market potential and to quantify technical, environmental, and financial aspects of the approach, to produce results to aid adoption of best practice on Irish working farms. The long term objective is to increase agricultural use of compost.

Five farms were selected, each growing either spring barley or winter wheat or grass silage, to trial and demonstrate use of high quality food waste derived compost and digestate against slurry and inorganic fertiliser in a commercial farming environment.

Third year preliminary results, now available (November 2012), indicate a range of beneficial effects and practical learning's. These include: digestate and inorganic fertilisers showed similar nitrogen release rates; use of organic fertilisers increased soil organic matter and soil activity; application timing is important to ensure adequate incorporation; compost is well suited to grass/clover, with steady N-release; yields may increase.

A detailed chemical characterisation of the compost and digestate was conducted. Incubation trials studied nitrogen and phosphorus (N and P) availability of compost and digestate when mixed with soil. Pot-plant growth trials using grass determined relative availability of organic N and P relative to inorganic N and P.

An extensive information dissemination exercise has been conducted throughout the project, and over 400 stakeholders have attended open days. A financial evaluation of effects is being developed. Importantly, the farmers are very satisfied with results to date.

Full results from the project are expected to be published after March 2013.

References

[1]Prasad M (2010) EPA (Ireland) STRIVE A Literature Review on the Availability of Nitrogen from Compost in Relation to the Nitrate Regulations SI 378 of 2006. pp42

[2]Prasad M (2010) EPA STRIVE (Ireland) A Literature Review on Phosphorus Availability from Compost in Relation to the Nitrate Regulations SI 378 of 2006) pp 32