

# Land & Water fact sheet

## Agricultural usage: compost tea

Compost tea is a solution of highly enriched natural soil micro-organisms. It is produced by extracting these organisms from a tested, quality compost and rapidly multiplying (brewing) them in an aerobic solution. Well made compost teas contain high populations of a wide diversity of micro-organisms.

Compost tea is distinguished from a compost extract which is simply the micro-organisms that have been washed out of a sample of compost into a tank. This is a quick process but results in a solution containing much lower numbers and diversity of soil biology.

### Use of compost tea

Compost tea is used as a biological inoculum and can be applied to the foliage of plants or directly onto the soil. As a foliage application the high density of micro-organisms acts as a protective filament to keep disease spores out or render them ineffective. When applied to the soil the rich solution of micro-organisms increases the diversity of soil biology. Good managers can then use this diversity to allow the organisms to carry out their many positive roles within the soil.

### Making compost tea

When making tea a brewer needs to ensure that:

- a defined high quality compost is used
- the brewer is 'clinically' clean before starting
- the level of oxygen is kept up whilst brewing ( $>6\text{ppm O}_2$ )
- adequate amounts of 'food' are mixed into the brew
- when the numbers of beneficial organisms have been maximised the brew is complete
- a completed brew should be 'proofed' to ensure it meets the specifications
- a brew should be applied to the field straight away.

### Application

As compost tea contains millions of living organisms the machinery and equipment used to apply the product needs to be carefully chosen.

The action of certain styles of pumps such as piston pumps can crush some of the biology, while the likes of diaphragm pumps are quite gentle on soil biology.

The filter size in micro irrigation and spray systems will define which biology will effectively pass through. Maximise screen size or reduce the need for filtration through the use of large apertures at the spray or irrigation application point. Sand filters allow biology to pass through relatively easily.

The emitters on most drip irrigation systems will be easily blocked by the microbes in the solution, while low pressure sprinkler systems are ideal for spreading soil microbes.

Larger diameter piping, with gentle bends and lower pressure systems are ideal for spreading a solution of microbes.



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### Benefits

Applying a high quality compost tea to horticultural crops and their soils can bring many benefits including:

- increased root structure, particularly fine branched roots responsible for hormone production and cation uptake
- increased nutrient uptake from applied fertiliser
- increased availability of nutrients already contained in the soil
- improved water use efficiency and drought resistance
- improved drainage
- better soil structure and removal of root impeding layers
- reduced reliance on artificial pesticides
- lower crop disease levels through a healthier plant
- a more sustainable farming system.

