

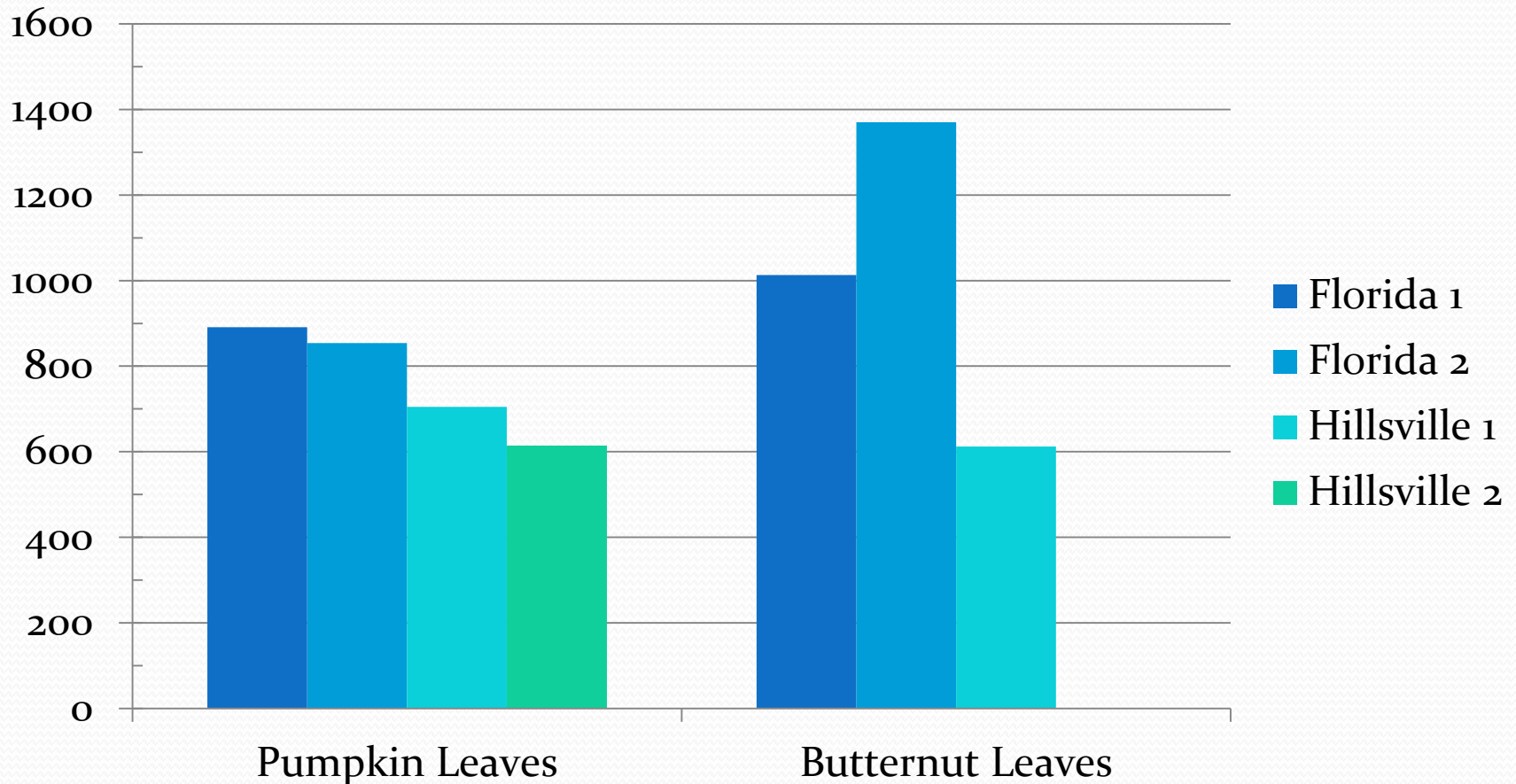
The Use of Calcium Silicate in Pumpkins

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VCE

Background on Calcium Silicate

- Fall of 2011
 - Larry Schwandes
 - Retired UF
 - Consulting work with Calcium Silicate Corp.
 - Came to Hillsville
 - Took Soil Samples
 - Took Leaf Samples
 - Visited with Growers
 - Harvested Pumpkins
- Crops that respond to Silica
 - Banana
 - Turf
 - Cucurbits
 - Yellow Squash
 - Zucchini Squash
 - Muskmelon
 - Watermelon
 - Pumpkins

Silicon Dioxide (ppm) – Samples – 2011



Soils and Calcium Silicate

- The use of Calcium Silicate
 - “Old” weathered soils like most of us have are low in plant available silica
 - Therefore, the plant is unable to take up enough Silica
 - Silica in the leaves helps resist disease
 - Silica can also increase yields 5 to 10%
- Soil Levels
 - Deficient when Si is below 30 ppm.
- Hillsville – 2011
 - Minimum
 - 13 ppm
 - Maximum
 - 64 ppm
 - General Range
 - 18 to 42

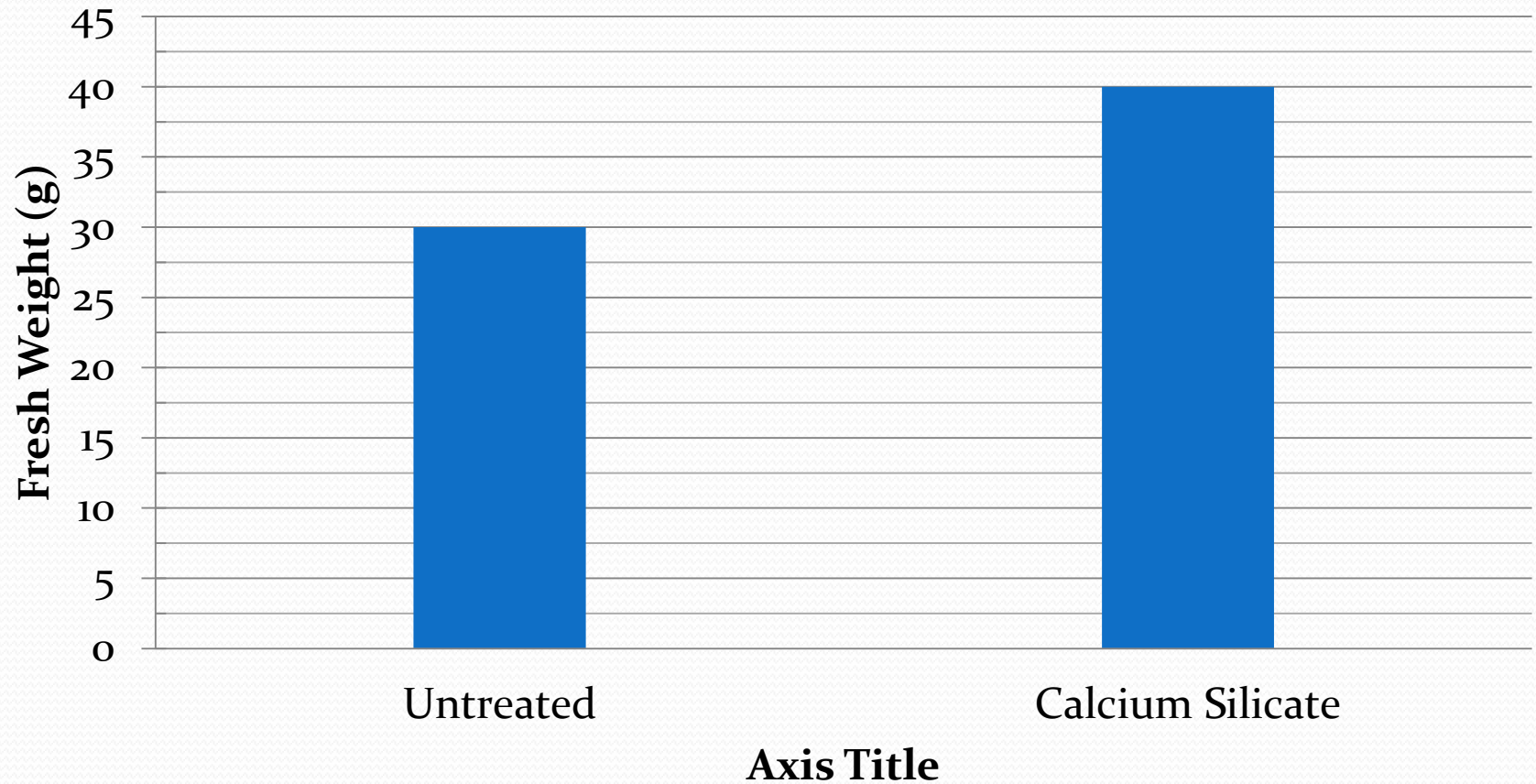
Calcium Silicate Trial – 2012

- June 2012
 - Applied Calcium Silicate
 - 3,500 lb/A
 - 1 ton/A
 - NT
 - CT
 - Variety
 - ‘Conestoga Giant’
- Summer of 2012
 - Evaluate severity of foliar diseases
- Fall 2012
 - Evaluate Yield of Pumpkins
 - Evaluate Quality of Pumpkins
- Results for 2012
 - Terrible growth over the entire plot area
 - Weather
 - Cultivar
 - No differences observed in disease severity
 - Plectosporium Blight
 - No differences in yield
 - Most of the fruit was non-marketable
 - Some of the fruit was harvested before it could be evaluated

Follow Up Trial – 2012

- Since there was no usable data from the field
- Larry and I took soil samples from the treated and untreated areas
- Conducted a “pot study” in Florida last fall / early winter.
- Started on 10/5/12
 - Two pots of each treatment
 - Calcium Silicate Added
 - 104 ppm
 - No Calcium Silicate
 - 14 ppm
 - 42 days after planting
 - Weighed the vines produced
 - Took Photographs

“Pot Study” Results – 2012



Calcium Silicate Pot Study – 2012



Calcium Silicate Trials – 2013

- Since we didn't get any data in 2012
- We replanted the same areas in 2013
 - 'Field Trip'
 - Mid-June
- Sprayed 5 times with fungicide
- Evaluated October
- Again,
 - Plots were "piled" before we could collect the data
 - Therefore, we were not able to collect yield data
 - But we did collect:
 - Fresh Plant Weight
 - Average Fruit Weight
 - Stem Thickness Rating
 - Fruit Color Rating

Results – 2013

Treatment	Biomass Production (lb/plant)	Average Fruit Weight (lb/fruit)	Stem Thickness Rating (1 – 9)	Fruit Color Rating (1 – 9)
UTC	2.4 b	4.4 b	6.3	6.5 b
3,500 lb/A	3.3 a	5.4 a	6.9	7.0 a

Grower Trial -2013 and Future

- Travis Marshall
 - Applied Calcium Silicate at 4 tons/A in the spring
 - Observations
 - Did not have an untreated check area
 - Produced about 40 bins/A
 - Felt like could have cut number of sprays in 1/2
- Grower Program for 2014
 - Larry will explain
 - Purchase a load at full price
 - Get a 50% rebate
 - 2 tons/A

Questions?

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