

EXPERTS FOR GROWTH



# Liquid Fertilizers for Sports Turf Vitality



**Vitania**®

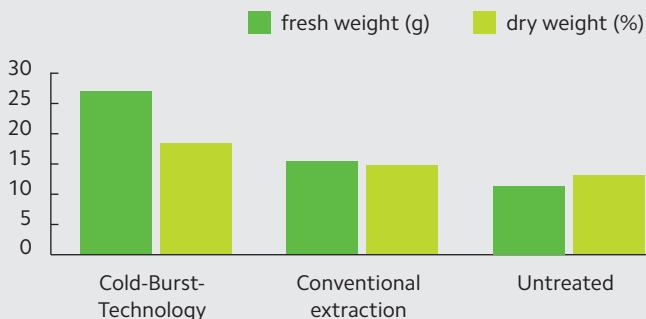


## General aspects

- All Vitanica® products are based on extracts from kelp seaweed (*Ecklonia maxima*).
- *Ecklonia maxima* is sustainably harvested from the shores of South Africa; it is carefully cold-pressed using "Cold-Cellular-Burst-Technology" which preserves the integrity of the phytoactive substances (chemical and thermal extraction methods are known to denature many important constituents).
- These phytoactive substances have a biostimulational effect on the growth, colour and vigour of the roots and the sward.
- Turf vitality and tolerance to abiotic stress such as heat, drought, wear and mowing are increased.



**Effect of cold-pressed *Ecklonia maxima* and conventionally extracted seaweed on perennial ryegrass yield**



Dr. A. Hunter, Belfast University, 2009, Lolium perenne trial

## Impact of Vitanica® P<sup>3</sup> on greens quality

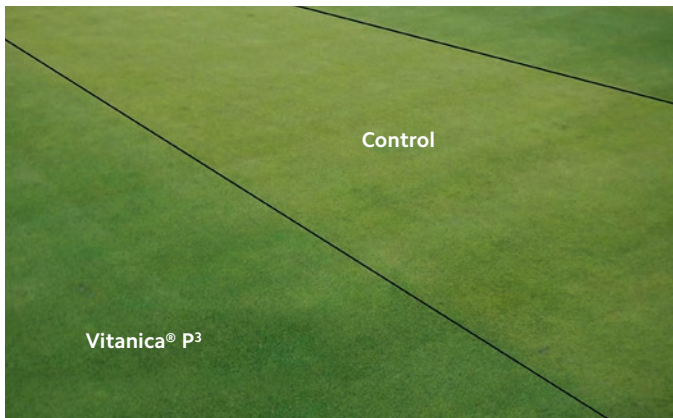


Photo: Dr. Fritz Lord, COMPO EXPERT

### Phytohormones:

Auxin is the most important plant hormone and is involved in almost all hormone actions.

- Cell enlargement
- Root initiation
- Vegetative growth

*Ecklonia maxima* is extremely high in auxins and has one of the highest Auxin / Cytokinin ratios of all existing plants.

Cytokinin is an anti stress hormone and also protects plants against degenerative processes.

### Constantly high quality:

Plant hormones have a signal effect and therefore standardization is the key for consistent and predictable results.

The free auxin content in each batch is based on correct auxin (IAA) analysis in the concentrate.

## Liquid fertilizer programme

### Portfolio

Product	NPK formula	Specific application target
Vitanica® MC	11-3-7 and copper (Cu), iron (Fe) and manganese (Mn)	Trace element supply
Vitanica® P <sup>3</sup>	5-0-10 and phospite	Crop resistance
Vitanica® Si	5-3-7 and silicon	Preparation of fine tournament golf greens
Vitanica® RZ	5-0-5 and <i>Bacillus amyloliquefaciens</i>	Root stimulation and healthy soil biology

#### Vitanica® MC

11 % N	Total nitrogen
1.5 %	Nitric nitrogen (NO <sub>3</sub> -N)
9.5 %	Ureic nitrogen (NH <sub>2</sub> -N)
3 % P <sub>2</sub> O <sub>5</sub>	Phosphate, water-soluble
7 % K <sub>2</sub> O	Potassium oxide, water-soluble
0.050 % Cu	Copper, water-soluble*
0.100 % Fe	Iron, water-soluble*
0.500 % Mn	Manganese, water-soluble*

\* fully chelated by EDTA

Application rate: 10–30 l/ha in 600–800 l water

- Vitanica® for “nutrition and greening up”
- Organo-mineral NPK fertilizer with trace elements
- Includes kelp extract
- Improves colour, vigour and health of turf



#### Vitanica® P<sup>3</sup>

5 % N	Total nitrogen
5.0 %	Ureic nitrogen (NH <sub>2</sub> -N)
10 % K <sub>2</sub> O	Potassium oxide, water-soluble
0.010 % B	Boron, water-soluble
0.003 % Cu	Copper, water-soluble*
0.020 % Fe	Iron, water-soluble*
0.010 % Mn	Manganese, water-soluble*
0.001 % Mo	Molybdenum, water-soluble
0.002 % Zn	Zinc, water-soluble*

\* fully chelated by EDTA

Application rate: 10–30 l/ha in 600–800 l water

- Vitanica® for “stress tolerance and resistance”
- Organo-mineral NK fertilizer with trace elements
- Includes kelp extract
- Increased resistance



Vitanica® P<sup>3</sup> stimulates root growth, left: treated, right: untreated (Prof. Gert Bischoff; University of Applied Science Erfurt)

## Vitanica® Si

5 % N Total nitrogen  
 5.0% Ureic nitrogen (NH<sub>2</sub>-N)  
 3 % P<sub>2</sub>O<sub>5</sub> Phosphate, water-soluble  
 7 % K<sub>2</sub>O Potassium oxide, water-soluble  
 Silicate concentration: 10 % SiO<sub>3</sub>



Application rate: 10–20 l/ha in 600–800 l water

- Vitanica® for “cell wall fortification”
- Organic-mineral NPK fertilizer with silicate and kelp extract
- Silicate to strengthen the cell structures
- Increase of plant tolerance against heat stress
- Improved trueness and speed of golf greens
- Increase of photosynthetic activity

## Vitanica® RZ

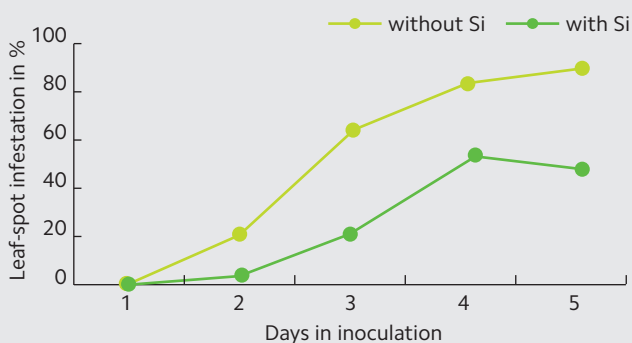
5 % N Total nitrogen  
 1.5 % Nitric nitrogen (NO<sub>3</sub>-N)  
 3.5 % Ureic nitrogen (NH<sub>2</sub>-N)  
 5 % K<sub>2</sub>O Potassium oxide, water-soluble



Application rate: 20 l/ha in 600–800 l water, ideally followed by 3 mm of irrigation

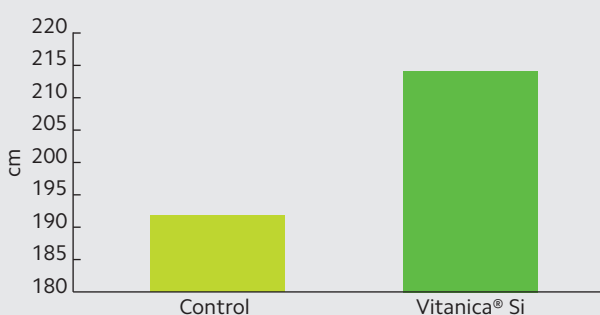
- Vitanica® for “vitalization and rooting”
- Organic-mineral NK fertilizer with *Bacillus amyloliquefaciens*, selection R6-CDX® and kelp extract
- Bacillus is promoting healthy germination and root growth
- Application in well aerated soil and at temp > +12 °C
- Also effective in new sowings and overseedings

### Influence of silicon on leaf-spot disease (*Bipolaris cynodontis*).



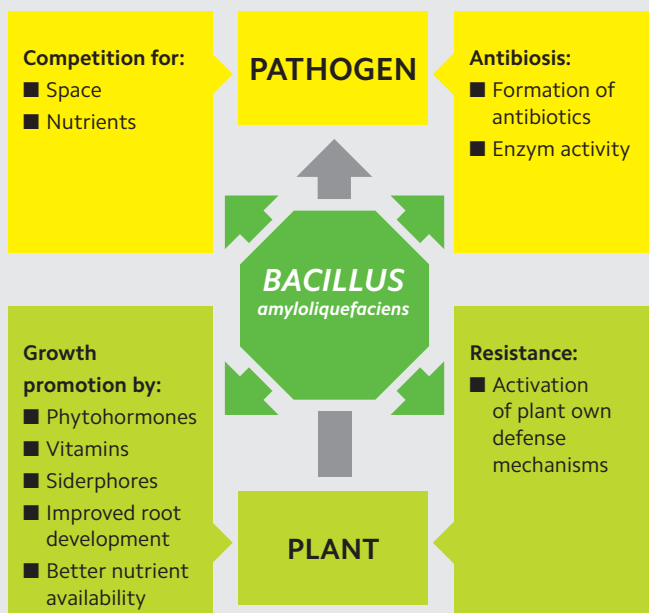
Datnoff and Rutherford

### Impact of silicon on green speed stimpeter measurement on bentgrass / festuca green (4.5 mm)



COMPO EXPERT R&D Center, 2013

### Effect of *Bacillus amyloliquefaciens*



Graph: Dr. Fritz Lord, COMPO EXPERT



## Recommendation for application

- The Vitanica® products perform best in preventive applications.
- For best results, applications should be made above +10 °C and in well aerated soil.
- Irrigation 3 to 4 hours after application facilitates transport of bacteria into the rooting zone.
- All Vitanica® products perfectly supplement the general fertilizer programme.

### Recommendations for mixed applications in turf grass

	Vitanica® MC	Vitanica® P <sup>3</sup>	Vitanica® Si	Vitanica® RZ
Vitality / colour	10 l/ha	20 l/ha		10 l/ha
Crop resistance	10 l/ha	30 l/ha		
Heat / stress tolerance		10 l/ha	20 l/ha	
Turf health / vigour		10 l/ha		20 l/ha

- Recommended application volume with 800 l/ha of water.
- Addition of KICK® Wetting Agent is possible (2.5–5 l/ha) for a better sward penetration in dry conditions.
- Combination of all Vitanica® products with Basfoliar® Ferro Top® SL is possible for additional colour and growth improvement.



## Vitanica® product range

	Product	Composition	Characteristics	Packaging	Application rates*
	Vitanica® MC	11% N 1.5% NO <sub>3</sub> -N 9.5% NH <sub>2</sub> -N 3% P <sub>2</sub> O <sub>5</sub> 7% K <sub>2</sub> O 0.050% Cu* 0.100% Fe* 0.500% Mn*  * fully chelated by EDTA	<b>"Nutrition and greening up"</b>  Combined liquid mineral NPK fertilizer with kelp extracts  For the foliar fertilization of high quality turf grass, also suitable for fertilization of trees and shrubs	Canister: 10l	10–30l/ha in 600–800l water/ha
	Vitanica® P <sup>3</sup>	5% N 5.0% NH <sub>2</sub> -N 10% K <sub>2</sub> O 0.010% B 0.003% Cu* 0.020% Fe* 0.010% Mn* 0.001% Mo 0.002% Zn*  * fully chelated by EDTA	<b>"Stress tolerance and resistance"</b>  Combined liquid mineral NK fertilizer with kelp extracts  For the foliar fertilization of high quality turf grass, also suitable for fertilization of trees and shrubs	Canister: 10l	10–30l/ha in 600–800l water/ha
	Vitanica® Si	5% N 5.0% NH <sub>2</sub> -N 3% P <sub>2</sub> O <sub>5</sub> 7% K <sub>2</sub> O 10% SiO <sub>3</sub>	<b>"Cell wall fortification"</b>  Combined liquid mineral NPK fertilizer with silicate and kelp extracts for revitalization and strengthening of the plants  For the foliar fertilization of high quality turf grass, also suitable for fertilization of trees and shrubs	Canister: 10l	10–20l/ha in 600–800l water/ha
	Vitanica® RZ	5% N 1.5% NO <sub>3</sub> -N 3.5% NH <sub>2</sub> -N 5% K <sub>2</sub> O	<b>"Vitalization and rooting"</b>  Combined liquid mineral NK fertilizer with the effective rhizosphere bacterium <i>Bacillus amyloliquefaciens</i> , selection R6-CDX® and kelp extracts for revitalization and strengthening of the plants  For the fertilization of high quality turf grass, also suitable for fertilization of trees and shrubs	Canister: 10l	20l/ha in 600–800l water/ha

\* For detailed recommendations please contact your local COMPO EXPERT dealer / agent.