



Biostimulant Solutions

PRODUCT RANGE OVERVIEW



Andermatt
Madumbi

Biostimulant definition

“ Biostimulants can assist growers to ‘produce more with less’. Biostimulants target specific natural growth processes within plants. Increasing or decreasing these specific functions unlocks more significant potential for growth, yield, quality, stress tolerance and more. ”

– **Dr Brendon Neumann,**
Andermatt Madumbi Business Innovations lead



Biostimulant solutions

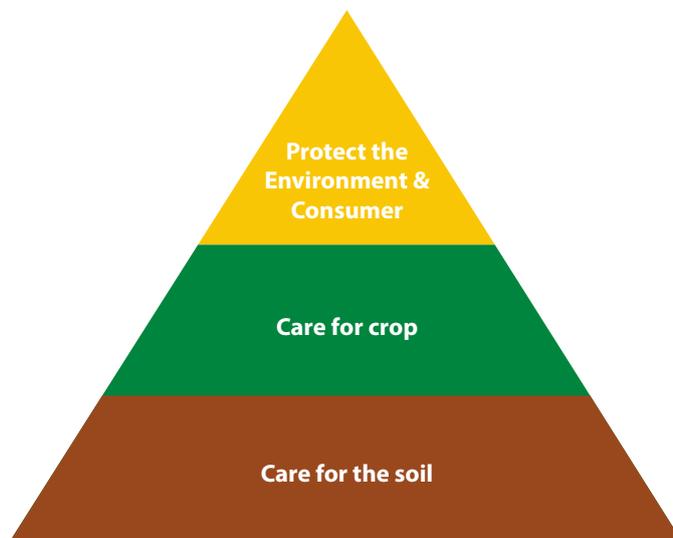
On a global level, the biostimulant sector is one of the fastest-growing agricultural sectors as growers look for new ways to 'grow more with less'. The demand for food production is increasing with a growing global population. At the same time, resources in the form of arable land, quality water supply, etc. are limited.

On a local level, the South African authorities have recognised the importance of this sector through the establishment of the group 3 (biostimulant) fertiliser registrations. The requirements of the group 3 registrations are more stringent, costly and time-consuming than conventional synthetic fertilisers. As a result of these requirements, future products entering the South African market will be adequately backed by science.

Soil and Root Health

At Andermatt Madumbi, we view soil and root health as the foundation of sustainable agriculture.

Soil and root health are essential for the production of healthy, nutrient-dense food, healthy people, animals and the environment. Soil is a living eco-system which, together with a healthy root system, results in stronger plants which are naturally more resistant to various pests and disease.



Andermatt Madumbi Sustainability Pyramid

Andermatt Madumbi Biostimulant solutions



The **Biostimulant** range contains natural plant growth stimulants, often in combination with holistic nutritional supplementation. This is to improve the overall health of the crop, build stress tolerance, support and stimulate various stages of plant growth.



AgriSil K50®

Strengthens plant cells and improves tolerance to biotic and abiotic stress.

B3756	Available in: 450 ml, 1 L, 5 L, 20 L and 1000 L	Fully soluble, liquid formulation Potassium silicate designed for agricultural use. The ultimate silica supplement to aid in building plant stress and disease tolerance.
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BioCarb-K®

Efficient, plant available potassium for chloride-free nutritional support.

K9558	Available in: 1 kg, 5 kg and 25 kg	Potassium supplement in a chloride free formulation to support potassium fertilisation of all crops, but especially crops sensitive to chloride.
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Fulvic Acid®

A natural chelator (improves the availability of nutrients 'locked up' in the soil).

B4796	Available in: 25 kg	Concentrated, high quality extracts of Fulvic Acid, a natural chelator, plant growth regulator and detoxifying agent. For use as an additive to foliar applications as a natural chelator and growth promoter.
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Humate Crystals, Granules and Liquid®

Carbon based soil conditioner, 'feeds' the soil as well as the microorganisms it contains.

B4797 B4946	Available in: 600 g, 5 kg, 25 kg, 20 L and 1000 L	Concentrated, high quality extracts of Humic Acid sourced from ancient Leonardite deposits. An essential soil conditioner and nutrient stabiliser for use with synthetic fertilisers. Available in a highly concentrated granule and liquid formulation.
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MycoUp Active®

A biological fertiliser containing active mycorrhizal fungi to support enhanced root growth.

M0010	Available in: 200 g and 1 kg	A biological fertiliser containing active mycorrhizal fungi to support healthy root development.
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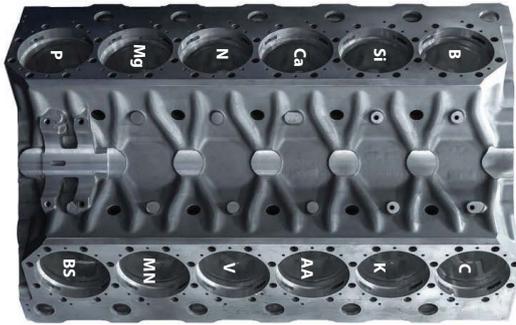
RhizoVital®

Liquid formulation of beneficial bacteria to colonise the root and enhance root development.

B4201	Available in: 40 ml and 500 ml	Highly concentrated liquid formulation of the beneficial bacteria <i>Bacillus amyloliquefaciens</i> . Designed for inoculation into the root zone, aiding with mobilisation of nutrients and supporting healthy root growth.
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V12 Biostimulant range

The V12 Biostimulant range is based on the 12 essential components of plant vitality, ie. the **engine** that drives plant growth.



8 KEY ELEMENTS

1. Boron
2. Silicon
3. Calcium
4. Nitrogen
5. Magnesium
6. Phosphorous
7. Carbon
8. Potassium

4 KEY ELEMENTS

9. Amino Acids
10. Vitamins
11. Micronutrients
12. Biostimulants

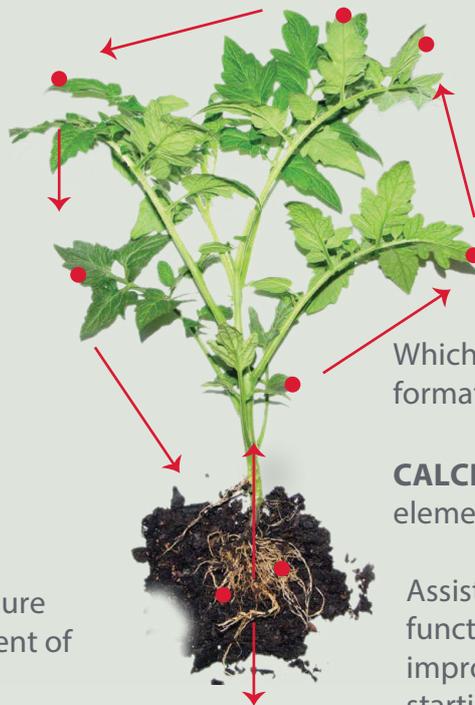
The Plant Nutrition Cycle - 8 Key elements

ATP drives production of sugars from **CARBON** based building blocks

POTASSIUM is the electrolyte that drives the transport of sugars through the plant and creates the mechanism by which all nutrients are able to enter the plant cells

BORON – Creates the sap pressure that drives uptake and movement of all nutrients.

Highly productive plants will shed nutritious sap into the rhizosphere to feed the Microbial Food Web which will drive further release of minerals from the soil for uptake by the plant.



Captured light is transformed with **PHOSPHORUS** into ATP, the plant's energy currency

Amino Acids form Chlorophyll which is activated by **MAGNESIUM** to drive light capture and photosynthesis

Which requires **NITROGEN** for formation of new DNA, Amino Acids etc.

CALCIUM which drives the uptake of other elements and is essential for cell division

Assisted by **SILICA** which creates a well functioning transport system for improved uptake of water & nutrients, starting with ...

The Plant Nutrition Cycle - 4 Key Drivers

AMINO ACIDS are involved in plant stress physiology and can help plants to better tolerate/recover from stress conditions.

VITAMINS: Vitamin C contains antioxidant properties which reduce damage from free radicles and play a role in regulating cell division. Vitamin B1 improves photosynthetic efficiency, root growth and stimulates Induced Systemic Resistance (ISR).

MICRONUTRIENTS perform unique and key functions in plant metabolism (Zn, Mn, Co, Fe etc.)

BIOSTIMULANTS play a role in stimulating a range of plant processes and improving plant efficiency.



V12 Initiate®

Supports and optimises the initial plant growth phases, germination or bud burst.

B4513	Available in: 450 ml, 1 kg, 5 kg, 30 kg and 1300 kg	Specially formulated nutritional support for early growth phases and maintenance of healthy plants
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V12 Shoot®

Supports and optimises the vegetative growth phase.

B4510	Available in: 1 L, 5 L and 20 L	A unique blend of minerals, amino acids, vitamins and natural plant growth stimulants (e.g. kelp and Triaccontanol)
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V12 Fruit®

Supports and optimises flowering and fruiting.

B4511	Available in: 1 L, 5 L and 20 L	A unique formulation of Boron, amino acids, vitamins and natural plant growth stimulants (e.g. kelp and brassinolide).
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V12 Finish®

Supports the crop during the final stages of reproductive growth fruit fill and ripening.

K9557	Available in: 1 L, 5 L and 20 L	Plant nutrition containing a unique blend of specific minerals and amino acids.
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V12 Multi®

The all-in-one vitality package and excellent stress tonic for plants under high nutritional demand.

B4512	Available in: 200 g and 1 kg	Incorporates a full spectrum of amino acid chelated nutritional elements, from A - Zinc.
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V12 Micro®

Supports crops and growth stages with high calcium demand.

B3756	Available in: 450 ml, 1 L, 5 L, 20 L and 1000 L	Plant nutrition loaded with amino acid chelated micronutrients.
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V12 Maxi Ca®

Supports fast and effective handling of potential micro nutrient deficiencies.

B5025	Available in: 20 L	Plant nutrition tailored to supply high levels of Calcium and it's synergist Boron.
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V1 Maxi K®

Supports crops and growth stages with high potassium demand.

K9877	Available in: 20 L	Liquid formulation containing high levels of potassium balanced with a range of micronutrients.
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At Madumbi, we combine niche products and proven management strategies to produce the best outcome in terms of healthy, high yielding, nutrient-dense, low residue crops.

Our regional team of biospecialists are constantly refining programs to ensure Madumbi remains at the forefront of new developments to best assist all growers.

Biostimulants in summary

Product	Macro Biostimulants			Micro Biostimulants		Amino Acids							Vitamins				
	Kelp	Fulvic Acid	Protein Hydrolysate	Triacantanol	Brassinolide	TRP	GLY	GLU	PRO	LYS	MET	ARG	C	E	B1	B6 +12	K Ligno-sulphanate
V ¹² Initiate®	✓	✓	✓														✓
V ¹² Shoot®	✓		✓	✓			✓	✓					✓		✓		
V ¹² Fruit®	✓		✓		✓				✓	✓	✓						
V ¹² Finish®	✓		✓				✓					✓					
V ¹² Multi®	✓	✓	✓	✓										✓	✓	✓	
V ¹² Micro®	✓	✓	✓														

Product	Macro and micro elements (g/L)												
	N	P	K	S	Ca	Mg	Mn	Z	Fe	Si	Cu	Mo	Bo
V ¹² Initiate®			3,718	82,979	97,24	2,2932	23,864	30,1	4,3199	90,61	0,2886	0,0533	5,256
V ¹² Shoot®	12			38,328		12,936	6,8904		28,8			5,424	
V ¹² Fruit®	9,592			3,161									22,35
V ¹² Finish®	8,46	126,9	284,82										
V ¹² Multi®	97,63	103,896	120,198	4,836		0,4459	0,4524	0,694	2,2256		2,2275	0,0507	0,328
V ¹² Micro®	13,992		18,144	42,72		8,232	14,243	16,84	36,493		4,89	0,8892	7,56

All Madumbi products are registered under Act 36 of 1947. AgriSil K50®, Reg. No. B3756 registered by PQ Silicas South Africa (Pty) Ltd. Madumbi Fulvic Acid Powder Reg. No. B4796; BioCarb-K® Reg. No. K9558, Madumbi Humate Liquid Reg. No. B4946; Madumbi Humate Crystal Reg. No. B4797; MycoUp Active®, Reg. No. M0010, RhizoVital® 42 Reg. No. B4201, V12 Initiate® Reg. No. B4513; V12 Multi® No. B4512; V12 Micro® Reg. No. B4514; V12 Shoot® Reg. No. B4510, V12 Fruit® No. B4511, V12 Finish® Reg. No. K9557; V12 Maxi K® Reg. No. K9877; Maxi-Ca® - B5025, - Madumbi Sustainable Agriculture (Pty) Ltd

