



## **BioGro Inc. - Field Trial Research**

### **Premium 21 & Cal-8 on Strawberries**

#### **Objective:**

1. To evaluate the effects of Premium 21 and Cal-8 on plant uptake and tissue analysis of calcium.
2. To evaluate how addition of Premium 21 and Cal-8 to a fertility program impacts fruit quality metrics.

#### **Conclusions:**

In replicated data collection, the program combining Premium 21 and Cal-8 exhibited the following season-long trends...

1. Tissue concentration calcium **+25.7%**
2. Unmarketable fruit **-2.8%**
3. Sugar content **+10.8%**
4. Weight per marketable berry **+14.6%**

It can be concluded that this combination of products could be a useful management tool for improving fruit production metrics in strawberries.

#### **Reasoning:**

Calcium is a nutrient that moves uni-directionally through the xylem by transpiration pull; meaning it does not translocate to other plant tissues. Tissues with high transpiration pull (i.e. leaf surfaces) become calcium sinks, typically pulling needed calcium away from low-transpiring fruit organs. Organic acids have been established as well-known, high-mobility carriers for calcium and help to even out the distribution of calcium through all plant tissues. Combination of calcium with organic acids is expected to not only raise total plant calcium (tissues analysis) but more importantly improve fruit quality metrics.

**Cooperator(s):** Berry Boss Farms, Florida AG Research

**Location:** Plant City, FL

**Date:** 2019/2020 Season

**Test Crop:** Strawberry

**Variety:** Brilliance

#### **Treatments:**

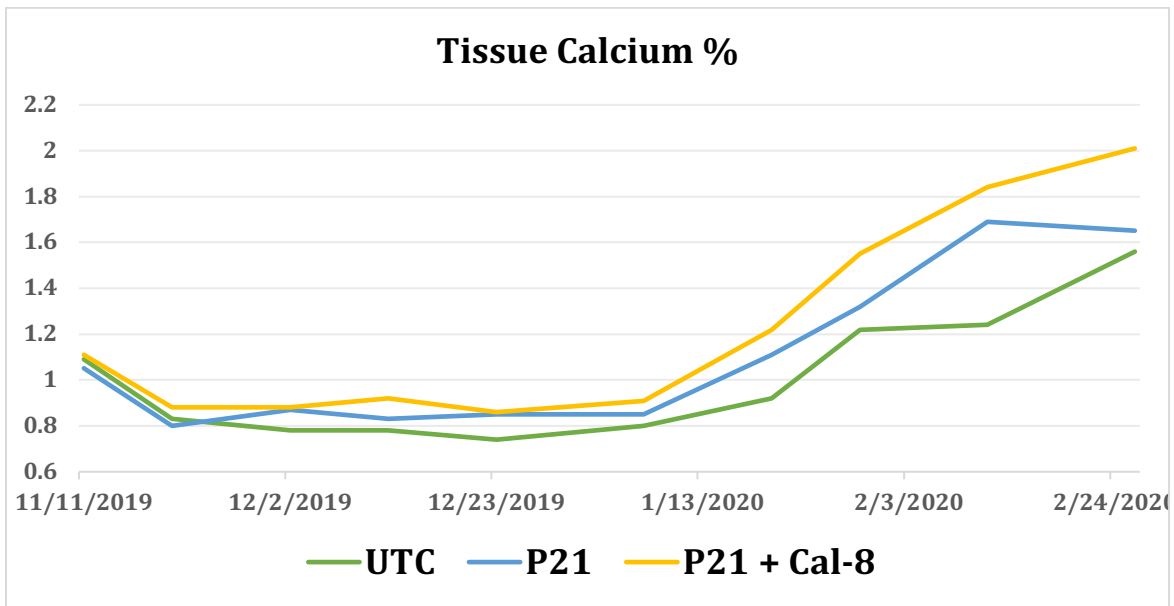
1. UTC – Untreated Control
2. 5gal/month Premium 21 (25 total gal)
3. 5gal/month Premium 21 (25 total gal) + 1gpa/7-10 days Cal-8 (10 total gal)



**Trial Layout:**

For each treatment, 4 randomized plot replications (40ft bed sections) were harvested at 3 points through height of season (12/19/19, 01/23/20, and 02/19/20). Tissue tests were pulled on 10 occasions throughout season.

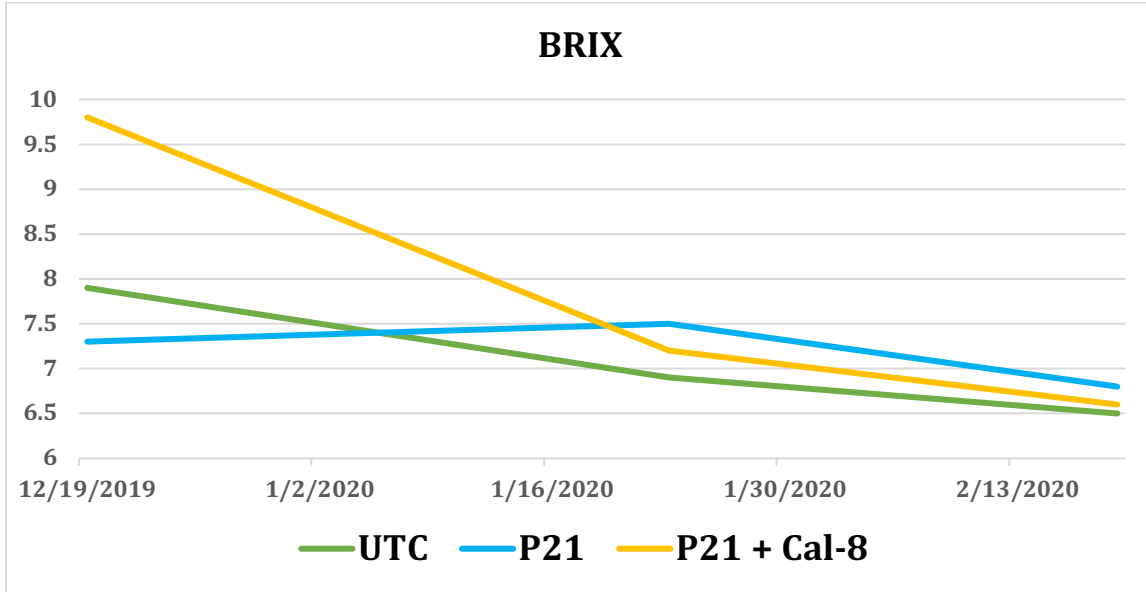
**Results:**



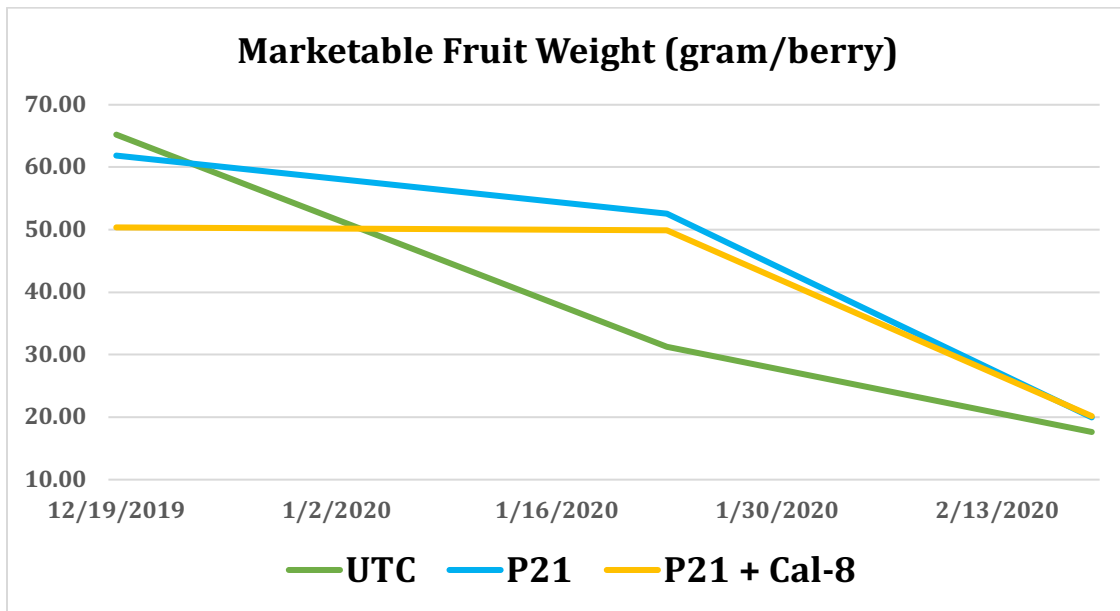
UTC Season Avg: 1.01%, P21 Season Avg: 1.14%, P21+Cal-8 Season Avg: 1.27%

**Season Averages (3 Harvest Dates):**

	Avg Total # Berries	Avg Total # Culls	% Unmarketable Fruit
<b>UTC</b>	419.8	101.5	24.2%
<b>P21</b>	432.1	99.8	23.1%
<b>P21 + Cal-8</b>	368.8	78.8	21.4%



UTC Season Avg: **7.10**, P21 Season Avg: **7.20**, P21+Cal-8 Season Avg: **7.87**



UTC Season Avg: **21.90**, P21 Season Avg: **26.66**, P21+Cal-8 Season Avg: **25.10**

