

Land & Water fact sheet

Agricultural usage: compost

Compost is broken down organic material containing a rich diversity of micro-organisms. When applied to the soil it enhances the populations of micro-organisms already present. The primary value to plants is the ability of these micro-organisms to facilitate the provision of nutrients in a readily available form.

Well made compost contains a wide diversity of micro-organisms, both good and bad, and contains the food and shelter required to allow them to successfully establish in the soil. The dominant micro-organisms in compost can be tailored for the intended crop use. Compost should be made from materials that provide and suit the micro-organisms desired in the final product, often a mix of manures and plant waste.

Application

Based on a soil analysis and reliable agronomic interpretations, a suitable rate and method of application should ensure the best chance of the micro-organisms successfully establishing themselves in the soil. Compost could be applied on an annual basis or split into two smaller, twice yearly applications.

The distributing mechanism of a spreader needs to be carefully designed to ensure compost flows and spreads uniformly.

Monitoring

Prior to beginning a new program it is critical to have a monitoring system established to ensure your new program is working to plan. Before the first application, the compost itself and the soil in the field should be analysed (at a suitable laboratory), to establish both its chemical and biological status. This gives a benchmark to reference against when later monitoring the progress of the program. Visual monitoring of the crop and penetrometer readings of the soil should continue throughout the year.

Management

Once applied the living micro-organisms need to be encouraged to thrive by meeting their needs for food and oxygen, as well as protecting them from the external environment.

Certain fertilisers, particularly highly acidic forms, can be detrimental to natural soil biology. If these must be used applying them on a little and often basis and spreading them across the entire crop area can minimise their impacts on the biology.

Aggressive tillage practices such as the use of the rotary hoe can also significantly reduce populations of micro-organisms. Minimising the use of such machinery, employing minimum tillage strategies and using less aggressive cultivators can minimise the negative impacts on soil microbes.



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Benefits

A successful composting program can bring a wide range of benefits including:

- improved water use efficiency
- improved soil structure and drainage
- increased soil carbon levels
- reduced reliance on artificial fertilisers
- increased availability of applied and resident nutrients
- reduction in leaching of nutrients
- longer fruit shelf life
- lower crop disease levels through a healthier plant
- more sustainable farming system.

