Sustainable Recycled Organics Usage

ON-FARM FACTSHEET SERIES

Fact Sheet: M1.1 Updated: 14/2/2007

MANAGEMENT – Weed seeds in recycled organics

Weed seeds can be found in some recycled organic products. These seeds generally originate from the animal feed or bedding material. Because animal feed may be sourced from a wide region, weeds can be transferred widely through recycled organics if they are not managed correctly.

Weed seeds that enter the animal in the feed can pass through the digestive tract and remain viable, and may even germinate more rapidly because of the digestive process. Small seeds with hard seed coats are the most likely to remain intact when feed is crushed or rolled, and can pass through the digestive tract of an animal and continue to be viable. Weed seeds may also enter the system with the bedding material (where used), particularly straw-based bedding. Seeds in this material are likely to remain viable as they are not exposed to any damaging treatment during usage.

The risk of weed seeds is greatest where feed or bedding is sourced from a long distance where different weeds may be present. If the product is applied in areas close to the feed and bedding source, weed seeds may already be present in the application area reducing the impact. However, this can add to the weed seed bank of the paddock.

The type of animal digesting the weed seed can have an effect on the viability of the seed once passed through the animal. Poultry are more efficient at breaking down seeds, and generally have minimal viable seeds in their manure. Pigs are considered the next most effective at digesting weed seeds, while cattle are the least effective and have the highest risk of contamination.

Management options

Weed seed transfer to application areas via animal by-products can be minimised by:

- Sourcing stockpiled or composted recycled organic products
- Gaining a weed germination test prior to land application

Composting and stockpiling can reduce the number of viable weed seeds in recycled organic because the high temperatures reached in the pile effectively kill the seeds. However, the effectiveness of composting manure to minimise weed seed depends on:

- The temperatures reached in the composting process
- Length of time all material exposed to these temperatures
- Available moisture
- Species of weed

Generally, minimum temperature ranges from 39 - 60°C for a minimum of three consecutive days will kill most weed seeds, though this can vary with different weed species.

When purchasing an animal by-product, it is useful to ask how the product has been stored and for how long, and if the product has been partially or fully composted. This can give an indication to the potential for weed seeds to be a problem after utilisation.

If concerned about weed seeds in an animal by-product, a weed seed germination test can be done at a local laboratory for approximately $40. A 100 g sample of the material is usually required, but this should be checked with the laboratory prior to submission.

References and further reading:

Grundy, AC, Green, JM and Lennartsson, M 1998, The effect of temperature on the viability of weed seeds, *Compost Science Utilisation*, **6**, 26–33.

Laflamme, P 2006, Weed Prevention, last updated 9 August 2006, accessed 20 December 2006, http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/prm5044

Larney, FJ & Blackshaw, RE 2003, Weed Seed Viability in Composted Beef Cattle Feedlot Manure, *Journal of Environmental Quality*, **32**,1105-1113.

Some other fact sheets in this series:

Typical Composition – Layer hen manure
Typical Composition – Piggery spent bedding
Typical Composition – Feedlot manure
Land Application – How much is manure worth?
Land Application – How much should I apply?
Management – Metals in recycled organics

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