



Improving efficiency of African agriculture with data driven decisions and intelligent products

FRESHBugs Quorum

**Collectively
co-ordinating
soil health**

Microbial Crop Yield Enhancement

OVERVIEW

FRESHBUGS Quorum contains a concentrated (minimum 10^9 CFUs/ml) blend of Chemotrophic, Autotrophic, Heterotrophic and Photoautotrophic bacteria that contribute towards a wide variety of biological functions to support plant growth.

FRESHBUGS Quorum plant growth support functions include:

- Phosphate solubilization
- Iron transport
- Plant growth promoting hormones
- Root development
- Drought, heat and stress tolerance
- Nitrogen fixation
- Increased soil organic carbon
- Induced systemic resistance to pests and pathogens

Increased plant growth support results in:

- Yield increases of up to 50%
- Lower fertilizer and nutrient inputs
- Healthier plants with increased disease and parasite resistance
- Increased sugar and nutrient content
- Decreased nutrient loss

FRESHBUGS QUORUM CASE STUDIES

10 day results



CONTROL



FRESHBUGS



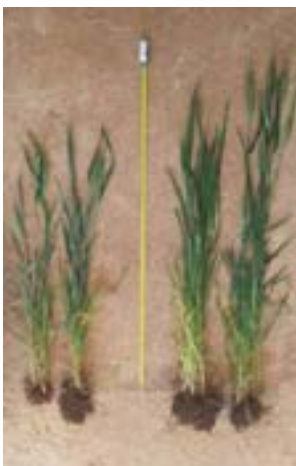
CONTROL

1x TREATMENT



CASE STUDY: **WHEAT**

- Better bio-mass (roots + leaves)
- Yield increase
- More microbial aggregates
- Faster germination
- 1 ton yield increase at pivot in Rustenburg
- 8.7 T/hectare on 1x dosing compared to control @7.7 T/hectare
- Wheat selling @R4000 p/ton
- Input R500
- Extra profit R3500 p/ton



CASE STUDY: **POTATOES**

30% yield increase • Healthier plants • More drought resistant



BEFORE

AFTER



FRESHBUGS QUORUM DOSAGE RESULTS (NB! 20% YIELD INCREASE)

13 bags large • 2 bags medium • 1 bag small • 1/2 bag waste



CONTROL DOSAGE RESULTS

6 bags large • 6 bags medium • 2 bags small • 1 bag waste

CONSTITUTIVE ORGANISMS & THEIR CLASSIFICATIONS

BACTERIAL GROUP	GENUS & SPECIES
<u>Purple Bacteria (non-sulfur)</u>	Rhodopseudomonas viridis Rhodopseudomonas palustris Rhodospirillum molisch Rhodospirillum fulvum Rhodospirillum centenum Rhodospirillum rubrum Rhodobacter sphaeroides
<u>Purple Sulfur Bacteria</u>	Thiobacillus novellus Thiobacillus thiooxidans Thiobacillus denitrificans Thiobacillus thioparus
<u>Pseudomonas</u>	Pseudomonas fluorescens Pseudomonas citronellolis Pseudomonas stutzeri Pseudomonas putida Pseudomonas syringae
<u>Alcaligenes</u>	Alcaligenes denitrificans
<u>Citrobacter</u>	Citrobacter freundii Citrobacter braakii
<u>Flavobacterium</u>	Flavobacter aquatile Flavobacter oceanosedimentum
<u>Nitrobacter</u>	Nitrobacter winogradski Nitrobacter alcalicus Nitrobacter sp. Nb 107
<u>Nitrosomonas</u>	Nitrosomonas europaea
<u>Nitrococcus</u>	Nitrococcus mobilis
<u>Comamonas</u>	Comamonas testosteroni
<u>Bacillus</u>	Bacillus macerans Bacillus subtilis Bacillus licheniformis Bacillus polymyxa
<u>Saccharomyces</u>	Saccharomyces cerevisiae

DIRECTIONS FOR USE:

CROP	ON SEED OR AT GERMINATION OR SMALL TREES	NOTES	POST GERMINATION	WHEN	NOTES
<u>Tobacco</u>	2ml per square meter on seedbeds and plant out beds (250ml in a 10l watering can)	Apply in the evenings on moist soil	10-20l per ha	Best when plants are young or after a stress phase or harsh chemical application	Apply in the evenings preferably on cloudy or moist days
<u>Soya and Other Legumes</u>	5l per ha if dribbled on the row at planting or 10l per ha	Via Irrigation or spray rig or dribble on the row	10-20l per ha	Best when plants are young or after a stress phase or harsh chemical application	Apply in the evenings preferably on cloudy or moist days
<u>Maize and Wheat</u>	5l per ha if dribbled on the row at planting or 10l per ha	Via Irrigation or spray rig or dribble on the row	10-20l per ha	Best when plants are young or after a stress phase or harsh chemical application	Apply in the evenings preferably on cloudy or moist days
<u>Potatoes</u>	5l per ha if dribbled on the row at planting or 10l per ha	Via Irrigation or spray rig or dribble on the row	10-20l per ha	Best when plants are young or after a stress phase or harsh chemical application	Apply in the evenings preferably on cloudy or moist days
<u>Macadamias Avos and Sub-Tropical Crops</u>	5-10l per ha at planting and or in spring	Via Irrigation or hand applied at the base of the tree.	5-20l per ha	On young trees where less soil is treated apply less product	Apply in the evenings preferably on cloudy or moist days
<u>Deciduous Fruits and Nuts</u>	5-10l per ha at planting and or in spring	Via Irrigation or hand applied at the base of the tree	5-20l per ha	On young trees where less soil is treated apply less product at the base of the tree or in the drip zone	Apply in the evenings preferably on cloudy or moist days
<u>Tomatoes and Vegetables</u>	10l to 20l per ha or treat the seedlings before planting out with a 2.5% drench	Via Irrigation or spray rig or dribble on the row	10-20l per ha	On young plants where less soil is treated apply less product at the base of the plant	Apply in the evenings preferably on cloudy or moist days

In general, the closer to growing roots the product can be applied, the better, and the lower the rate required.

Note: This product cannot be added to herbicides and pesticides or chemicals/fertilizers with a high salt index. If added to diluted fertilizers it should not be left to stand or left in the sun.

GET IN TOUCH

 www.freshnutrients.org



**FRESH
NUTRIENTS**

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