

# BACTIVATE5

**Bactivate 5** is a combination of five bacillus bacteria designed to re-build soil structure. It provides essential bacteria to the soil and in turn, stimulates biological activity.

Bactivate 5 Liquid contains individual antagonistic strains of bacillus bacteria, each of which has a specific function within biology. When active, these functions can assist in the reduction of chemicals and chemical fertilisers, improve the immune function of the tree/plant, improve the soil structure, increase crop yield and improve the overall quality of the crop.

For best results, Bactivate 5 should be used in conjunction with Bactivate BioBoost, Bactivate BioBoost Enhance and/ or Bactivate Seaweed.

Key benefits of Bactivate 5 include:

- improves nutrient uptake leading to a reduction in fertiliser requirements,
- solubilises soil bound phosphorous and potassium and makes it available for plant consumption,
- converts atmospheric nitrogen into plant available forms,
- improves tree/plant structure leading to improved pest and disease resistance,
- offsets damage and aids recovery from environmental factors such as drought, heat, frost and wind,
- regulates soil pH at the root zone for optimal tree/plant performance,
- rapidly decomposes organic matter in the soil,
- improves tree/plant growth rates naturally,
- sequesters heavy metals, pesticide and herbicide residuals in soil,
- assists the tree/plant to suppress attack from soil pathogens.



## Product Analysis

Bactivate 5 Liquid Biological Analysis:

Item
Bacillus subtilis
Bacillus megaterium
Bacillus mucilaginosus
Bacillus licheniformis
Brevibacillus laterosporus (Laubach)

## Organisms in the Bactivate Product Range

Organism	Scientifically supported function <sup>1</sup>
Bacillus subtilis	Shown to alleviate stress generated by soil salinity; solubilising soil inorganic phosphate; and remove soil organic contamination.  It is able to combat the impact of pathogens by releasing a number of natural enzymes and antibiotics.
Bacillus megaterium <sup>2,3,4</sup>	Highly efficient phosphate solubilising bacteria that secrete organic acids that can mobilise insoluble nutrients like phosphorus.  Active in soil matter breakdown and turnover.
Bacillus mucilaginosus <sup>2,3</sup>	Nitrogen fixing and mineral dissolving soil bacteria. Application enriches the root space by mobilising nitrogen, phosphorus and potassium and also allows the reduction in mineral fertilisers.  Solubilises Phosphorus.
Bacillus licheniformis <sup>2,4</sup>	Nitrogen fixers. Solubilises Phosphorus.
Brevibacillus laterosporus <sup>5</sup> (Laubach)	Bio control agent against plant pathogens. Presents a broad spectrum antimicrobial activity especially against bacteria and fungi.  Bio treatment for removal of pollutants or contaminants from soil.

1. Search data obtained from the Web of knowledge.
2. The organism can synthesize phytohormones particularly auxins and cytokinins to stimulate plant growth. In such studies plant seeds were subjected to bacterization. Relevant paper: Sokolova et al., 2011; Probanza et al., 1996; Gutierrez Manero et al., 1996; Ortiz-Castro et al., 2008; Prashanth and Mathivanan, 2010.
3. Organisms are considered as 3rd class bio-additives, consisting of products of microbiological synthesis. 1st class of bio-additives are easy assimilating substances of biogenic microelements and the basic nutrient elements (N, P, and K). The 2nd class bio-additives are constructed on the basis of plant growth promoter factors and cell stimulators (Vinaro and Dirina, 2007).
4. Study of inoculation of the bacterium in soil showed the plant growth stimulation effect can be explained not only by their N<sub>2</sub>-fixation and/or P-solubilization ability but also by their production of hormone-like secondary metabolites (Cakmakci et al., 2007).
5. Brevibacillus laterosporus, a Pathogen of Invertebrates and a Broad-Spectrum Antimicrobial Species, ISSN 2075-4450

## Application Rates

Boom sprayers & under-tree sprinklers	For all types of spray equipment, use the area normally covered by one tankful to determine how much product to add. Minimum mixing rate is 1:100	1L/ha*
Drip or micro-irrigation systems	For use in all fertigation systems	1L/ha*
Overhead sprinklers: Travelling or Pivot irrigators	The amount of concentrate needed per hectare of irrigated area for 10 mm of irrigation is 1L to 2L	0.1L to 0.2L* per mm of irrigation
Small volume applications	1.5 mL per litre in hand sprayers and knapsacks; 15mL per 9L watering can	

\* Subject to soil test



For more information on Bactivate Program  
and our range of supplementary products, please contact:  
sales@bactivate.com.au or your preferred Bactivate Distributor.

[www.bactivate.com.au](http://www.bactivate.com.au)

