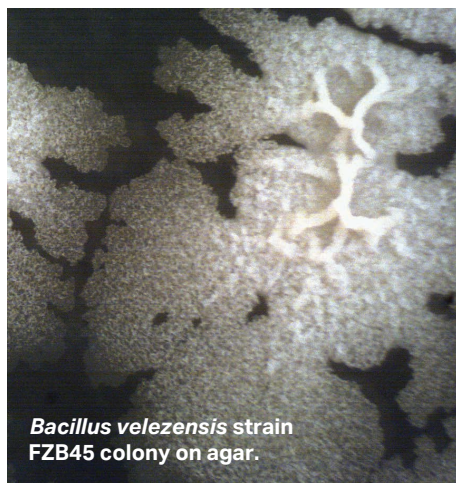




P45 RhizoVital® FL

Reg. No. M506, Act 36 of 1947



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A next generation biological liquid fertiliser containing the natural soil bacterium, *Bacillus velezensis* strain FZB45.

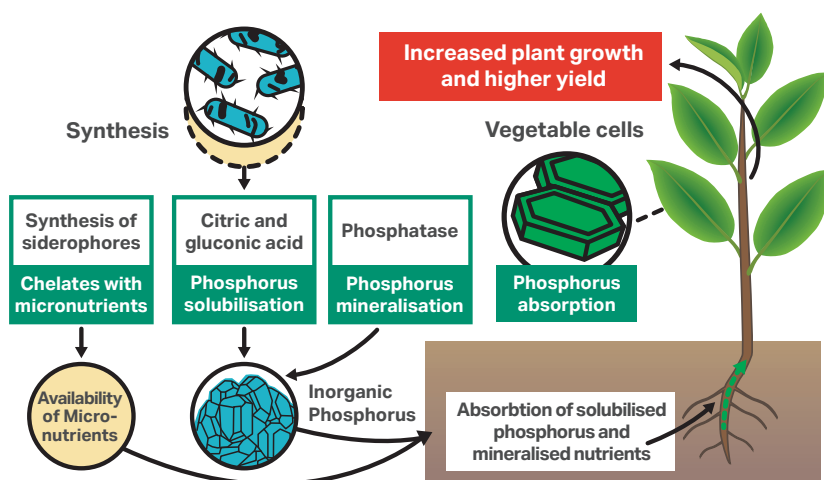
The symbiotic soil bacteria stimulate and support plant root growth, vegetative growth and yields through increased phosphorus mobilisation.

Why use P45 RhizoVital® FL?

Features	Benefits
Phosphorus mobilisation.	Converts inaccessible forms of phosphorus into a plant available form, thus aiding availability and absorption. Make the most of what phosphorus is available in the soil already.
	Increases plant vigour and vitality.
	Improves general root health and development.
	Improves stress tolerance.
Root colonisation.	Actively competes with detrimental root microorganisms, leading to a balanced microbial community around the root zone.
Induced Systemic Resistance (ISR).	Reduces disease intensity and frequency when used as a preventative measure.
Highly concentrated liquid formulation.	Cost effective solution with economical application rates.
Robust spore-based formulation.	Store at room temperature.
Easy to use.	Versatile application strategies. Compatible with most crop protection products and fertilisers.
Effective on a wide range of crops.	Ideal for use as part of an IPM strategy.

How does P45 work?

P45 RhizoVital® FL is a biostimulant containing spores of the soil bacterium *Bacillus velezensis* strain FZB45. After application, the spores germinate and colonise the young growing roots, establishing a close symbiotic relationship with plant roots. The bacteria release enzymes and other compounds which stimulate plant growth and mobilise plant nutrients. It releases plant beneficial molecules, including plant growth regulators and antibiotics, in the root zone, stimulating root growth and providing protection from disease. The bacterium also aids with the activation of Induced Systemic Resistance (ISR).

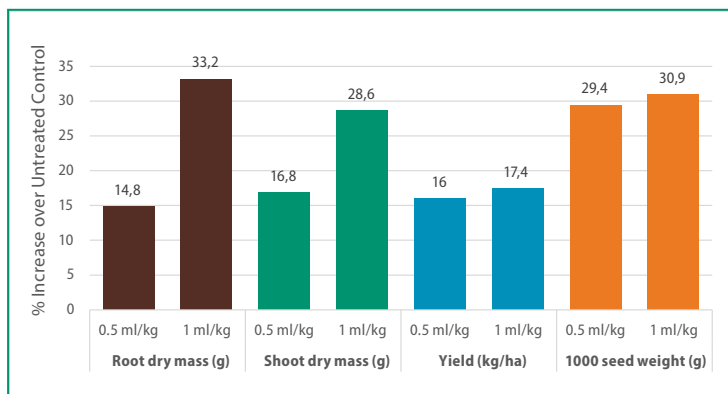


Adapted from Mahanty et. al, 2017

Image above: Schematic representation of how *Bacillus velezensis* strain FZB45 mobilises phosphorus in the root zone. In exchange for sugars and other organic molecules from the plant, the bacterium forms citric and gluconic acid which solubilises phosphorus in the immediate area around the root. The bacteria also produce phosphatase enzymes which mineralises phosphorus. In addition to phosphorus, the bacteria also produce siderophores which chelate micronutrients, especially iron, to make them plant available.

Trial 1 - Maize

Impact of **P45 RhizoVital® FL** on growth parameters and yield of maize.



Applications:

P45 RhizoVital® FL was applied at 0.5 and 1 ml/kg seed before planting.

Evaluations:

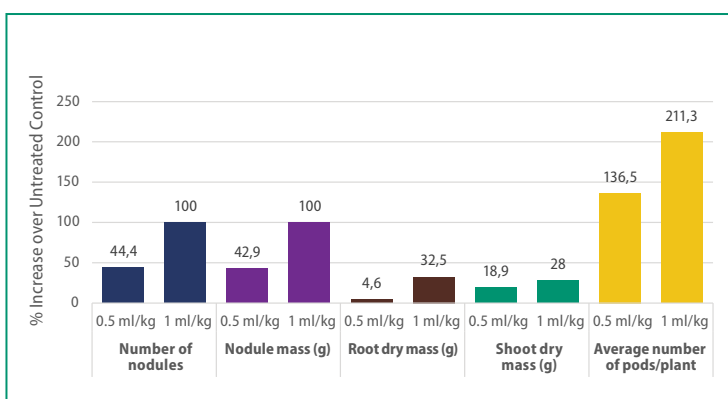
Dry shoot mass and dry root mass was measured 40 days after emergence. Yield and 1000 seed weight was calculated at harvest. Harvested seed was dried and moisture content determined in order to calculate harvest data.

Summary:

Both rates of **P45 RhizoVital® FL** seed treatments achieved an increase in all growth parameters measured when compared with the untreated control.

Trial 2 - Soybean

Impact of **P45 RhizoVital® FL** on growth parameters and yield of soybean.



Applications:

P45 RhizoVital® FL was applied at 0.5 and 1 ml/kg seed before planting.

Evaluations:

Number of nodules, nodule mass, dry shoot mass and dry root mass was measured 40 days after emergence. The average number of pods per plant was also established at harvest.

Summary:

Both rates of **P45 RhizoVital® FL** seed treatments achieved an increase in all growth parameters measured when compared with the untreated control. The number of pods per plant is significantly increased at both rates of **P45 RhizoVital® FL**.





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Plant Vitality



P45 RhizoVital® FL has been specifically selected for increased phytase production, favouring phosphorus mobilisation. This results in **P45 RhizoVital® FL** helping the plant to build more and stronger roots and to improve its tolerance towards abiotic stress, such as water deficiency, salinity, etc. Consequently, application of **P45 RhizoVital® FL** can result in increased plant growth and higher yields. **P45 RhizoVital® FL** is your insurance to overcome and cope better with unfavourable conditions and therefore has to be applied as early as possible.

Application instructions:

Crop	Method	Rate	Remarks
Row crops: grain (Maize, sweet corn, sorghum, millet)	Seed application	0.5 - 1 ml/kg seed	Apply directly to seed prior to planting diluted in sufficient water to evenly coat seed. Allow seed to dry well before planting or storage.
Potato	In furrow or drench	100 - 400 ml/ha	Apply in furrow at planting or as a drench immediately after planting.
Legume crop: (Dry bean, green bean, soybean, lentils, lupins, clover, alfalfa, lentils, peanut)	Seed application	0.5 - 1 ml/kg seed	Apply directly to seed prior to planting diluted in sufficient water to evenly coat seed. Allow seed to dry well before planting or storage.

Available in packs: 40 ml, 500 ml, 1 L, 5 L, 20 L

Manufactured by:



Andermatt
Madumbi

Healthy Food and Healthy Environment, for all

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