



GROGREEN
FIVE



**High NPK formulation with Calcium,
Magnesium and trace elements**

GROGREEN FIVE RANGE



The GROGREEN FIVE product line is the first of its kind, combining high levels of NPK with calcium, magnesium and all needed trace elements. These gel products are a state of the art solution for drip irrigation, combining 3 different applications in one: supply of macronutrients (N-P-K), supply of calcium & magnesium and acidification of the soil.

Providing acidity to neutralize and dissolve bicarbonates, avoiding clogging of drippers and releasing unattainable nutrients for the plant. The unique composition makes it the number one solution for soils that suffer from alkalinity and salinity.

The FIVE product range provides a complete plant nutrition program throughout the growth cycle. FIVE is available in different NPK ratios to meet the plant needs at different crop stages.

Why use GROGREEN FIVE



Low pH. Neutralises Alkaline/Saline soils

Increases soil nutrient availability by reducing excess of alkalinity.
Reduces water pH even when applied directly to hard water.



Anti-clogging action

Helps to prevent precipitates by neutralizing and dissolving bicarbonates, which aids in keeping irrigation systems clean.



Efficiency improving yields and quality

Increases and improves the uptake of all nutrients.



FIVE nutrients

Most used soluble N-P-K fertiliser ratio, now with Ca, Mg and chelated micronutrients.

FIVE TERRA

pH
2.6

12-44-12 + 6 CaO + 3 MgO + TE



Packing size 200g, 1kg, 5kg

- High phosphorous formula with high levels of calcium and magnesium with trace elements.
- 100% water soluble without any precipitations or sediments.
- Low pH increasing soil nutrient availability.
- Designed for use during root development and flower initiation stages

Specifications	Density: +/- 1.6 kg/liter	
	W/W	W/V
Total nitrogen (N)	7.40 %	12.00 %
Nitric nitrogen (N-NO ₃)	3.60 %	5.90 %
Urea nitrogen (N-NH ₂)	3.80 %	6.10 %
Total Phosphorus pentoxide (P ₂ O ₅)	27.00 %	44.00%
Phosphorus pentoxide (P ₂ O ₅), soluble in water	27.00 %	44.00%
Phosphorus pentoxide (P ₂ O ₅), soluble in water and neutral ammonium citrate	27.00 %	44.00%
Potassium oxide (K ₂ O), soluble in water	7.40 %	
Calcium Oxide (CaO), soluble in water	3.90 %	6.00 %
Magnesium Oxide (MgO), soluble in water	2.00 %	3.00 %
Boron (B), as boric acid, soluble in water	0.010 %	0.016 %
Copper (Cu), chelated by EDTA, soluble in water	0.002 %	0.003 %
Iron (Fe), chelated by EDTA, soluble in water	0.050 %	0.080 %
Manganese (Mn), chelated by EDTA, soluble in water	0.020 %	0.032 %
Molybdenum (Mo), as sodium salt, soluble in water	0.002 %	0.003 %
Zinc (Zn), chelated by EDTA, soluble in water	0.010 %	0.016 %

Recommendations

FIVE TERRA is a single-tank mix providing plants with all the necessary nutrients. FIVE TERRA can be mixed with calcium nitrate without the risk of precipitation. Do not mix with other NPK, phosphate and/or sulphate containing fertilizers. When mixing with other chemicals, it is recommended to perform small scale trials before using on a large scale.

FIVE MULTI

pH
2.2

20-20-20 + 6 CaO + 3 MgO + TE



Packing size 200g, 1kg, 5kg

- Balanced NPK formulation with high levels of calcium and magnesium with trace elements.
- High solubility of all nutrients keeping irrigation systems clean.
- Acidifying properties combined with calcium improves alkaline soil conditions.
- Designed for use throughout entire growth cycle

Specifications	Density: +/- 1.55 kg/liter	
	W/W	W/V
Total nitrogen (N)	13.20 %	20.00 %
Nitric nitrogen (N-NO ₃)	6.80 %	10.30 %
Urea nitrogen (N-NH ₂)	6.40 %	9.70 %
Total Phosphorus pentoxide (P ₂ O ₅)	13.20 %	20.00%
Phosphorus pentoxide (P ₂ O ₅), soluble in water	13.20 %	20.00%
Phosphorus pentoxide (P ₂ O ₅), soluble in water and neutral ammonium citrate	13.20 %	20.00%
Potassium oxide (K ₂ O), soluble in water	13.20 %	20.00%
Calcium Oxide (CaO), soluble in water	3.90 %	6.00 %
Magnesium Oxide (MgO), soluble in water	2.00 %	3.00 %
Boron (B), as boric acid, soluble in water	0.010 %	0.016 %
Copper (Cu), chelated by EDTA, soluble in water	0.002 %	0.003 %
Iron (Fe), chelated by EDTA, soluble in water	0.050 %	0.080 %
Manganese (Mn), chelated by EDTA, soluble in water	0.020 %	0.032 %
Molybdenum (Mo), as sodium salt, soluble in water	0.002 %	0.003 %
Zinc (Zn), chelated by EDTA, soluble in water	0.010 %	0.016 %

Recommendations

FIVE MULTI is a single-tank mix providing plants with all the necessary nutrients. FIVE MULTI can be mixed with calcium nitrate without the risk of precipitation. Do not mix with other NPK, phosphate and/or sulphate containing fertilizers. When mixing with other chemicals, it is recommended to perform small scale trials before using on a large scale.

FIVE FRUCTUS

pH
2.2

18-9-36 + 6 CaO + 3 MgO + TE



Packing size 200g, 1kg, 5kg

- High potassium formula with high levels of calcium and magnesium with TE.
- Improving yield and quality of fruits.
- 3 in 1 action (NPK - Calcium supply - Acidification).
- Designed for use during fruit development and maturation stages.

Specifications	Density: +/- 1.6 kg/liter	
	W/W	W/V
Total nitrogen (N)	11.25 %	18.00 %
Nitric nitrogen (N-NO ₃)	9.10 %	14.60 %
Urea nitrogen (N-NH ₂)	2.15 %	3.40 %
Total Phosphorus pentoxide (P ₂ O ₅)	5.70 %	9.00 %
Phosphorus pentoxide (P ₂ O ₅), soluble in water	5.70 %	9.00 %
Phosphorus pentoxide (P ₂ O ₅), soluble in water and neutral ammonium citrate	5.70 %	9.00 %
Potassium oxide (K ₂ O), soluble in water	22.70 %	36.00 %
Calcium Oxide (CaO), soluble in water	3.90 %	6.00 %
Magnesium Oxide (MgO), soluble in water	2.00 %	3.00 %
Boron (B), as boric acid, soluble in water	0.010 %	0.016 %
Copper (Cu), chelated by EDTA, soluble in water	0.002 %	0.003 %
Iron (Fe), chelated by EDTA, soluble in water	0.050 %	0.080 %
Manganese (Mn), chelated by EDTA, soluble in water	0.020 %	0.032 %
Molybdenum (Mo), as sodium salt, soluble in water	0.002 %	0.003 %
Zinc (Zn), chelated by EDTA, soluble in water	0.010 %	0.016 %

Recommendations

FIVE FRUCTUS is a single-tank mix providing plants with all the necessary nutrients. FIVE FRUCTUS can be mixed with calcium nitrate without the risk of precipitation. Do not mix with other NPK, phosphate and/or sulphate containing fertilizers. When mixing with other chemicals, it is recommended to perform small scale trials before using on a large scale.

CROP RECOMMENDATIONS





FIELD TRIALS

Test site information

Contract research organisation: GMW Bioscience

Crop: Tomato under open field conditions

Variety: Globetrotter

Locality: Alberic (Valencia), Spain

Plot size(m²)/Number of plants: 12/6

Number of variants/Number of replicates: 2/4

Type of soil: Loam

Soil pH: 8

Timing: July - November 2019

Fertilisation: Both the treated and control plots were subjected to an identical fertilisation program. However, the treated plots received supplementary amounts of FIVE gel fertilisers applied by drip irrigation.

Conclusions

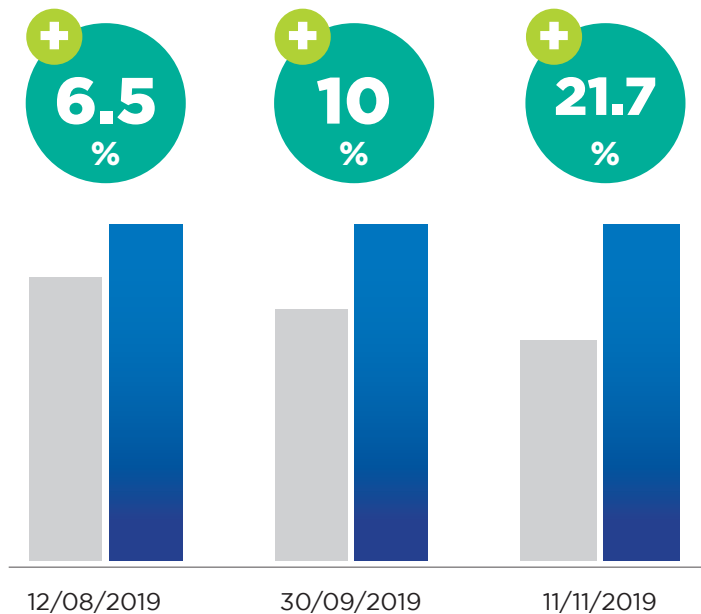
Plants vigour assessment: All treatments showed better vigour than untreated plots.

Number of flowers and fruits: Plots treated with FIVE MULTI, TERRA and FRUCTUS showed higher amount of flowers and fruits compared to untreated plots (Control).

Yield assessment: Treated plots showed higher yield

Products	Average dosage rate	Application details
FIVE TERRA	15 kg/ha	Three applications after transplanting with one week interval.
FIVE MULTI	15 kg/ha	Seven applications after beginning of flowering with one week interval until beginning of fruit ripening.
FIVE FRUCTUS	17 kg/ha	Six applications after beginning of fruit ripening until 60% of fruits show typical fully ripe colour.

Plant vigour:



Yield:



Fruits per plant:



Control
FIVE Terra, Multi, Fructus



FIELD TRIALS

Test site information

Contract research organisation: GMW Bioscience

Crop: Watermelon under open field conditions

Variety: Sugar baby

Locality: Alberic (Valencia), Spain

Plot size(m²)/Number of plants: 15/6

Number of variants/Number of replicates: 2/4

Type of soil: Loam

Soil pH: 8

Timing: July – 30th September 2019

Fertilisation: Both the treated and control plots were subjected to an identical fertilisation program. However, the treated plots received supplementary amounts of FIVE gel fertilisers applied by drip irrigation

Conclusions

Plants vigour assessment: All treated plots showed better vigour than the untreated plots.

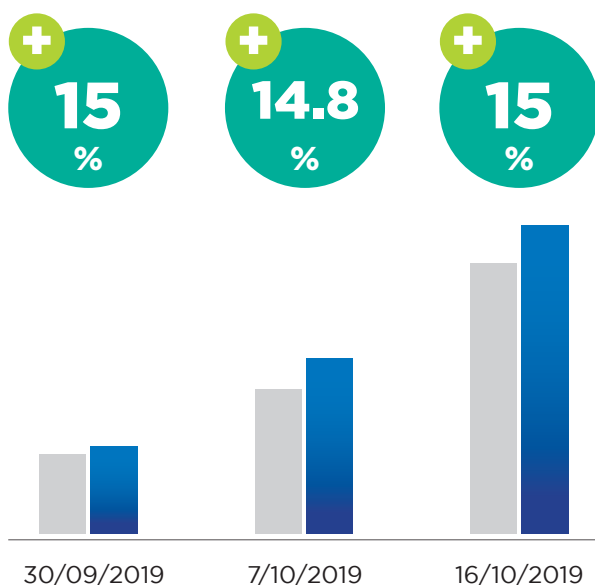
Plants length: Treated plots showed higher length.

Number of flowers and fruits: Treated plots showed higher amount of flowers and fruits.

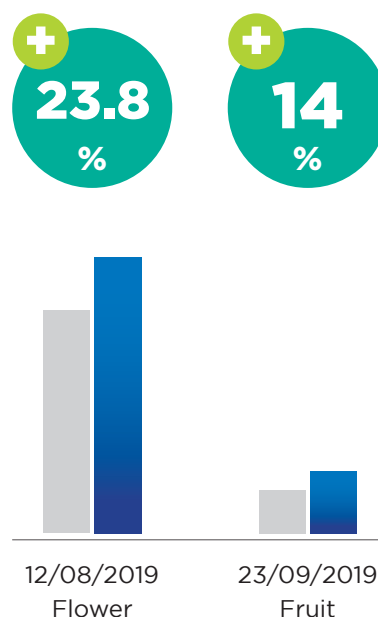
Yield assessment: Treated plots showed higher yield of marketable fruits.

Products	Average dosage rate	Application details
FIVE TERRA	13 kg/ha	Three applications after transplanting with one week interval.
FIVE MULTI	13 kg/ha	Five applications after the beginning of flowering until fruit ripening.
FIVE FRUCTUS	16 kg/ha	Four applications during fruit ripening with one week interval.

Yield:



Flowers and fruits per plant:



Control
FIVE Terra, Multi, Fructus



FIELD TRIALS

Test site information

Contract research organisation: Warsaw University
Crop: Highbush blueberry
Variety: Bluecrop
Locality: Blonie (Prazmow), Poland
Plot size(m²)/Number of plants: 2500/750
Number of variants/Number of replicates: 4/4
Type of soil: Sandy soil
Soil humus content: 2.8 %
Timing: April – September 2021 & 2022
Fertilisation: Both the treated and control plots were provided with an equal quantity of nutrients. The control plot utilised standard water-soluble fertilisers, while the treated plot received Five gel fertilisers through fertigation.

Conclusions

Plants vigour assessment: All treatments showed better vigour than untreated plots.
Number of flowers and fruits: Plots treated with Grogreen Five Multi, Terra and Fructus showed higher amount of flowers and fruits compared to untreated plots (Control).
Yield assessment: Quality of fruit stays the same although yield is significantly higher.

Products	Total dosage	Application details
FIVE TERRA	60 kg/ha	Two applications of 15 kg/week (start mid-April) until flowering.
FIVE MULTI	540 kg/ha	At beginning of flowering 4x 15 kg/week until end of July for 9 weeks.
FIVE FRUCTUS	180 kg/ha	Two applications of 15 kg/week during fruit ripening stages.
FIVE TERRA	40 kg/ha	One application of 10kg/week during 4 weeks (in september).

Marketable yield:



Fruit size:



Soluble solids:



Control
 FIVE Terra, Multi, Fructus

Application rates and timings

FIVE TERRA

Tomato, cucumber, etc.: apply 12 – 20 kg/ha/application 2 – 3 times/week after transplanting or germination till fruit setting.

Melon, watermelon, squash: apply 12 – 16 kg/ha/application 2 – 3 times/week after transplanting till fruit setting.

Strawberries: apply 12 – 15 kg/ha/application 2 – 3 times/week after transplanting till the apparition of first fruits.

For continuous fertigation, the recommended concentration of FIVE Terra varies from 0.5 to 2 g/l (0.05 to 0.2 %). The high phosphorous formulation is best suited for root development (tuber initiation in potato, after transplanting vegetables, beginning root activity of fruit trees), during tillering of wheat and during flower initiation.

FIVE MULTI

Tomato, cucumber, etc. : apply 12 – 20 kg/ha/application 2 – 3 times/week during the accelerated vegetative growth and during the fruit development stage.

Melon, watermelon, squash: apply 12 – 16 kg/ha/application 2 – 3 times/week during the accelerated vegetative growth and fruit bulking stage.

Strawberries: apply 12 – 15 kg/ha/application 2 – 3 times/week during the vegetative growth; repeat on green fruits till before fruit colouring.

For continuous fertigation, the recommended concentration of FIVE MULTI varies from 0.5 to 2 g/l (0.05 to 0.2 %). This balanced formulation is best suited for applications during vegetative crop development.

FIVE FRUCTUS

Tomato, cucumber, etc.: apply 12 – 20 kg/ha/application 2 – 3 times/week after fruit setting till fruit maturity. Alternate with FIVE MULTI and FIVE TERRA for new flowers and fruits.

Melon, water melon, squash: apply 12 – 16 kg/ha/application 2 – 3 times/week after fruit setting till 10 – 15 days before harvest.

Strawberries: apply 12 – 15 kg/ha/application 2 – 3 times/week after fruit setting till maturity. Alternate with FIVE MULTI and FIVE TERRA for new flowers and fruits.

For continuous fertigation, the recommended concentration of FIVE FRUCTUS varies from 0.5 to 2 g/l (0.05 to 0.2 %). The high potassium formulation is best suited for applications during fruit growth and maturation.



Lima Europe NV

Doelhaagstraat 77/1,
2840 Rumst - Belgium
info@lima-europe.com
www.lima-europe.com