Andermatt
Madumbi

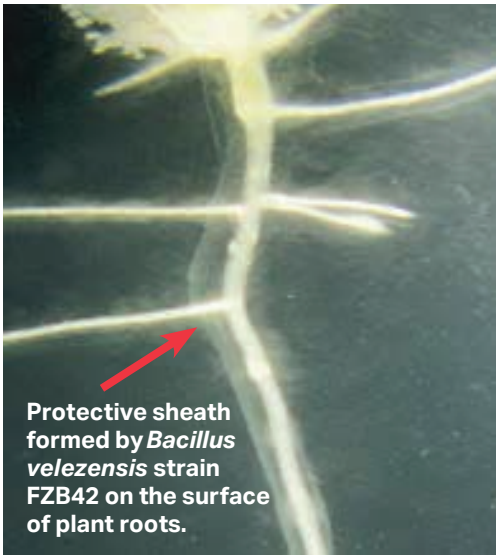
Biological Solutions

Plant Vitality

RhizoVital® 42

Reg. No. M509, Act 36 of 1947

Root Health | Plant Vitality | Bio Crop Protection



Protective sheath formed by *Bacillus velezensis* strain FZB42 on the surface of plant roots.

RhizoVital®42

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A concentrated liquid formulation of the bacteria *Bacillus velezensis* strain FZB42, a non-pathogenic microorganism occurring naturally in the soil.

The symbiotic soil bacteria stimulate and protect plant roots, resulting in larger, healthier plants.

Why use RhizoVital®42?

Features	Benefits
Root growth stimulation.	Improves general root health and development.
	Increases plant vigour and vitality.
	Aids mobilisation and absorption of soil nutrients, notably phosphate, zinc and manganese.
Root colonisation.	Insurance against root disease.
Induced Systemic Resistance (ISR).	Reduces disease intensity and frequency when used as a preventative measure.
Easy to use.	Versatile application strategies. Compatible with most crop protection products and fertilisers.
Highly concentrated liquid formulation.	Cost effective solution with economical application rates.
One of the most thoroughly researched bacterial products available in South Africa.	Proven history of performance and efficacy.
Effective on a wide range of crops.	Ideal for use as part of an IPM strategy.
Non-toxic, non-GMO and no withholding period.	Suitable for use in organic agriculture.

How does RhizoVital®42 work?

Bacillus velezensis forms a close symbiotic relationship with plant roots. It quickly colonises the root system, forming a protective sheath making it difficult for root pathogens to penetrate. It produces plant benficial exudates, 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).

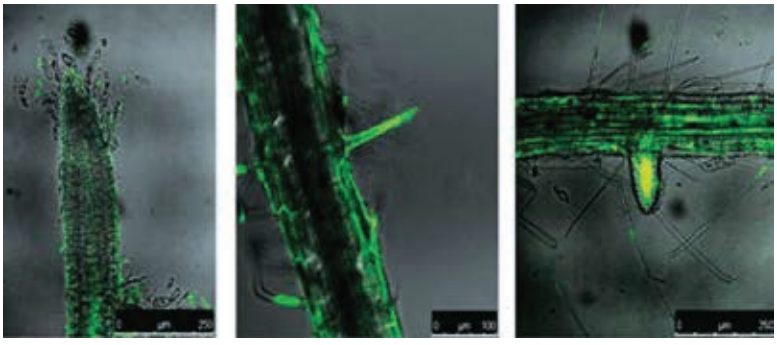


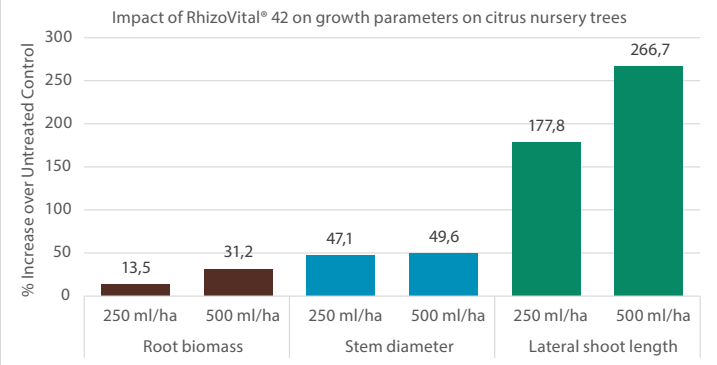
Image above: Colonisation of Arabidopsis roots by *Bacillus velezensis* strain FZB42 illuminated under flourescense microscopy. Root growth tips, root hair and lateral roots are colonised by *B. velezensis* strain FZB42.

Trial data:

Trial 1 - Citrus

Impact of RhizoVital®42 on growth parameters on citrus nursery trees

Cultivar: Eureka Lemon



Applications: RhizoVital® 42 was applied at 250 and 500 ml/ha as a drench twice throughout the trial period, starting in September and repeated 30 days later.

Evaluations:

Root biomass: The mean weight of the roots was calculated and subjected to statistical analysis to determine if there were any significant differences in fresh root biomass between all the applications.

Shoot length: A total of 5 side shoots were selected at the highest end of the canopy was marked per plot for each Application. The total length of the marked shoots were measured and recorded 28 days after the first application and again 35 days after the second application.

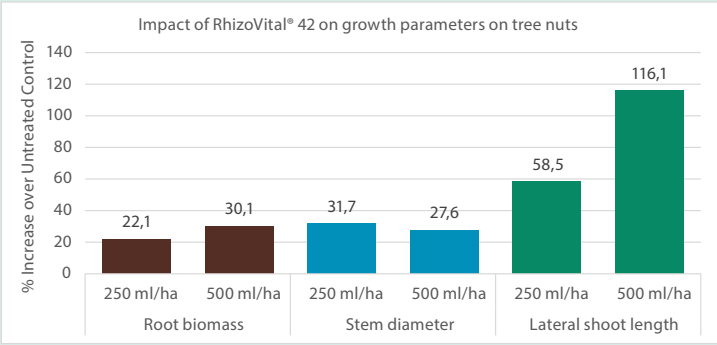
Stem diameter: The diameter of the primary stem of each tree per plot was measured 5 cm above soil level. Trees were measured prior to each application and 35 days after the final application.

Summary: Both rates of RhizoVital® 42 achieved an increase in all growth parameters measured when compared with the untreated control.

Trial 2 - Tree nuts

Impact of Impact of RhizoVital®42 on growth parameters on macadamia nursery trees

Cultivar: Beaumont



Applications: RhizoVital® 42 was applied at 250 and 500 ml/ha as a drench twice throughout the trial period, starting in September and repeated 30 days later.

Evaluations:

Root biomass: The mean weight of the roots was calculated and subjected to statistical analysis to determine if there were any significant differences in fresh root biomass between all the applications.

Shoot length: A total of 5 leaf rosettes were selected at the highest end of the canopy was marked per plot for each Application. The total length of the marked rosettes were measured and recorded 28 days after the first application and again 35 days after the second application.

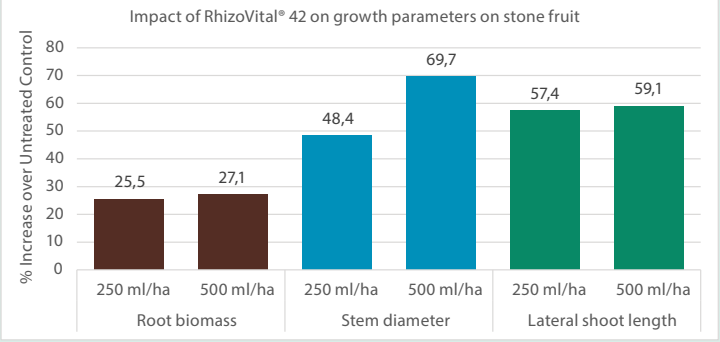
Stem diameter: The diameter of the primary stem of each tree per plot was measured 5 cm above soil level. Trees were measured prior to each application and 35 days after the final application.

Summary: Both rates of RhizoVital® 42 achieved an increase in all growth parameters measured when compared with the untreated control.

Trial 3 - Stone fruit

Impact of RhizoVital®42 on growth parameters on Harrington's Plum nursery trees

Cultivar: Harry Pickstone



Applications: RhizoVital® 42 was applied at 250 and 500 ml/ha as a drench twice throughout the trial period, starting in September and repeated 30 days later.

Evaluations:

Root biomass: The mean weight of the roots was calculated and subjected to statistical analysis to determine if there were any significant differences in fresh root biomass between all the applications.

Shoot length: A total of 5 side shoots were selected at the highest end of the canopy was marked per plot for each Application. The total length of the marked shoots were measured and recorded 28 days after the first application and again 35 days after the second application.

Stem diameter: The diameter of the primary stem of each tree per plot was measured 5 cm above the graft union. Trees were measured prior to each application and 35 days after the final application.

Summary: Both rates of RhizoVital® 42 achieved an increase in all growth parameters measured when compared with the untreated control.

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Plant Vitality

RhizoVital®$_{42}$ stimulates the root system through nutrient mobilisation, favouring growth of strong and stress tolerant plants. The use of RhizoVital®$_{42}$ is most efficient when applied as early as possible during root and plant development. RhizoVital®$_{42}$ is part of any optimal production strategy.

Application instructions:

Crop	Method	Rate	Remarks
Tree crops (Orange, lemon, mandarin)	Drench application	250 - 500 ml/ha	1st application: Prior to leaf and/or lateral shoot flush. 2nd application: 30 days later.
Tree crop: Nut (Macadamia, pecan, hazelnut)	Drench application	250 - 500 ml/ha	1st application: Prior to leaf and/or lateral shoot flush. 2nd application: 30 days later.
Tree crop: Stone fruit (Apricot, nectarine, peach, plum)	Drench application	250 - 500 ml/ha	1st application: Prior to leaf and/or lateral shoot flush. 2nd application: 30 days later.

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

Manufactured by:

ABiTEP

Andermatt Madumbi

Healthy Food and Healthy Environment, for all

T: +27 (0) 33 342 3984
E: support@andermatt.co.za
W: www.andermatt.co.za
Andermatt Madumbi App

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