



BioGro Inc. - Field Trial Research

Premium 21 on Mature Citrus

Objective: To evaluate how Premium 21 impacts cation nutrient uptake in mature citrus.

Conclusions:

Apart from K and Zn, tissue tests indicated a significant increase in Ca, Mg, Mn, and Fe where Premium 21 was applied. For this case, the most important increases were calcium and iron as these nutrients were nearing deficiency in the control blocks. The decrease in tissue potassium is notable, however not significant as the treated block tests still remained in the adequate nutrient range according to UF-IFAS recommendations. The results indicate that Premium 21 could be a useful management tool where calcium and micronutrient deficiencies exist in mature citrus.

Cooperator(s): D&M Landclearing

Location: Ft. Meade, FL

Date: 03/21/19 – 10/21/19

Test Crop: Mature Citrus

Variety: Multiple (Hamlin, Valencia, and Fallglo)

Treatments:

1. UTC – Untreated Control
2. 5gpa Premium 21

Trial Layout:

Three applications via fertigation were made throughout year (04/03/19, 06/26/19, and 09/19/19). Tissue measurements were taken 30-days post-application.

Test Block Descriptions: All bearing, assumed HLB infected

1. Geiger Block (Treated)- Eastside is 10A Hamlin and Westside is 10A Valencia/Fallglo (Total = 20A). Eastside of the Hamlins has a very sandy soil with hardpan underneath (will be focus area for tree improvement). Soil pH on 01/21/19 measured 6.7
2. Graves Block (Control) – Northside is 10A Valencia and Southside is 10A Hamlin (Total = 20A). Next to and same age as Geiger. Roughly 20 year old trees. Soil pH on 01/21/19 measured 6.9
3. Williams Block- Soil pH on 01/21/19 measured 6.7. Roughly 10-year old trees and exhibit heavy production.
 - a. South NW-40 = Treated (20A)
 - b. North NW-40 = Control (20A)



Results:

7/29/2019	K	Ca	Mg	Mn	Zn	Fe
Geiger	1.56	2.07	0.34	22.00	18.00	33.00
NW40 South	1.27	2.59	0.36	29.00	18.00	44.00
Treated Avg.	1.42	2.33	0.35	25.50	18.00	38.50
Graves	1.82	1.55	0.36	9.00	15.00	35.00
NW40 North	1.66	2.01	0.34	14.00	17.00	37.00
Control Avg.	1.74	1.78	0.35	11.50	16.00	36.00
Treated/Control	-19%	31%	0%	122%	13%	7%
	K	Ca	Mg	Mn	Zn	Fe

Based on UF-IFAS Citrus Nutrition Requirements

10/21/2019	K	Ca	Mg	Mn	Zn	Fe
Geiger	1.50	2.82	0.45	43.00	21.00	82.00
NW40 South	1.12	3.92	0.41	83.00	20.00	82.00
Treated Avg.	1.31	3.37	0.43	63.00	20.50	82.00
Graves	1.58	2.48	0.39	39.00	23.00	55.00
NW40 North	1.71	2.06	0.32	17.00	18.00	36.00
Control Avg.	1.65	2.27	0.36	28.00	20.50	45.50
Treated/Control	-21%	48%	21%	125%	0%	80%
	K	Ca	Mg	Mn	Zn	Fe

Based on UF-IFAS Citrus Nutrition Requirements