

Peach Production in Florida

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Peaches vs. Nectarines

Peaches = Nectarines!

- What's different about them?
- The “fuzz” is one gene difference in the skin
 - Nectarine = recessive for the gene
 - Naturally occurring

Nectarines tend to be:

- Smaller
- More blush on skin
- Sweeter



Peach Flesh Types

Melting flesh focus

- Juicy
- Shipping problems
- Short shelf-life



Non-melting flesh genes introduced

- Firmer, tree-ripe
- Shipping is easier
- Longer lasting fruit at home
- Consumer bias (firm=unripe)?
 - Need education on new textures



What to Grow?

Peaches, nectarines, and plums

All need a certain amount of “chill units” even though low-chill varieties have been developed



How is a unit of chill defined?

- Unit Definition

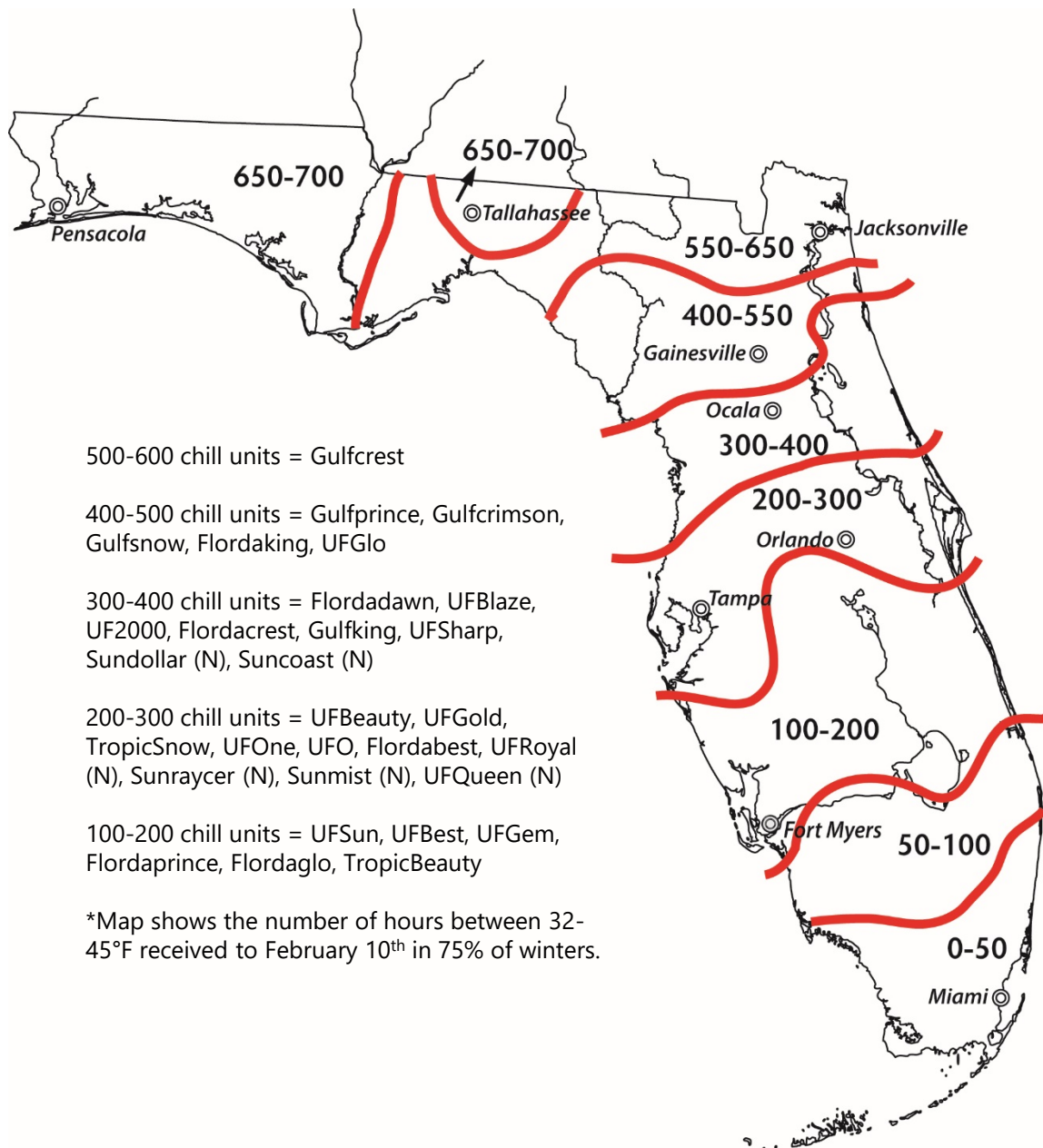
- One unit = 1 hour between 37°F and 48°F (Ideal range)
- Accumulated over a 24 hour period

- Resources

- AgroClimate; <http://agroclimate.org>
- Chill Unit Accumulation for past two weeks

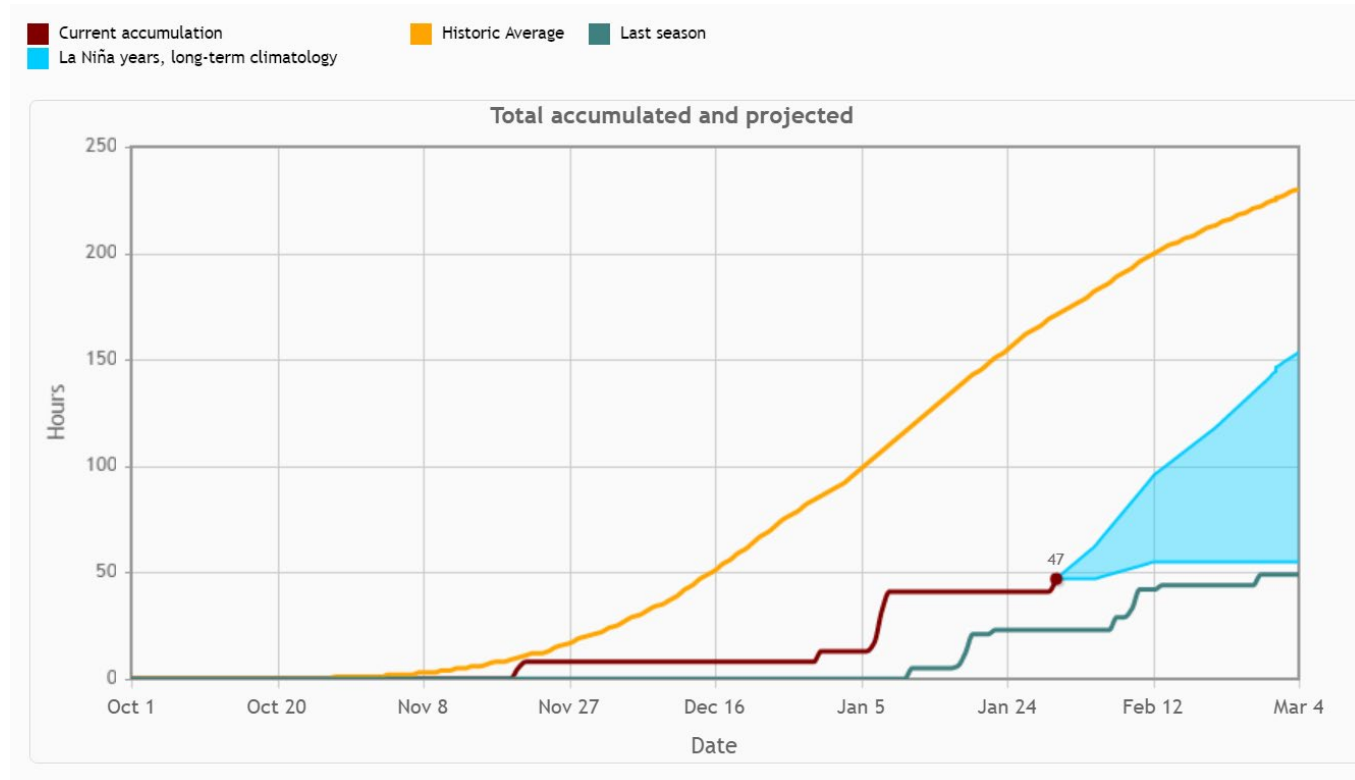
Chill Units and Stone Fruit Varieties

Plant varieties that are 75% of the total chill unit accumulation to get consistent cropping.



Chill Hour Requirements

Accumulation of chill hours is one of the biggest challenge for peach production in central and south Florida



Potential Solutions

Low chill peaches

Hydrogen Cyanamide

'UFSun' and 'UFOne'

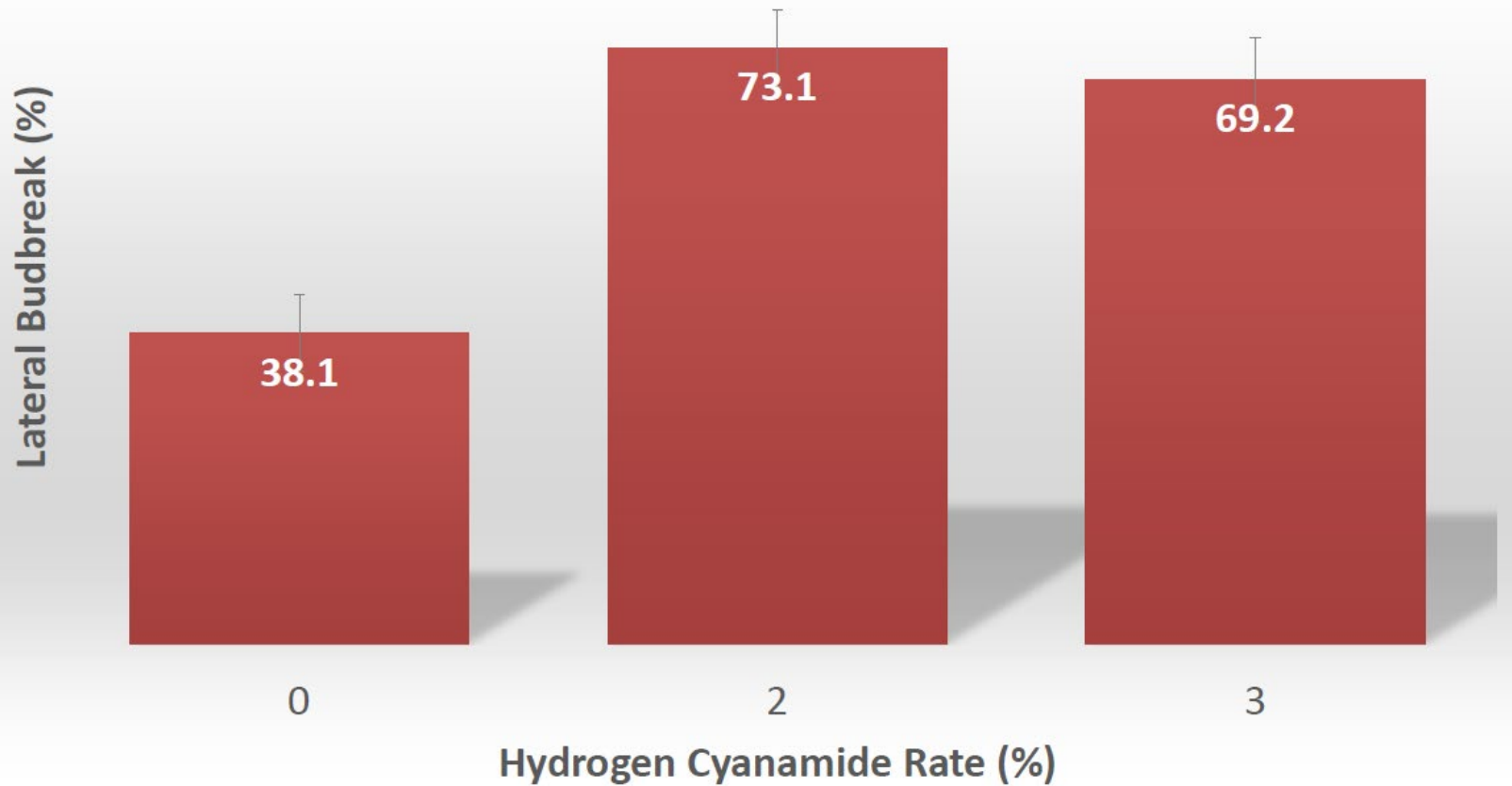
- Dormex® application (v/v)**2% and 3% [OFF LABEL]

Used SilwetL-77 Surfactant

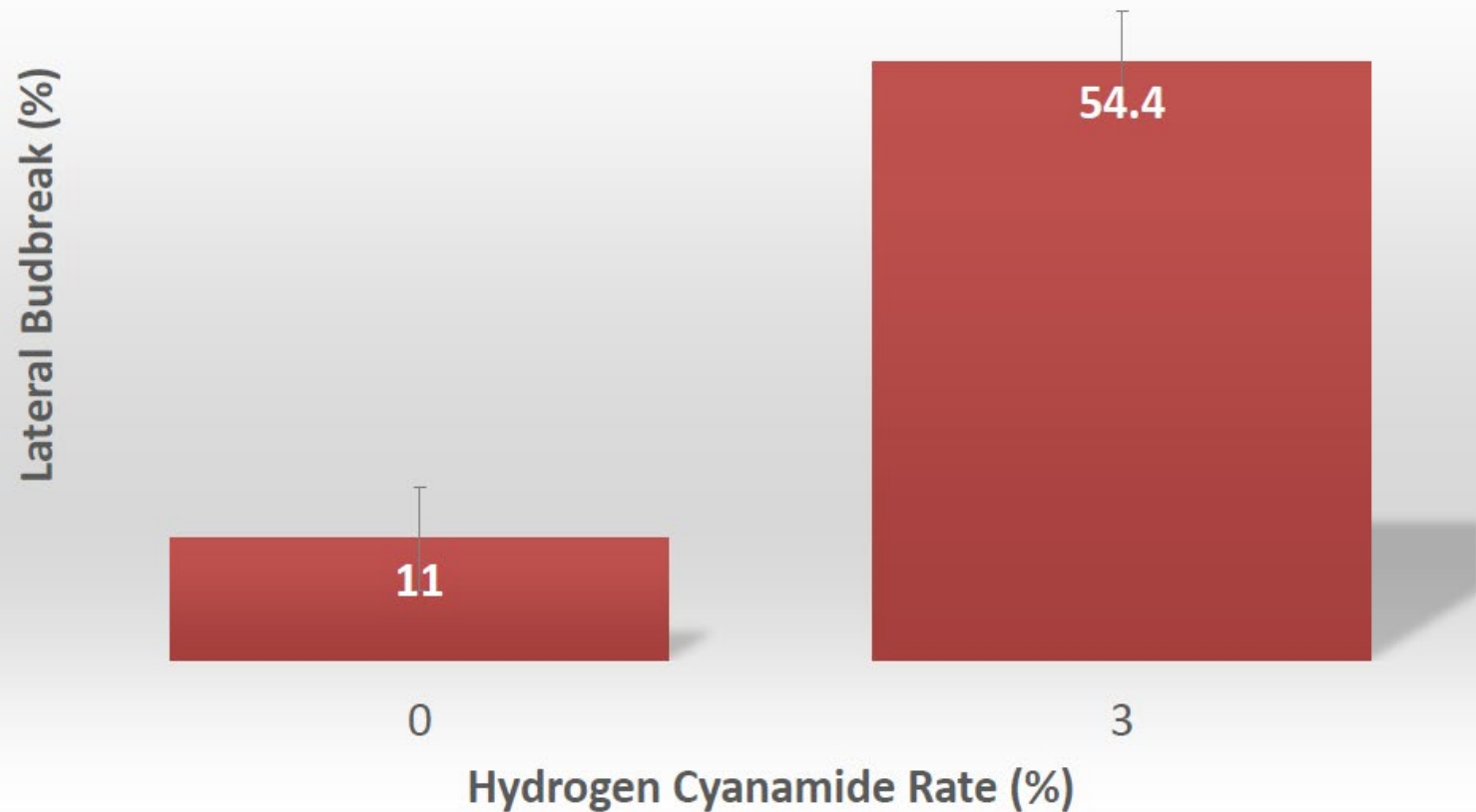
Sprayed at 125 gpa

Application = December (*Jan.*) 17, 20133 weeks before anticipated budbreak

HC on 'UFSun'



HC on 'UFOne'

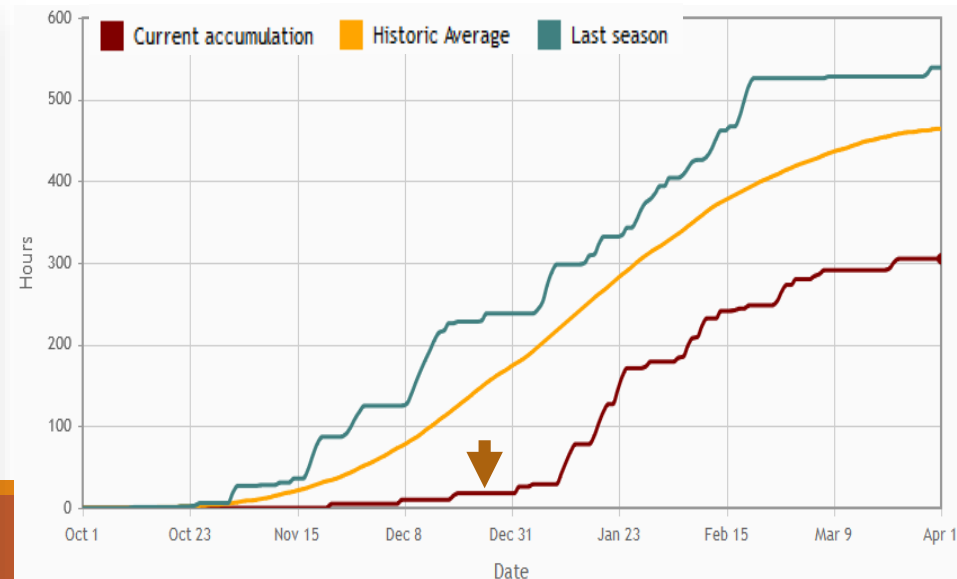


Timing of application of Hydrogen Cyanamide

Tropic Beauty

Trees were defoliated using ZnS

Treatment- Foliar application of 1.2% HC; Control (only water), sprayed on December 22



17 days post HCN application

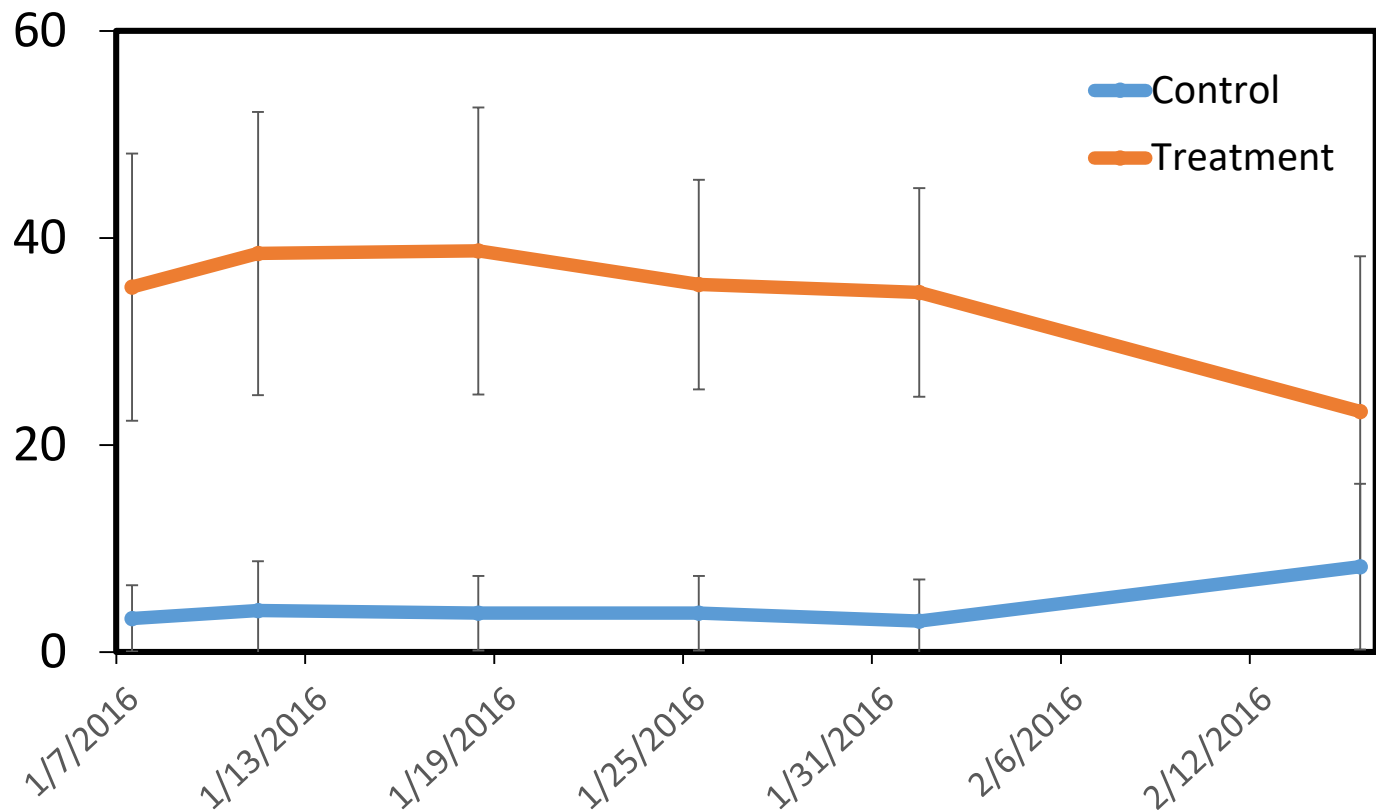
HCN



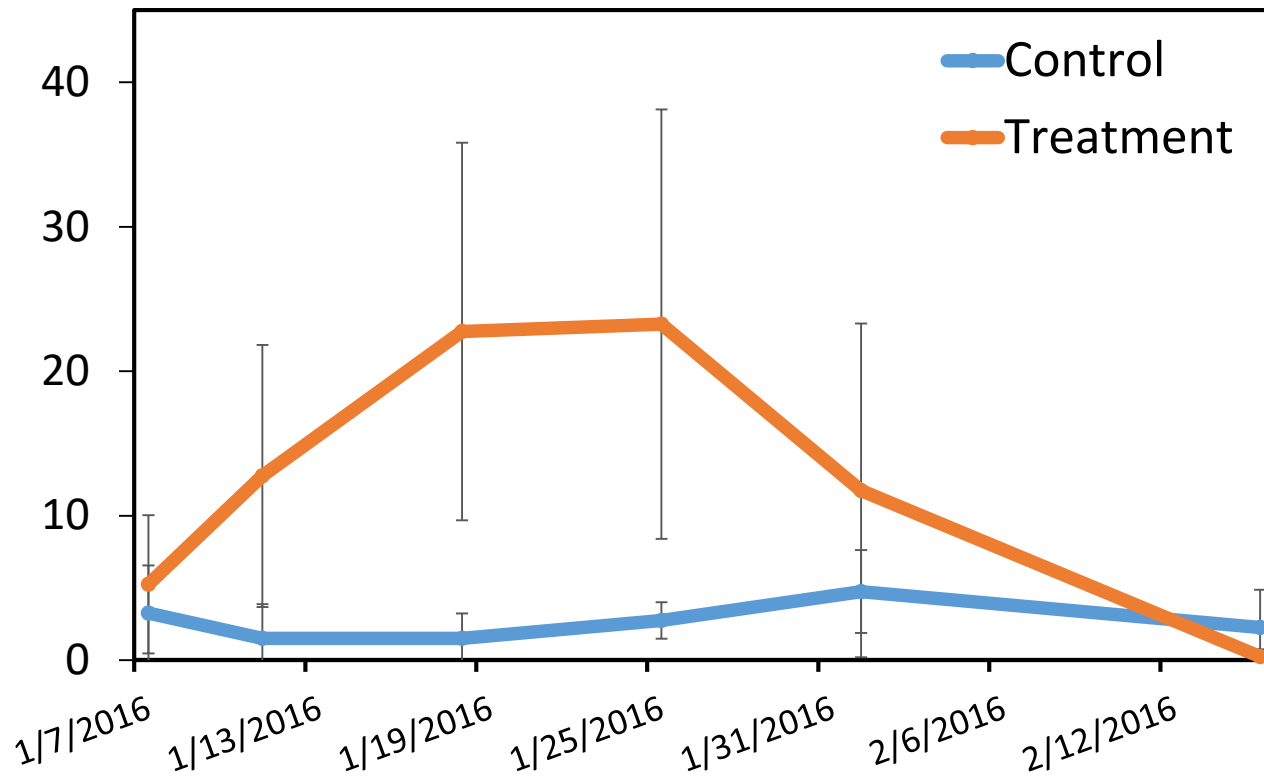
Control



Vegetative Bud Break



Flowers



Hydrogen Cyanamide

HC can be successfully used to induce uniform bud break and flowering in low-chill peaches

In absence of significant chill hours, HC can be beneficial

Pollen grain color can be a good indicator for the time of application of HC

Cultural Practices

Planting & Training Systems

Soil type:

- Sandy, well-drained soil
- Ideal pH: 6.5-7.0

Orchard site may need beds

- Poor site drainage
- Should be at least 18" high to facilitate drainage

Weed-free strip to reduce competition

Tree guards can be useful for herbicide application



Hastings, FL

Tree Densities

Spacing Between Trees	Spacing Between Rows	Total Trees/Acre
15	25	116
15	20	145
10	20	218
10	15	290

Take 43,560 (sq. ft. for 1 acre) and divide by spacing between trees

Then divide by spacing between rows

15 x 25 is standard for citrus groves

15 x 20 standard for new orchard plantings

Frost Protection

Overhead sprinklers

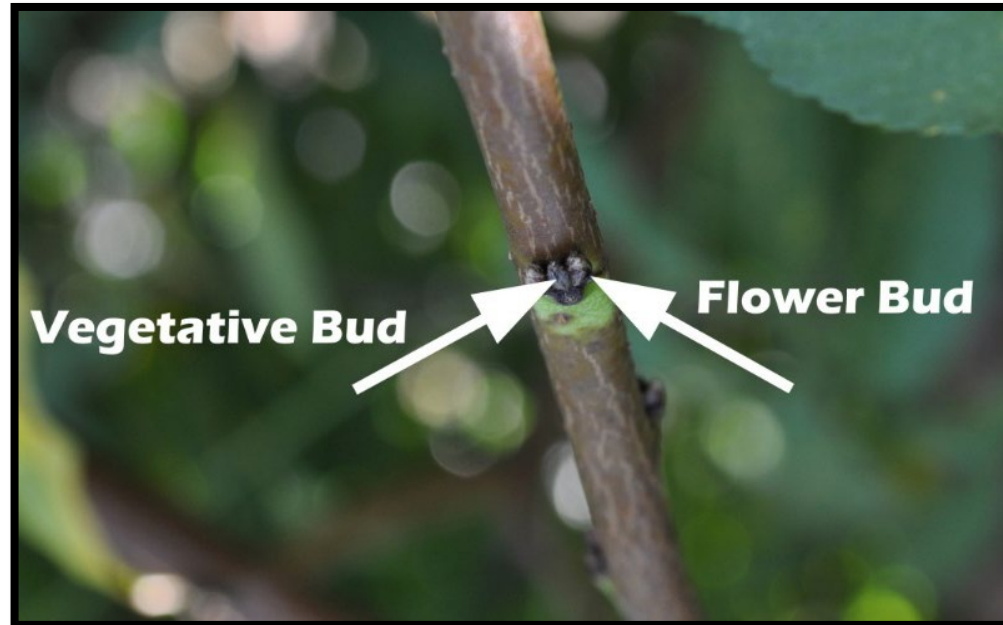
- Heat lost from the trees is replaced by heat released by water as it turns to ice
- Water needs to be continuously applied
 - More damage could occur if not continuously applied
- Not recommended when wind speed is over 10 mph.



Frost Protection

Dry Leaf Temperature (°F)	Wind Speed (mph)					
	0 - 1	2 - 4	5 - 8	10 - 14	18 - 22	30
	Acre-inches per hour needed for freeze protection					
27	0.10	0.10	0.10	0.10	0.20	0.20
26	0.10	0.10	0.14	0.20	0.40	0.60
24	0.10	0.16	0.30	0.40	0.80	1.60
22	0.12	0.24	0.50	0.60	1.20	1.80
20	0.16	0.30	0.60	0.80	1.60	2.40
18	0.20	0.40	0.70	1.00	2.00	3.00
15	0.26	0.50	0.90	1.30	2.60	4.00
11	0.34	0.70	1.20	1.70	3.40	5.00

Peach Growth



Pruning Principles for Orchards

- Develops strong tree structure
- Thins buds to achieve yields of high quality fruit
- Balances cropload with vegetative growth
 - Especially important with short fruit developmental period in Florida (78 days vs. 120 days; temperate climates)
- Development of good-sized fruiting wood vs. blind wood

Pruning Principles for Orchards

Remove diseased or dead limbs

In Florida, two pruning periods:

- Winter
- Summer

UF2000;
Botryosphaeria



Blind Wood



Blind Wood = No leaves to support current season's fruit, no buds to produce future shoots

- More prevalent with fast, vigorous growth

Pruning Principles for Orchards

Reduces canopy temperature by increasing airflow (directly)

- Can reduce incidence of doubling fruit

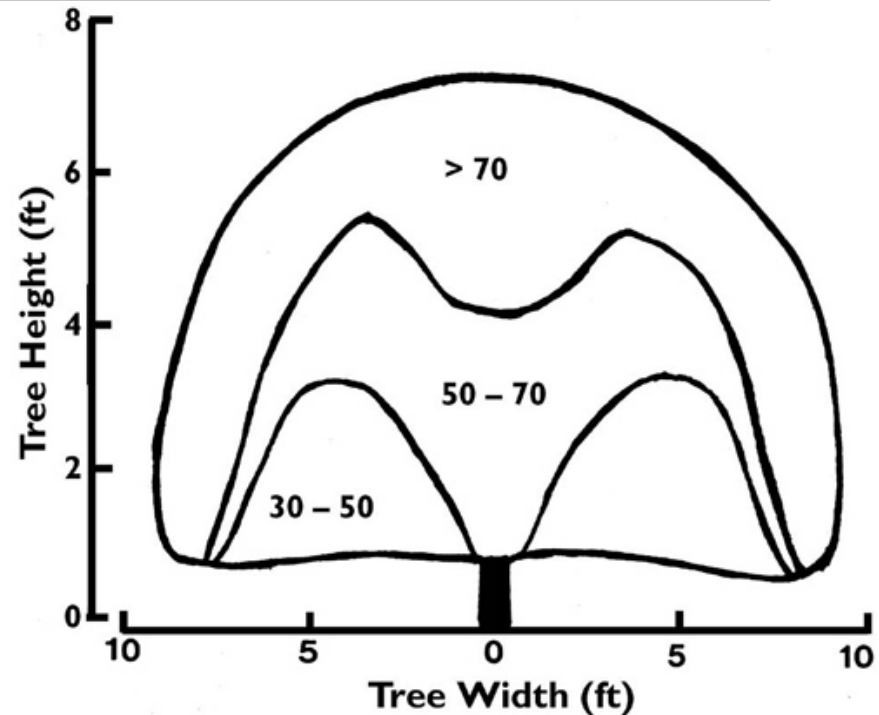


Open Vase Training System

Mature trees must be managed to optimize sunlight interception

Avoid sunburn!!

- Leave a few upright shoots in canopy center during summer pruning



Open Vase Training System

Traditional System

- In other locations –6-8 years for trees to fill in spaces
- Florida = ideal growing conditions with 7-8 feet of growth per year

Trees trained to 3-4 scaffolds

- Cover each quadrant to optimize light interception

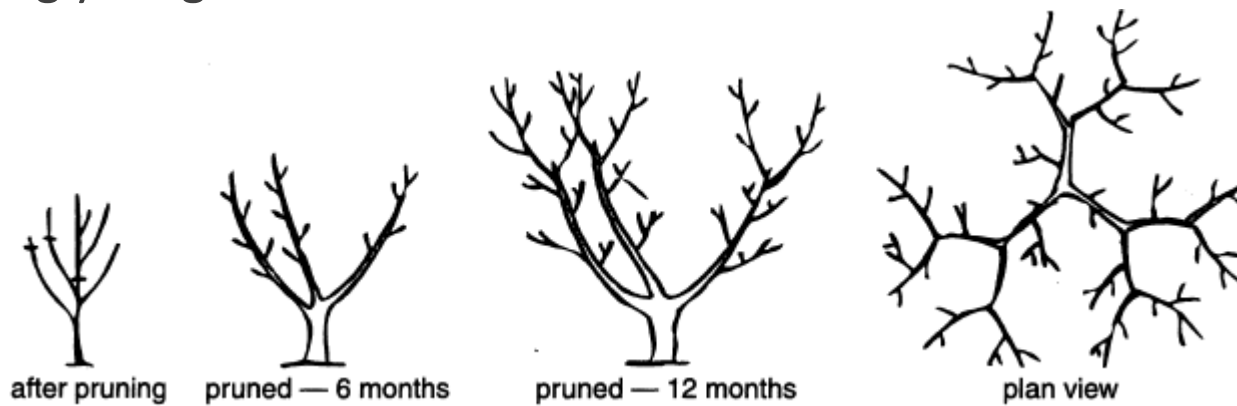
Tree height set at 8 feet

- Optimize activities without use of ladders



Open vase

Pruning young trees:



Year 1



Year 2

Before & After (Winter):



FlordaPrince vs. TropicBeauty



Upright Growth



Semi-spreading Growth

Types of Pruning Cuts

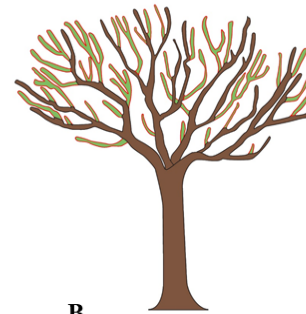
Thinning Cuts

- Reduce branch number
- Encourage apical shoot elongation



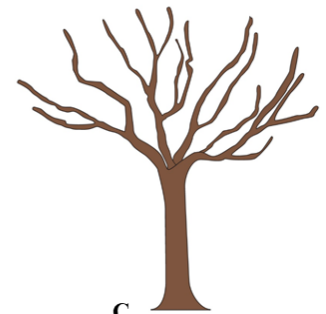
A

Figure 2a: Tree before pruning



B

Figure 2b: Thinning Selective removal of branches (green and red)

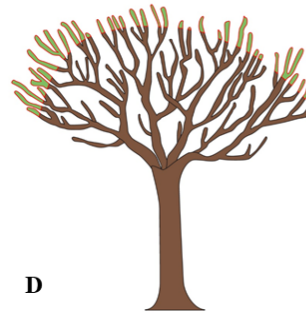


C

Figure 2c: Thinning Open canopy

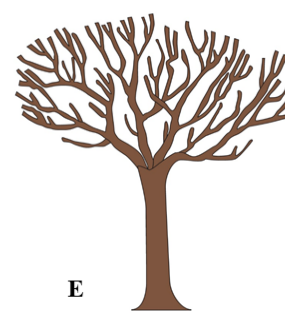
Heading Cuts

- Invigorate the tree
- Increase branching by causing lateral bud break



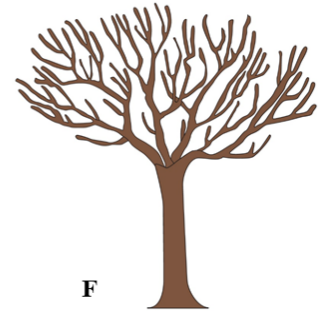
D

Figure 2d: Heading Back
Non-selective removal of terminal portion of branches (green and red)



E

Figure 2e: Heading Back
Terminal portion of branches is removed



F

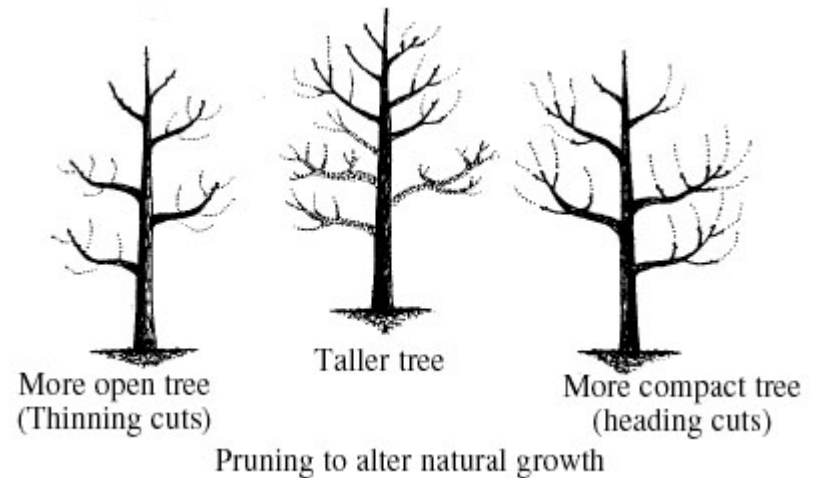
Figure 2f: Heading Back
After heading back, new lateral growth

Pruning Summary

Prune to maintain productive tree

Heading cuts can result in thinner fruiting wood

Thinning cuts should be the majority of those made in each season.



Peach/Plum Flowering

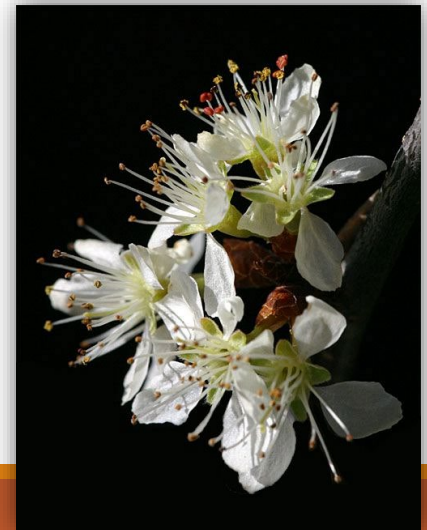
Peaches and Nectarines do not need pollinizers

- They are self-fertile
- Do not need hives to pollinate
- Native populations set adequate fruit



Plums need pollinizers

- All three varieties can work as pollinizers
 - 'Gulfrose'
 - 'Gulfblaze'
 - 'Gulfbeauty'



Fruit Thinning

Peaches and nectarines must be thinned to get large fruit size

- Plums only thinned if too heavy for branch

Should be thinned before pit hardening

- Otherwise, won't make difference in fruit size

Thin to at least 6" between each fruit





Good balance with crop and canopy

Not thinned

Tree on left has ideal cropload and canopy growth

Tree on right has heavy cropload, poor canopy

Thinning and pruning are important for cropload management

Fertilization

Use a balanced 10-10-10 fertilizer

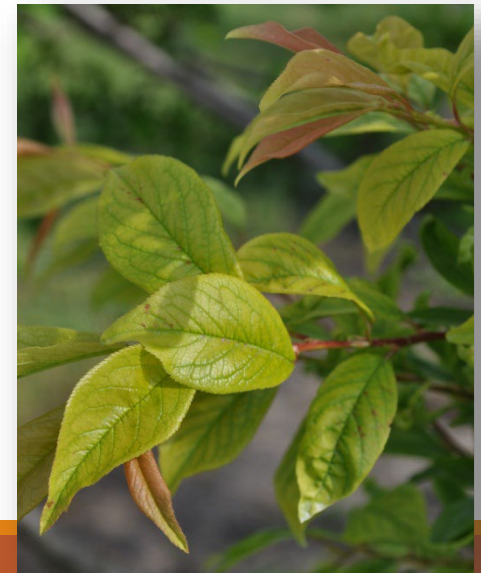
- 1st year: 11-12 lbs N/ac
- 2nd year: 26-39 lbs N/ac
- 3rd year: 80-110 lbs N/ac

Sandy soils: 12-4-8 fertilizer

- Minimizes potassium and phosphorus leaching

Zinc deficiency shows up readily in sandy soils with higher pH

- Plums more sensitive to it
- Yellowing leaves, green veins, short internodes



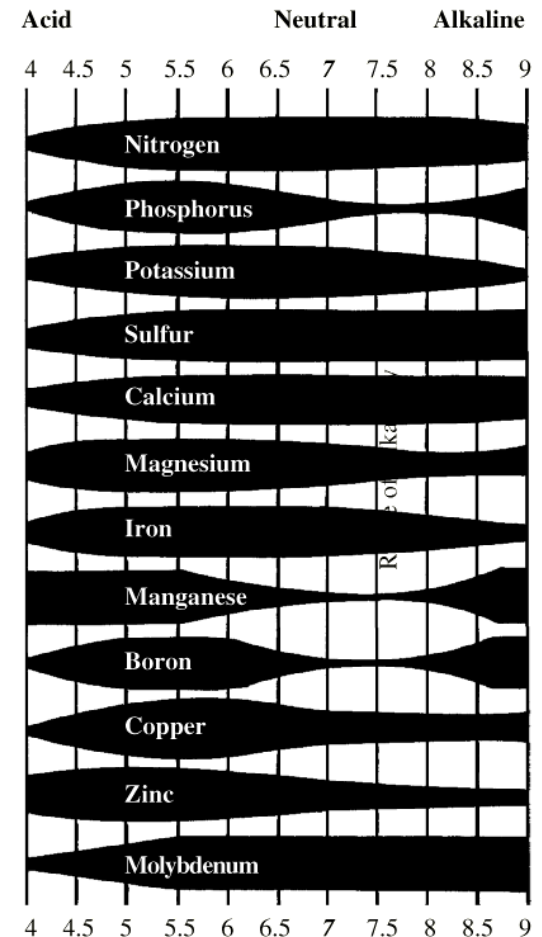
Impact of pH on Nutrients

pH affects nutrient availability

- The thicker the bar, the more available the nutrient

Solutions with high pH water?

- Acidify the water source
- Monitor soil pH and acidify as necessary
- Apply fertilizers with sulfur to bring pH down



Nitrogen Requirement

According to trials conducted by Dr. Mercy Olmstead:

- Fruit yield is not affected in range of 80-160 lbs. N
- Fruit size differences depended upon year 2013 (160 lbs./A), 2014 (80 lbs./A)
- Cropload differences
- *Reduce amounts to around recommended rates of 100-125 lbs. N/A depending upon tree growth and system*



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Thank you!