Dominican Republic

SumaGrow – Trials And Results

Greenhouse Bell Pepper

Objective

- Confirm Increase in Fruit Weight

Bell Peppers
Constanza, Dominican Republic

- **Two Days Before Trial**
  - **Disinfect beds**
    Dicloropopeno
    and Cloropicina
  - **Disinfect structures**
    Diazinon, Eviset, Acarin
  - **Disinfect passageway**
    Mocap and Cal

Trial Specifications

- Holppe Seed
  - Drip Irrigation
  - Hard water
- Ph
  - 8.3
- Water
  - Once a day – first 14 days
  - After floration – twice a day for 15 minutes

Control – 5,750 plants = 1 acre

- **Planting Start Date –** August 25, 2012
- **Closing Date** November 26, 2012

- First 14 days – applied root enhancer and fungicide

- After 14 days – applied:
  - Calcium Nitrate
  - Potassium Nitrate
  - Magnesium Sulfate
  - Micro, Slice & Phosphate

SumaGrow – 5,750 plants = 1 acre

- **Planting Start Date** – August 25, 2012
- **Closing Trial Date** – November 26, 2012

- Four applications every 21 days
  - Total 3.5 gallons

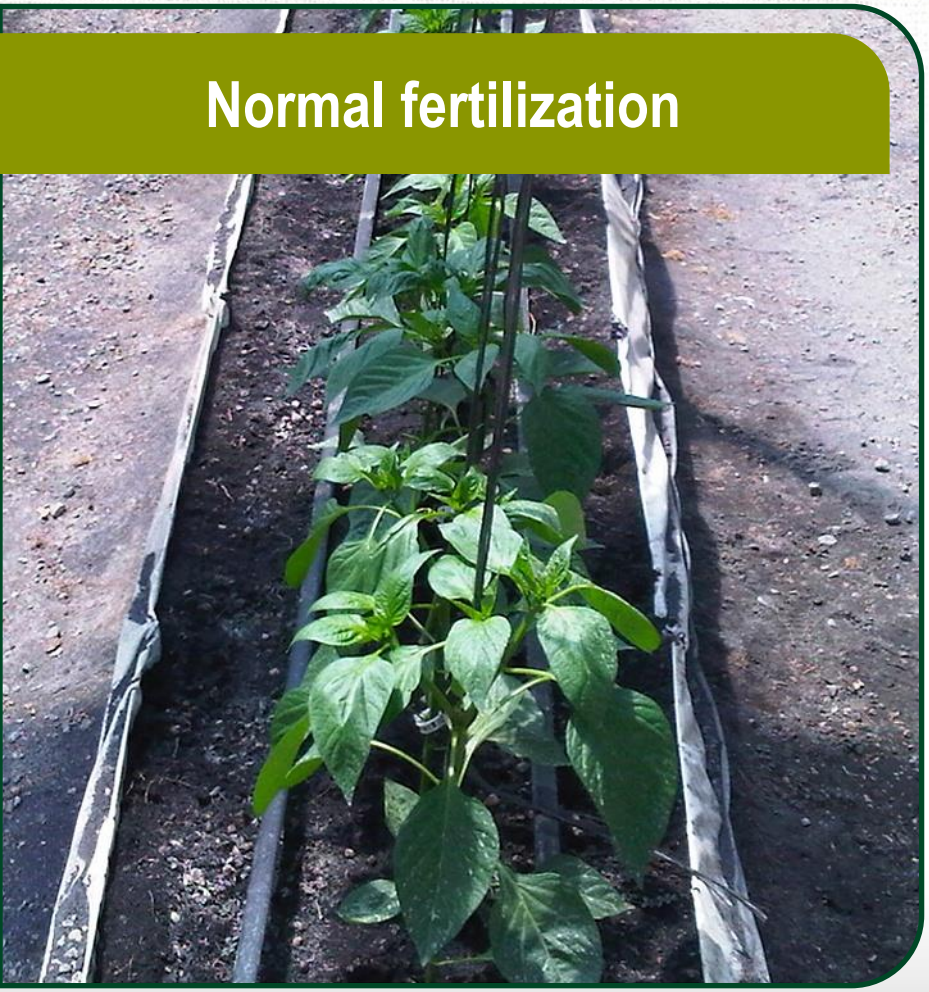
- Applied with backpack pump around plant stems

100% reduction in Chemical fertilizer

Bell Peppers
Constanza, Dominican Republic

– *Monitoring Applications (36 days of sowing) – October 1, 2012*

Normal fertilization

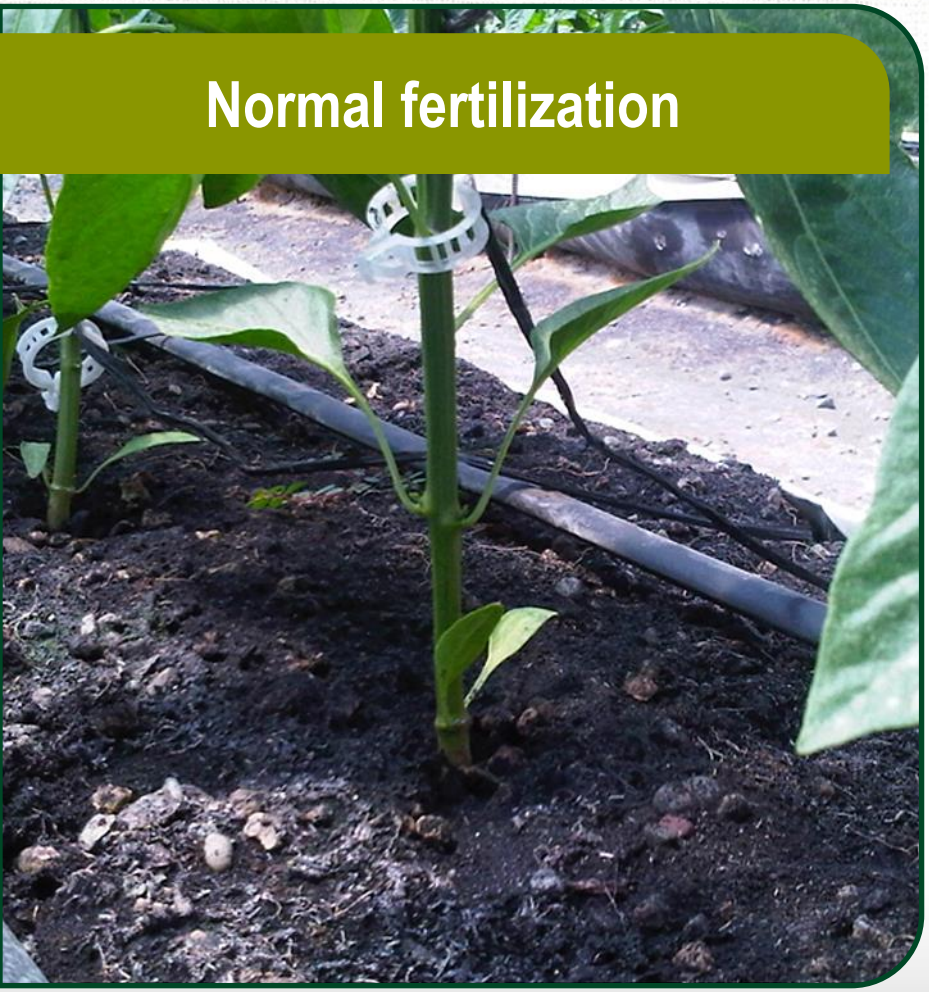


Two applications of SumaGrow

Bell Peppers
Trunk and Foliage

– *October 1, 2012*

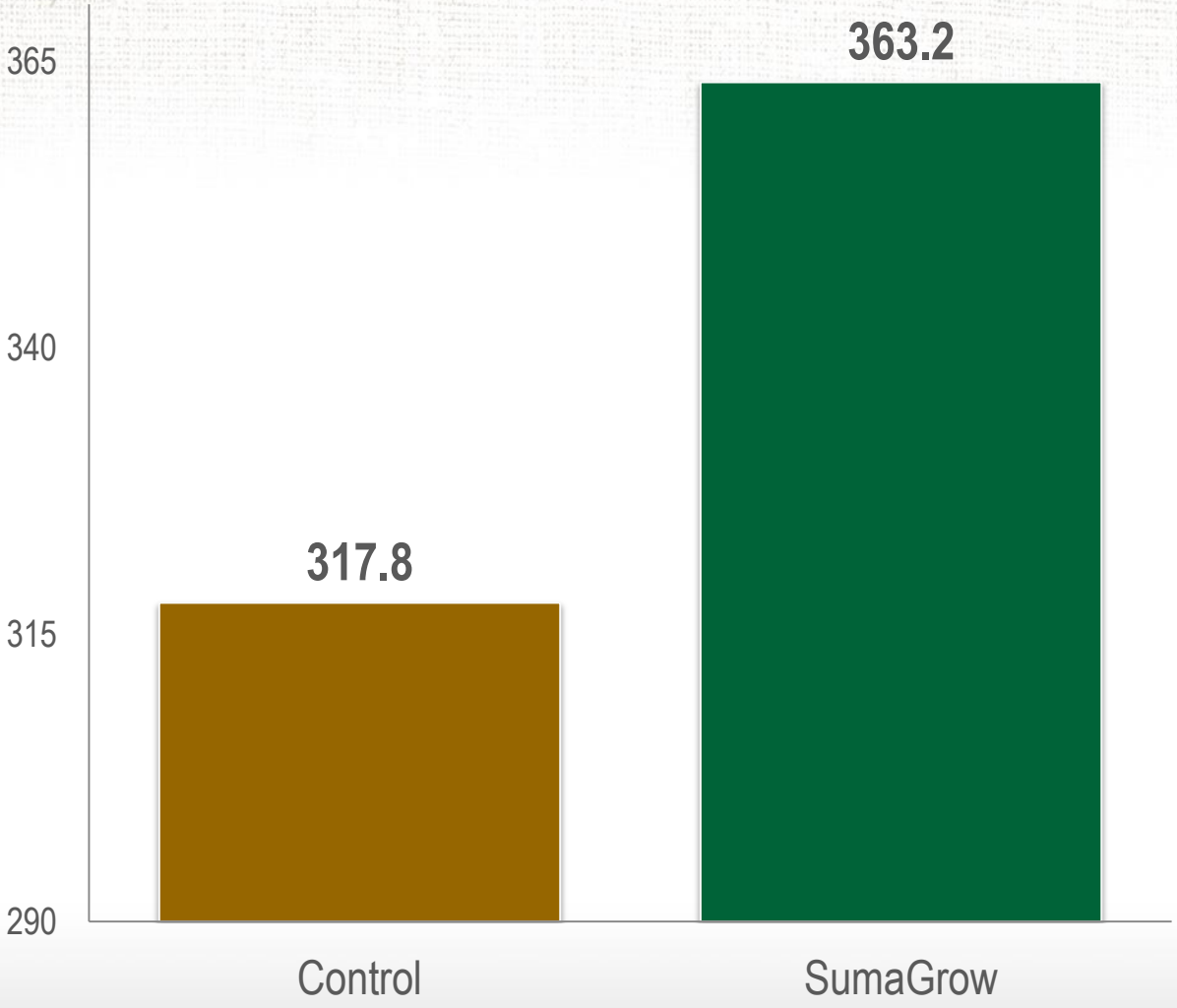
Normal fertilization



Two applications of SumaGrow

Actual Size of Plants
After Four Applications of SumaGrow

Weight Increase Per Pepper



14.3% gram increase

Objective Reached?

Increased Weight Per Fruit

Increased Foliage

Increased Root Structure

Trial Cost

Normal Fertilization

$368

SumaGrow

$75

Monthly Savings

$293

RESULTS IN POUNDS AND DOLLARS PER ACRE

– PROFIT

	Pounds	Price/LB.	Total	Harvest Pounds	Harvest Price
SumaGrow	2.0646	24.00	$49.55	23,749.90	$14,004.00
Control	2.0101	24.00	$48.24	23,116.15	$13,634.65
PROFIT PER ACRE				**633,75**	**$370.26**

Organic Banana

Objective

– Strengthen the roots

Sample Taken of Soil, Foliage and Roots Before Application of SumaGrow

Soil Type – Organic Banana

Plot Identification		Unit of Analysis	Sand	Silt	Clay	Texture
Plot A	12DC-116	%	49	25	26	Sandy Clayey Loam
Plot B	12DC-117	%	42	31	27	Loam
Control Plot	12DC-118	%	45	29	26	Loam

Anaysis conducted by the Dominican Institute of Agriculture and Forestry Research (IDIAF), Lic. Socorro García Pantaleón

SumaGrow Application – Organic Banana Mao, Dominican Republic

- One acre of land selected

- 1 gallon SumaGrow on first application and 0.5 gallon on the following three applications

- Soil, root and foliage samples taken after completion of trial

Anaysis conducted by the Dominican Institute of Agriculture and Forestry Research (IDIAF), Lic. Socorro García Pantaleón

SumaGrow Application with Backpack Sprayer

Phytosanitary Diagnosis Results

	Witness	SumaGrow
Bacteria Cfu/g	2,500,000	8,000,000
Actinobacteria Cfu/g	31,500,000	51,000,000
Fungi Cfu/g	55,000	65,000

Anaysis conducted by the Dominican Institute of Agriculture and Forestry Research (IDIAF), Lic. Socorro García Pantaleón

Foliar Analysis Report – Nitrogen – Organic Banana Mao, Dominican Republic

Before application of SumaGrow

August 2012

0.13

- Nitric Perchloric Digestion
- AA Spectrophotometer Reading in Flame

After application of SumaGrow

November 2012

2.77

- Nitric Perchloric Digestion
- AA Spectrophotometer Reading in Flame

> The nitrogen has a positive influence on the output, the amount yielded per cluster, and the length of the fruit. There is a positive response with the optimal nitrogen levels (N) and this helps reduce the incidence and severity of SIGATOKA.
>
> – *Manuel Aristizábal L., Costa Rica*

Anaysis conducted by the Dominican Institute of Agriculture and Forestry Research (IDIAF), Lic. Socorro García Pantaleón

Comparison Photos of Banana Roots After Four Applications

- T = Witness
- Plot A = SumaGrow Application
- Plot B = SumaGrow Application

Photos taken by the Dominican Institute of Agricultural and Forestry Research

Results of Root Phytonematodes Analysis December, 2012

	Witness	SumaGrow
Radophulus spp.	3,200	3,920
Pratylenchus spp.	0	
Helicotylenchus spp.	2,000	2,240
Meloidogyne spp.	3,840	240
Rotylenchulus spp.	880	640
Saprofitos	480	720

Anaysis conducted by the Dominican Institute of Agriculture and Forestry Research (IDIAF), Lic. Socorro García Pantaleón

Lab Analysis on 30 Grams (1.0582 oz) of Roots November, 2012

	Organic Banana Total Root	Functional Root	Dead Root
Witness	171	143	28
SumaGrow	356	282	15
Increase	**185**	**139**	**13**

Anaysis conducted by the Dominican Institute of Agriculture and Forestry Research (IDIAF), Lic. Socorro García Pantaleón

Flowers

Objective

- Performance

Fertilzation Protocol - No reduction in chemical fertilizer

- 3 applications of SumaGrow

– Nitrate and potassium sulphate

– Ammonium Nitrate

– Sulfate and Magnesium nitrate

– Calcium nitrate

Strawberry (Conventional)

Objective

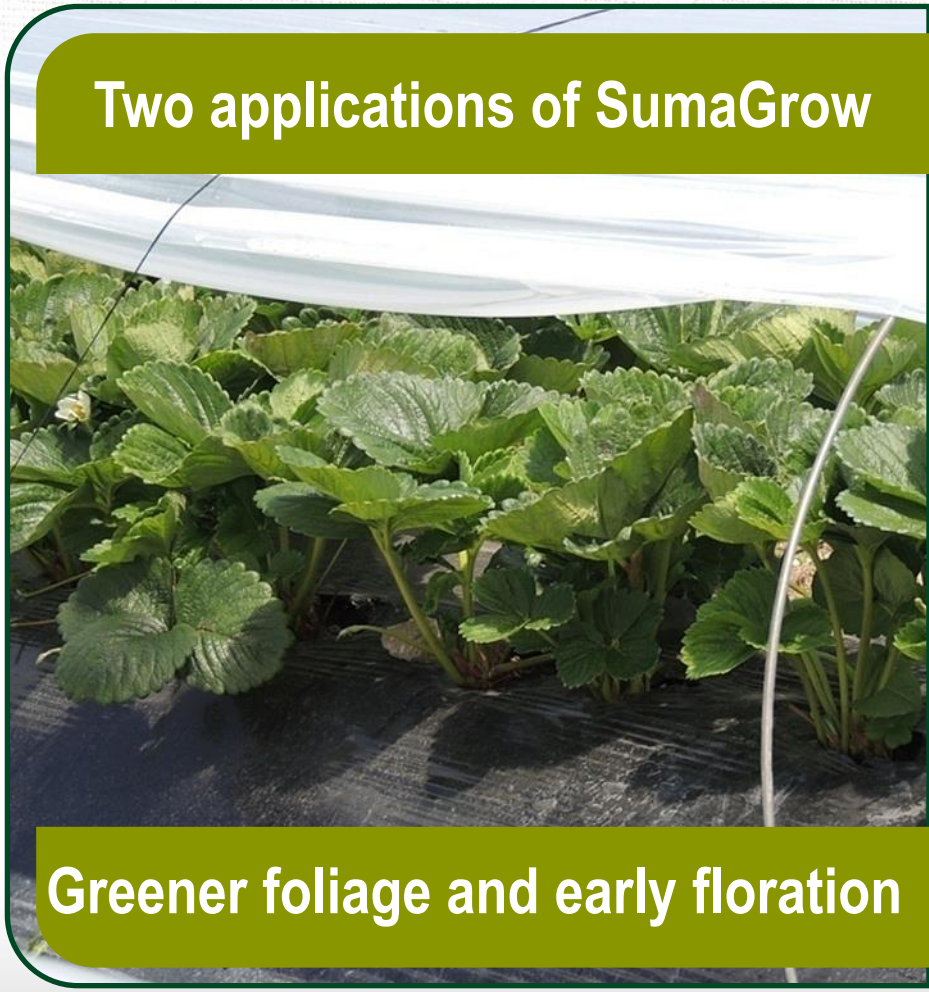
- Extend planting cycle through the winter months successfully
- Reduce the incidence of Pest and Disease

Strawberry 40% reduction chemical fertilizer

– Valle Nuevo, Constanza

Normal fertilization

Two applications of SumaGrow



Greener foliage and early floration

Comparison Photos of Strawberry Roots

– Valle Nuevo

Normal fertilization

Two applications of SumaGrow

Trial Results

- Only grower still producing (3 degrees below zero) temperatures
- Plague and pest incidence **reduced 90%**
- **Yield increase of 25%**
- **Firmer and Sweeter**

SumaGrow – A Good Report Card?