



IMPACT OF AN ETHYLENE INHIBITOR ON PEACH QUALITY

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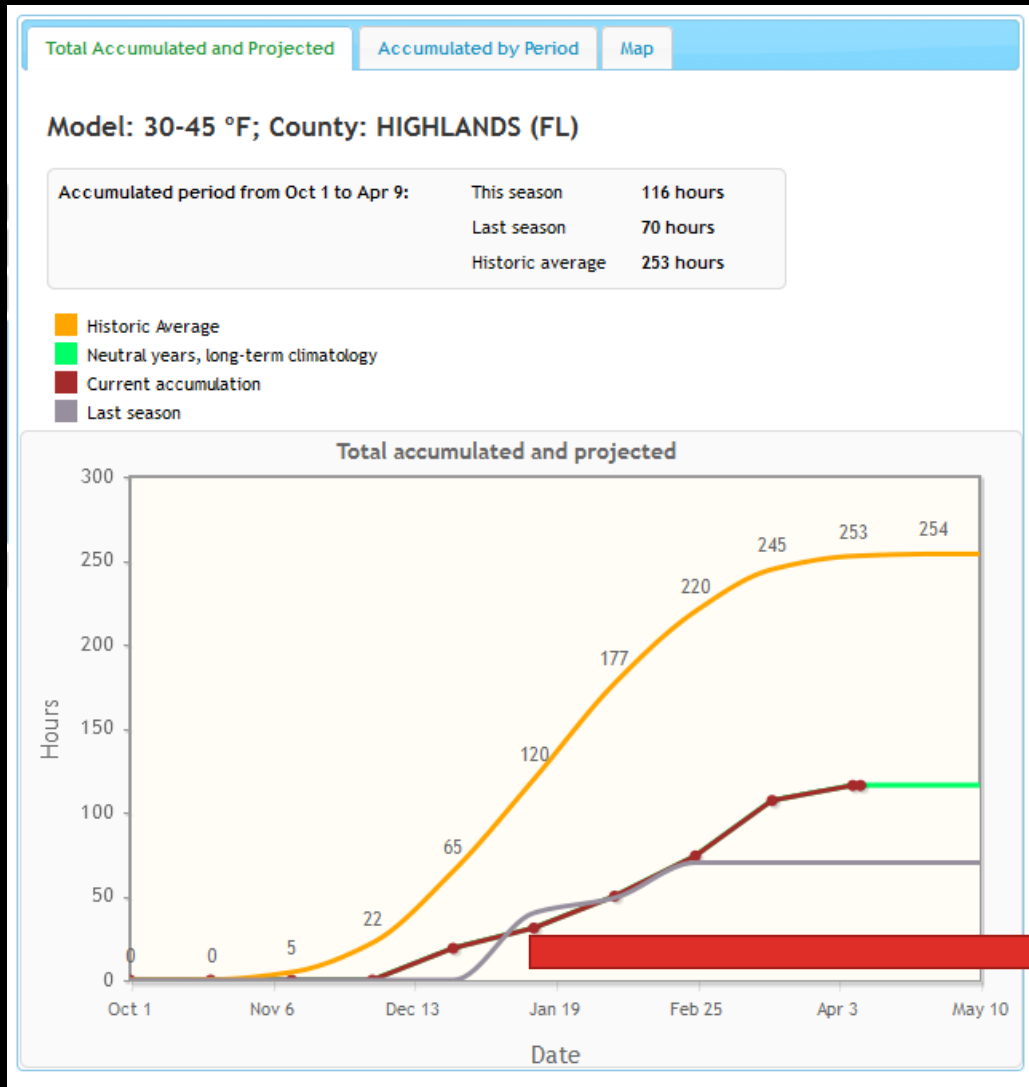
Dr. Steve Futch, UF/IFAS Extension, Lake Alfred, FL

2011-2012 GROWING SEASON

- Peach acreage increasing
- Crop diversification
- Typical year = chilling unit satisfaction
 - 2011 La Niña dominated
- 2011-12
 - Low chill units, in some cases no accumulated chill



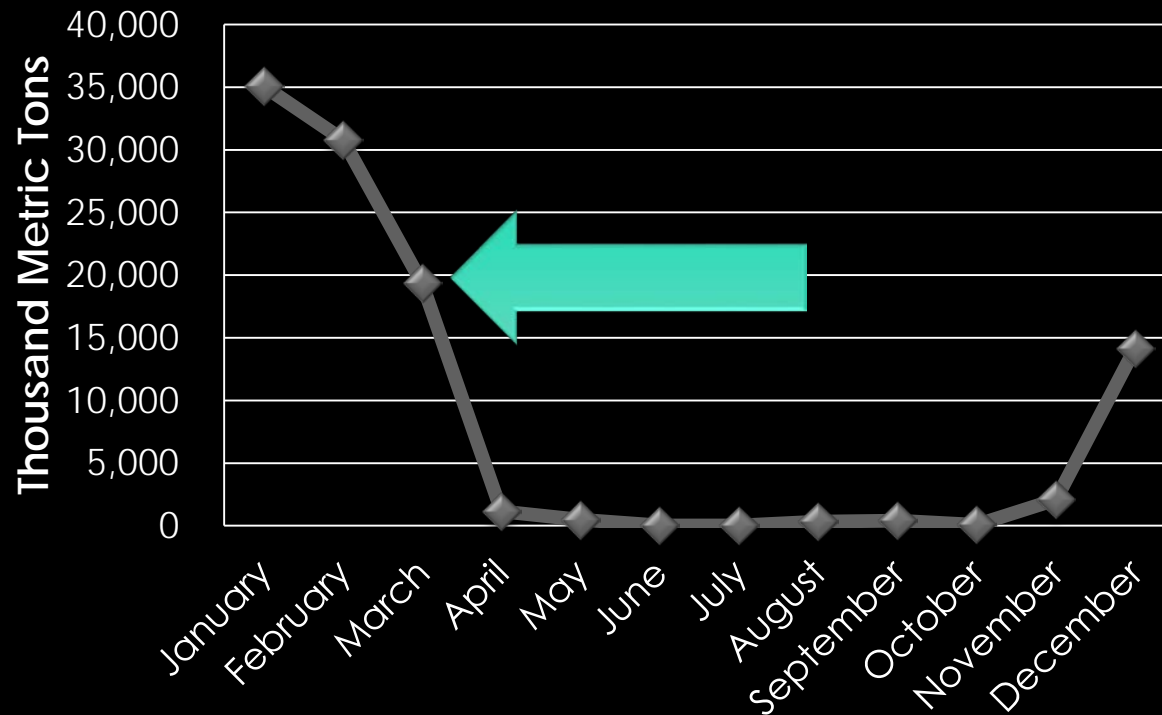
CHILLING UNITS – HIGHLANDS CO.



2 Chill Units
Accumulated by
12/31/11 !

MARKETING CHALLENGE

- Peach bloom = 3 weeks early



ETHYLENE

- Important plant hormone
 - Involved in ripening process
 - Bananas
 - Apples
- Inhibitors can delay ripening
 - Predominantly used in apple industry
 - Aminoethoxyvinylglycine (AVG)
- Delayed ripening
 - Increase fruit size by allowing longer hang time



METHODS AND MATERIALS

- Two farms in South Central Florida
 - Large, commercial acreage
- ReTain[®] + ProGibb[®] (Valent Biosciences)
 - 1 packet (333 grams) ReTain per acre
 - 10 fl. oz. ProGibb (4%) per acre
- Farm 1 –
 - 'UFSun'
 - Non-melting variety
 - First to be harvested in Florida
 - Control
 - ReTain[®] + ProGibb[®] (gibberellic acid)
 - Increase firmness and fruit size
 - Applied 2 weeks before anticipated harvest

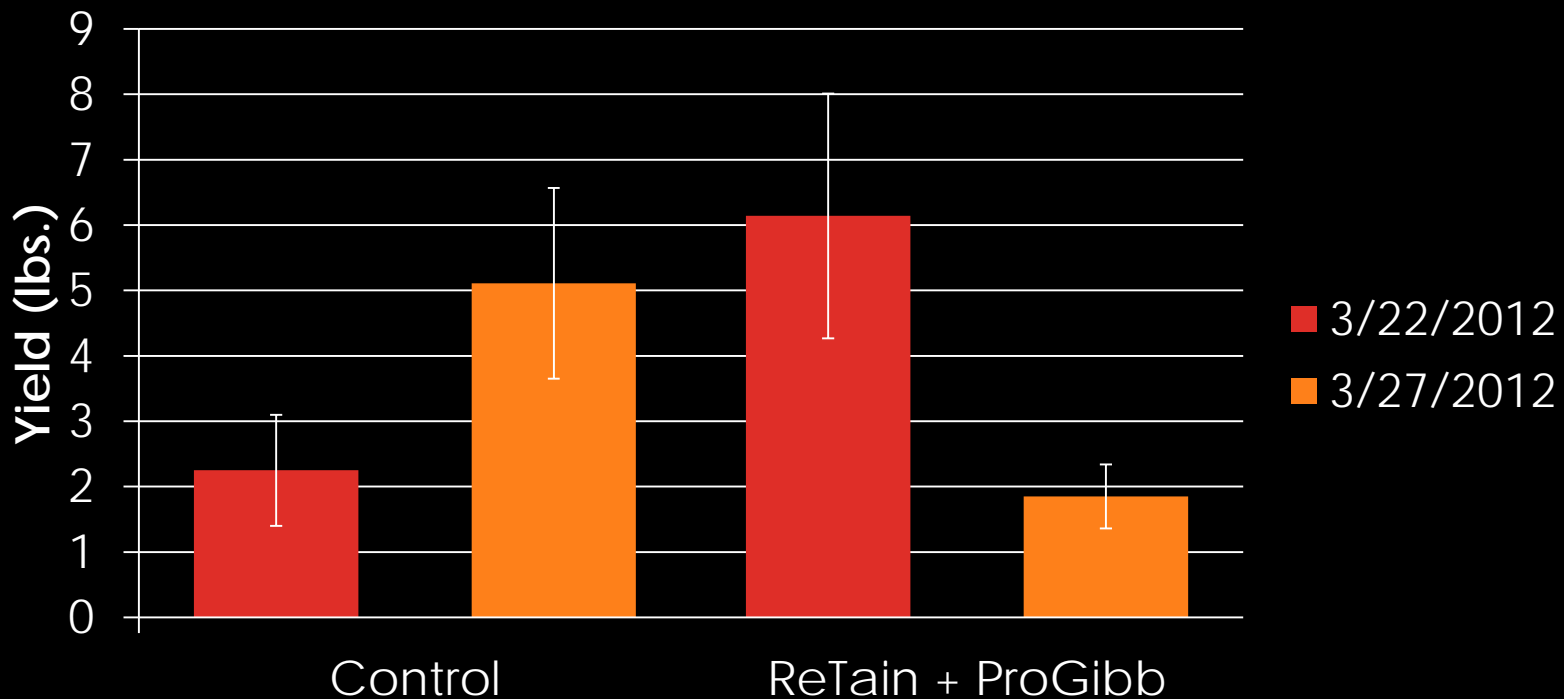


METHODS AND MATERIALS

- Farm 2
 - Two varieties
 - 'UFSun' and 'TropicBeauty'
 - Non-melting flesh vs. melting flesh
- Treatments
 - Control
 - ReTain[®] + ProGibb[®]
- Applied two weeks before anticipated harvest
- Yield, fruit number, average fruit weight
- Firmness
- Brix, pH, titratable acidity (%TA)



FARM 1 RESULTS – AVERAGE 'UFSUN' YIELD

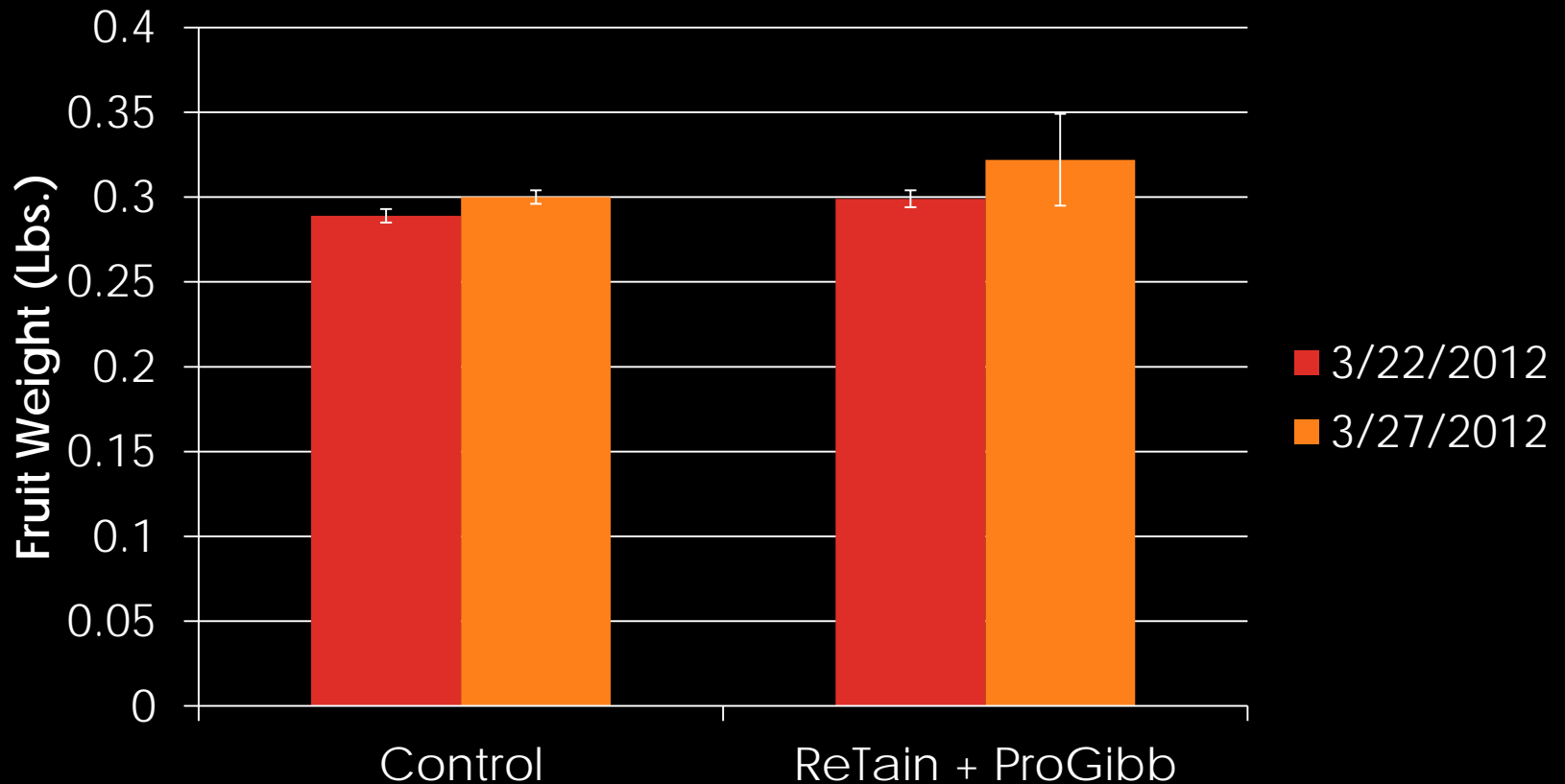


Total Yield:

Control – 36.8 lbs. (7.36 lbs./tree)

ReTain + ProGibb – 38.1 lbs. (7.62 lbs./tree)

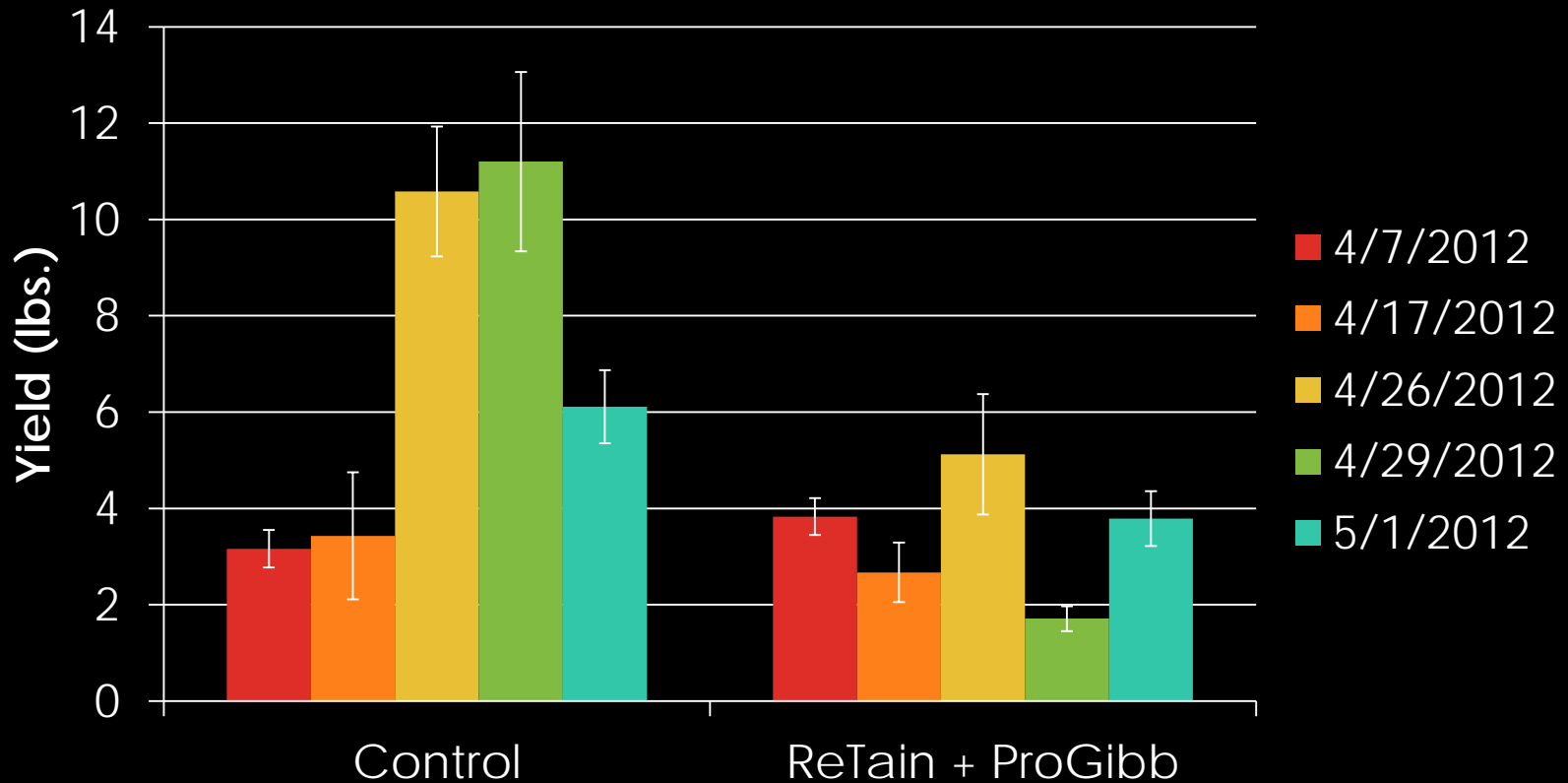
FARM 1 – AVERAGE FRUIT WEIGHT



FARM 1 – FIRMNESS, BRIX, PH, TA

Date	Treatment	Firmness (lbf)	Brix	pH	TA (%)
3/22/12	Control	6.96	10.95	3.91	0.67
	ReTain + ProGibb	6.81	11.10	4.04	0.63
3/27/12	Control	7.2 B	12.95	-	-
	ReTain + ProGibb	10.3 A	12.81	-	-

FARM 2 – AVERAGE 'TROPICBEAUTY' YIELD

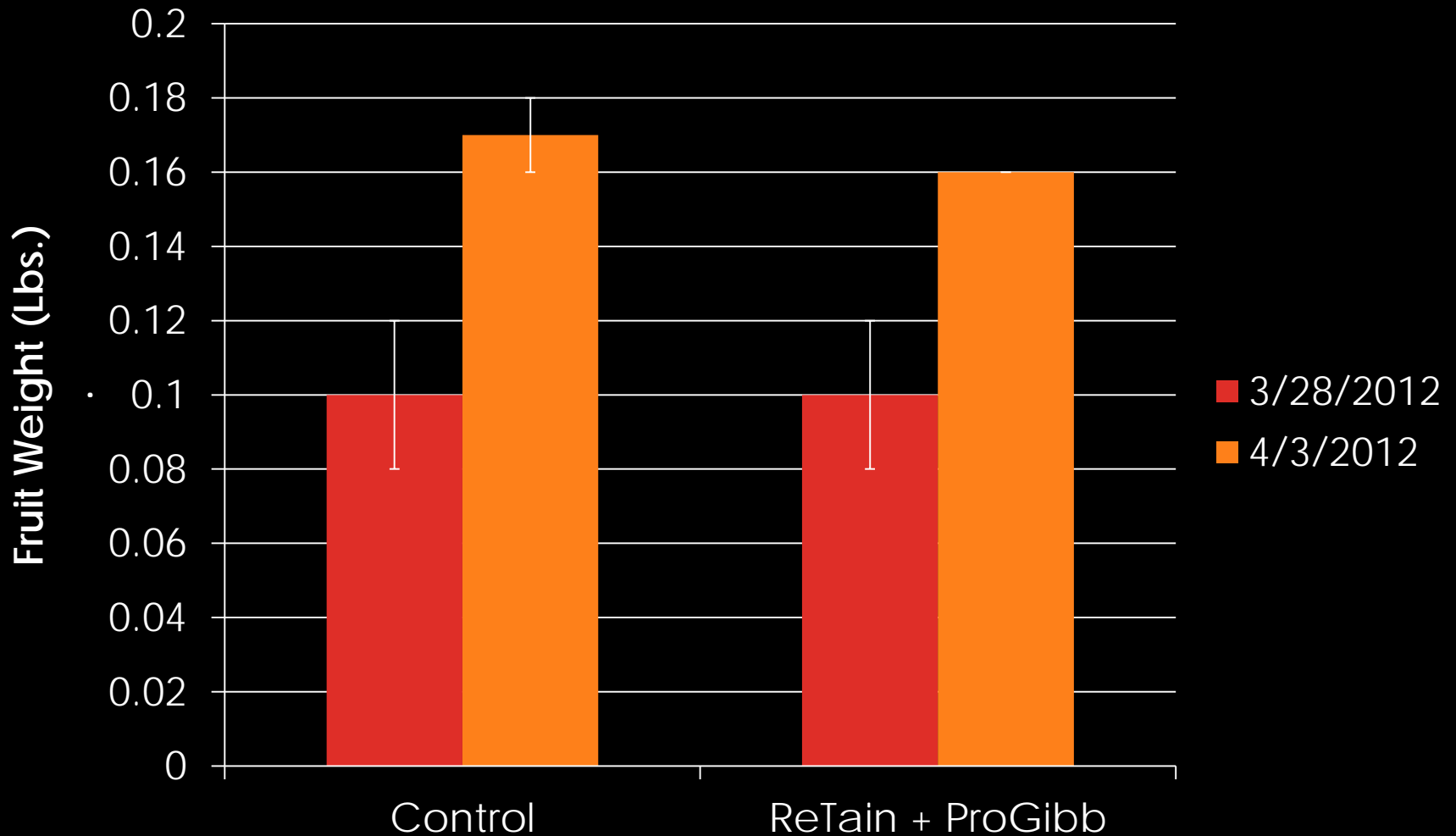


Total Yield:

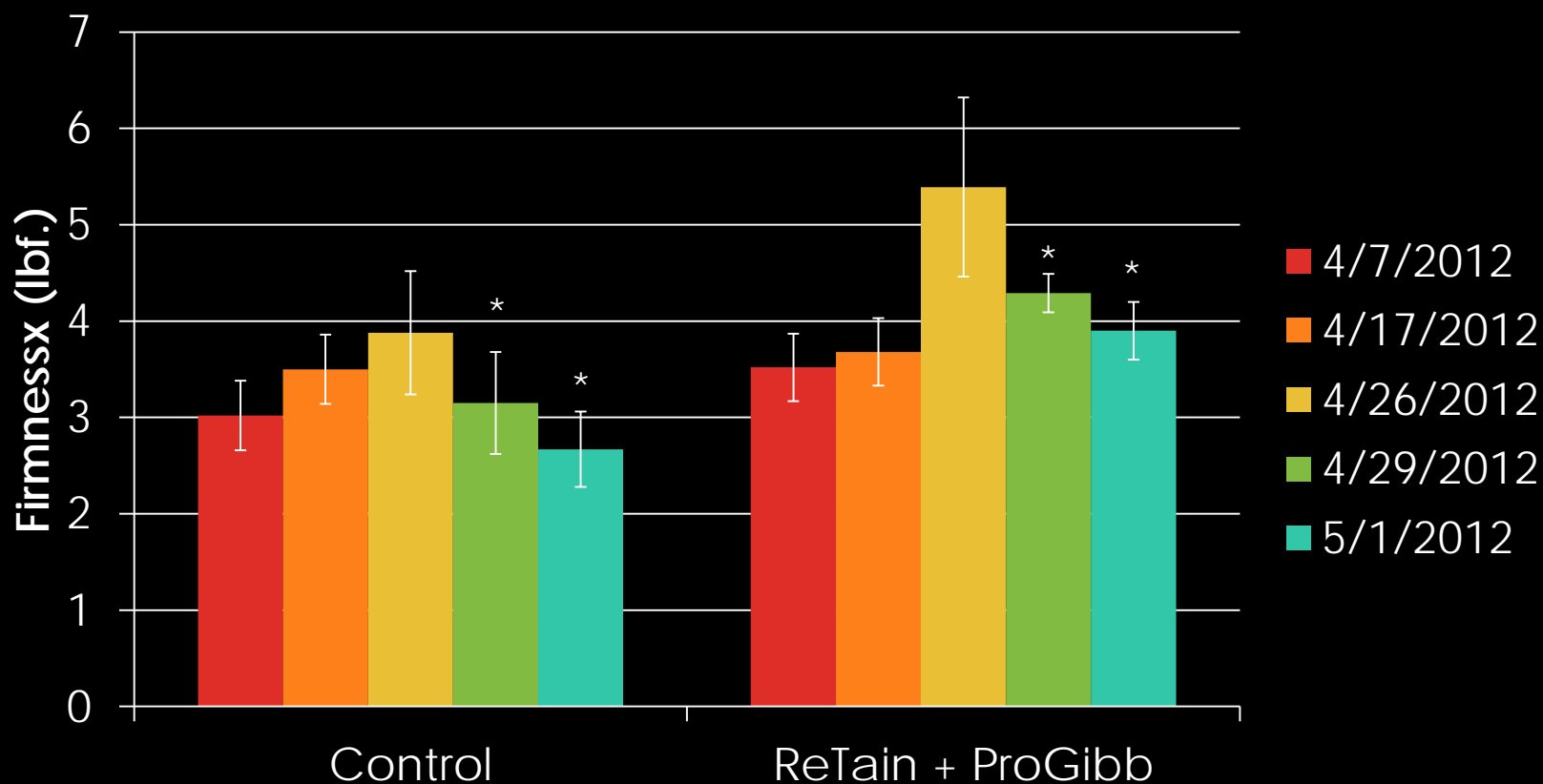
Control – 172.4 lbs. (34.5 lbs./tree)

ReTain + ProGibb – 85.6 lbs. (17.1 lbs./tree)

FARM 2 – 'TROPICBEAUTY' AVERAGE FRUIT WEIGHT



FARM 2 – 'TROPICBEAUTY' FIRMNESS



FARM 2 – BRIX, PH, TA

Date	Treatment	Brix	pH	TA (%)
4/7/12	Control	12.53	4.16	0.50
'UFSun'	ReTain + ProGibb	12.01	4.28	0.44
4/27/12	Control	12.33	3.74	0.79
'TropicBeauty' '	ReTain + ProGibb	12.33	3.72	0.91

FARM 2 – TWO WEEK STORAGE RESULTS

Date	Treatment	Firmness (lbf)	Brix	pH	TA (%)
4/21/12	Control	3.22	12.42	4.34	0.39
'UFSun'	ReTain + ProGibb	3.34	11.94	4.34	0.40
5/21/12	Control	2.41	12.99	3.97	0.54 B
'TropicBeauty'	ReTain + ProGibb	3.72	12.86	3.95	0.61 A

**Days of fruit were stored between 32-34°F for 14-21 days*

OTHER OBSERVATIONS

- Treatments with ProGibb[®] tended to tear less at stem end with 'TropicBeauty'
- Warm spring accelerated fruit phenological stages
 - Small fruit size throughout the state
 - Irrigation challenges
 - Farm 2 – actually applied material 1 week before actual harvest
- Market conditions and harvest times
 - Ideal harvest timing for two treatments?
- Differences due to ReTain[®] or ProGibb[®]?
 - Need separate treatments
 - Melting vs. Non-melting flesh
 - Variety differences?

CONCLUSIONS

- ReTain[®] + ProGibb[®] helped to increase firmness at least two weeks after application
 - Firmness should be due to ReTain
 - Chemical combination
- No effect on Brix, pH, or TA
- Separate chemicals need to be evaluated to determine which increases firmness
 - Potential for fruit size increase with GA