



Sustainable Floridians
May 12, 2016

Farming in Palm Beach County



Chris Miller
UF/IFAS PBC Ext
Vegetables &
Tropical Fruit

Palm Beach County Ag

National production leader



Palm Beach County Ag

National production leader



Sugarcane



Sweet corn



Sod

Palm Beach County Ag

State Leader



Palm Beach County Ag

State Leader

Bell peppers

Lettuce

Specialty leaf

Celery

Radishes

Chinese vegetables

Rice



LEADS
FLORIDA

PBC Commercial Agriculture is Big Business

Leads all counties east of the Mississippi River

2013-14

- \$1.327 billion
- 456,001 acres



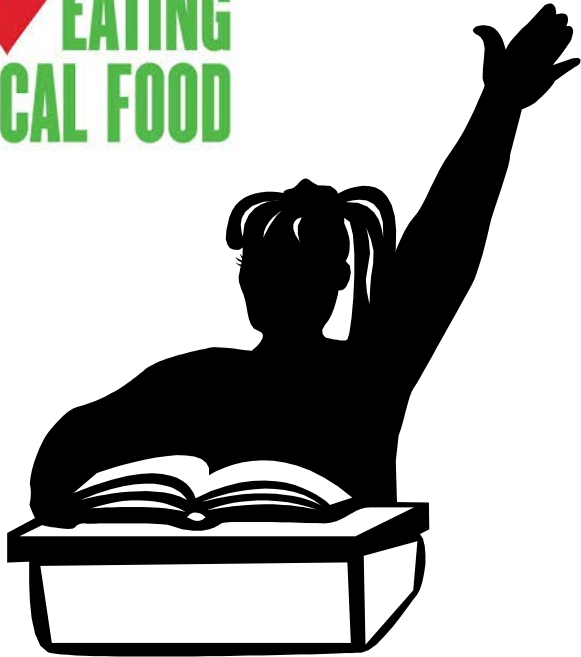
2010-11

- \$1.42 billion
- 459,865 acres



What makes south Florida so special?

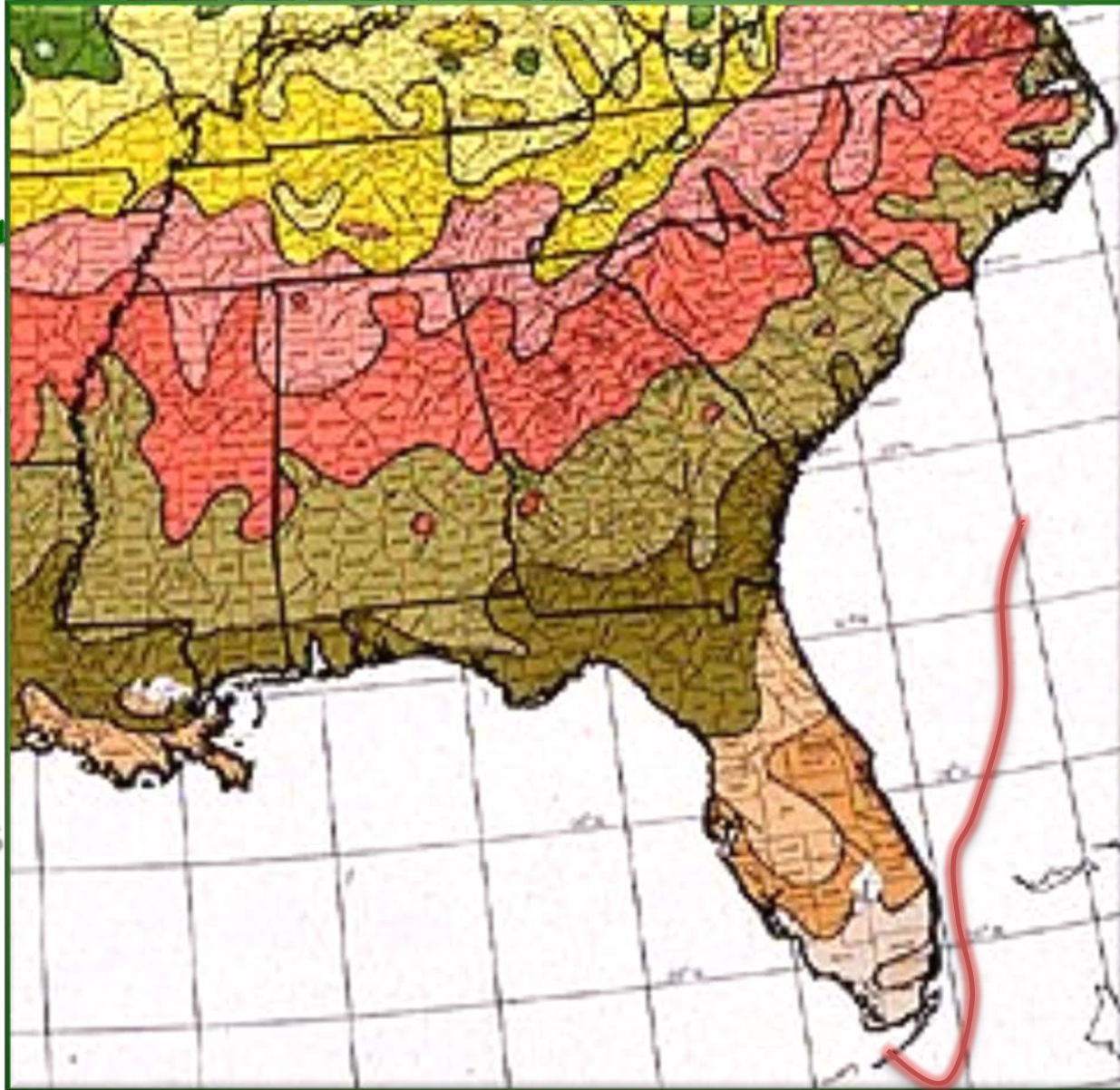
I ♥ EATING
LOCAL FOOD



SOUTH

Temperate
Sub-Tropical
Tropical

FLORIDA



- Palm Beach County
- Micro-Climates
 - 9b to 10b
- Chilling Hours
 - 75 to 150 hr
- Rainfall
 - 50 to 60 inches
- Gulf Stream
- Warmer temps

South Florida Seasons: (2) Warm + (1) Cool



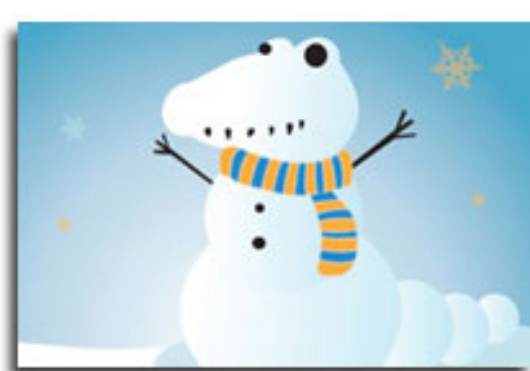
Fall: September – November

Spring: March - May

- Pepper, Sweet potato, Watermelon, Cantaloupe, Sweet corn, Beans, Cukes, Eggplant, Okra, Squash, Tomato

Winter: December – February

- Celery, Lettuce, Endive, Escarole, Radish, Carrots, Cabbage, Chinese/Napa cabbage, Broccoli, Cauliflower, Peas, Kale, Mustards, Spinach, Collards, Turnip





Tropical Fruit

A

Summer
Crop
Option

- Seasonality of local fruit -

Yellow = limited availability

Pink = peak season

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Annona	Yellow	Yellow	White	White	White	Yellow	Pink	Pink	Pink	White	White	White
Avocado	Pink	Yellow	White	White	Yellow	Pink	Pink	Pink	Pink	Pink	Pink	Pink
Banana	Yellow	Yellow	Yellow	Yellow	Pink	Pink	Pink	Pink	Pink	Yellow	Yellow	Yellow
Caimito	Yellow	Pink	Pink	Pink	Pink	Yellow	White	White	White	White	White	White
Pitaya	White	White	White	White	White	Yellow	Yellow	Pink	Pink	Pink	Yellow	White
Guava	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Pink	Pink	Pink	Yellow	Yellow	Yellow
Jakfruit	White	White	White	White	White	Yellow	Pink	Pink	Pink	Pink	Yellow	Yellow
Longan	White	White	White	Yellow	Yellow	Yellow	Yellow	Pink	Pink	Yellow	White	White
Lychee	White	White	White	White	Yellow	Pink	Yellow	White	White	White	White	White
Mamey Sapote	White	White	White	Yellow	Yellow	Pink	Pink	Pink	Yellow	Yellow	White	White
Mango	White	White	White	White	Yellow	Pink	Pink	Pink	Pink	Yellow	Yellow	White
Papaya	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Pink	Pink	Pink	Pink	Yellow	Yellow
Passion Fruit	Pink	Yellow	White	White	Yellow	Pink	Pink	Pink	Pink	Pink	Pink	Pink
Sapodilla	Pink	Pink	Pink	Pink	Pink	Pink	Yellow	Yellow	White	White	Pink	Pink
Starfruit	Pink	Pink	Yellow	White	White	White	White	Yellow	Pink	Pink	Pink	Pink

South Florida Fruit Options

Temperate fruit

Apple
Blackberry
Blueberry
Jujube
Figs
Muscadine grape
Peaches nectarines
Pears
Pecan
Persimmon
Plums
Pomegranate Raspberry

Sub Tropical Fruit

Atemoya
Avocado
Banana
Caimito (Star Apple)
Canistel
Carambola
Coconut palm
Coffee
Dragon Fruit (Pitaya)
Guava
Jaboticaba
Jak-fruit
Jujube
Longan
Loquat
Lychee
Macadamia Nut
Mango
Pineapple
Sapodilla
White sapote

Tropical Fruit

Avocado
Banana
Barbados cherry
Black sapote
Caimito (Star Apple)
Canistel
Citrus
Cocoa
Coconut palm
Coffee
Dragon Fruit (Pitaya)
Guava
Jaboticaba
Jak-fruit
Jujube
Longan
Mamey sapote
Mango
Monstera
Papaya
Passion fruit
Pineapple
Sapodilla
Sugar apple
White sapote

PBC Rare Fruit Council

Plant Sale this Weekend

9:00 AM – 2:00 PM

South Florida Fairgrounds

Enter from Southern Blvd. Through Gate 5

Free parking

Free Admission

1000's of plants to choose from:

Avocado, Bananas, Barbados Cherry, Black Sapote, Canistel, Carambola, Citrus, Dragon Fruit, Figs, Guava, Grumichama, Jackfruit, Jaboticaba, Longan, Lychee, Macadamia, Mamey Sapote, Mango, Mulberry, Papaya, Peach, Persimmon, Sugar Apple, Star Apple, Tamarind, Herbs & Spices, Specially formulated Fertilizer and much much more!



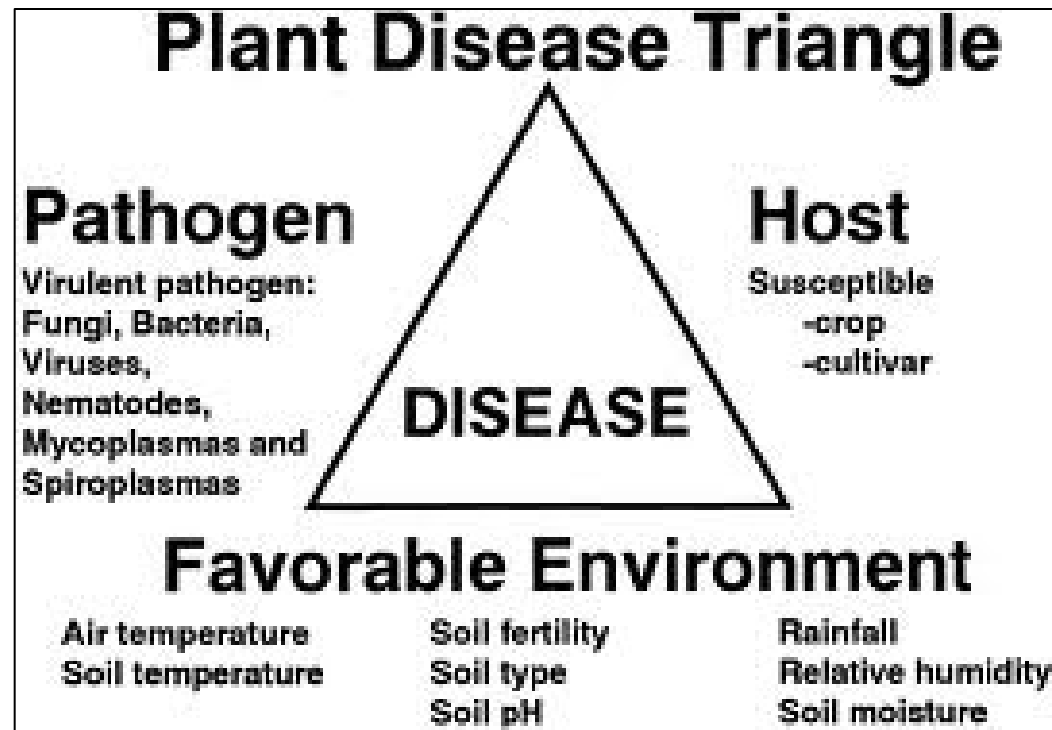
RFC

2nd Friday
monthly

7:30 PM
Mounts
Auditorium

South Florida -Summertime-

- Few crops do well
 - Daily rain
 - High humidity
 - Hot, Hot, Hot!!!
- Summer Crops:
 - Cane, Rice, Okra, Tropicals
- What else to do?
 - Cover crop, fallow, flood
 - Maintain fields, equip
 - Planning, training
 - Rest, vacation



PBC Agriculture: Many Crops Grown

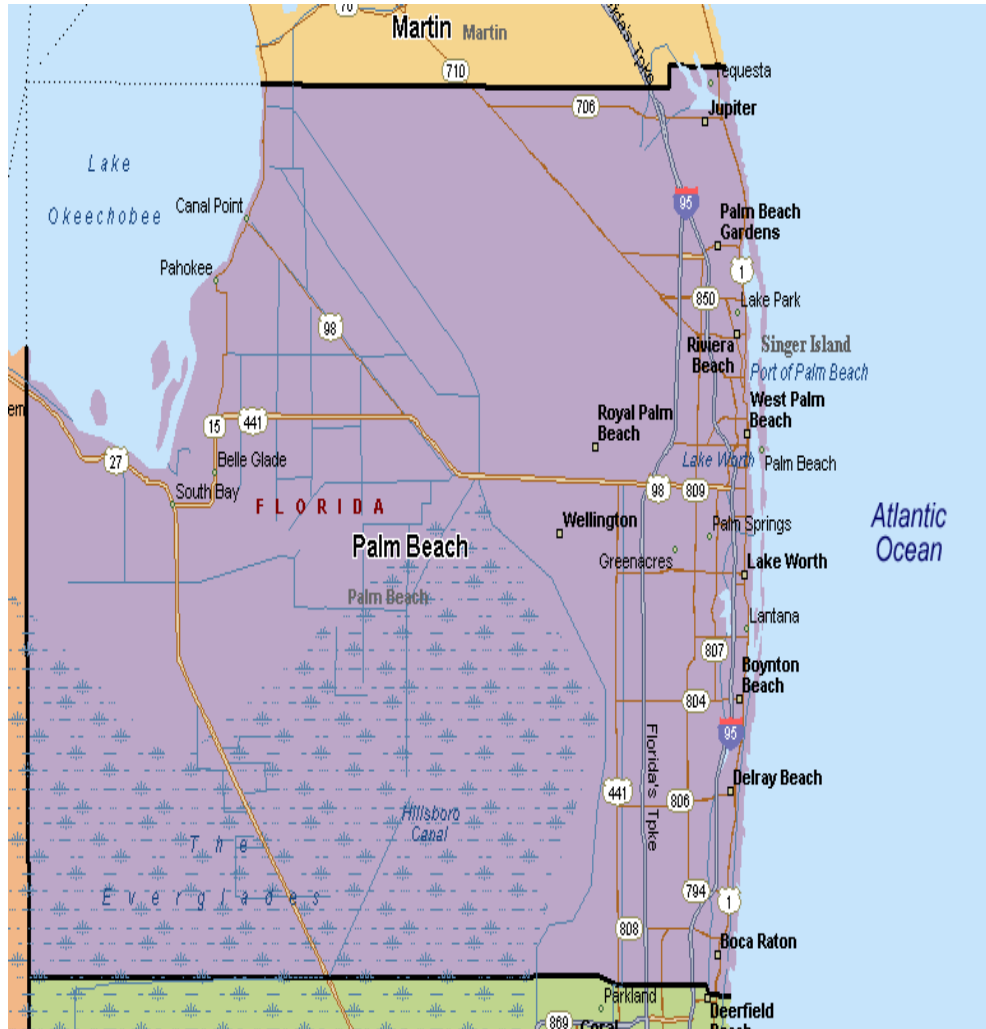
-Two Soil Types-



Muck

Sand

Palm Beach County Agriculture -Sandlands-



- Eastern PBC
- Very low OM
- Very low nutrients
- Alkaline soil pH
- Nematodes

Nematodes

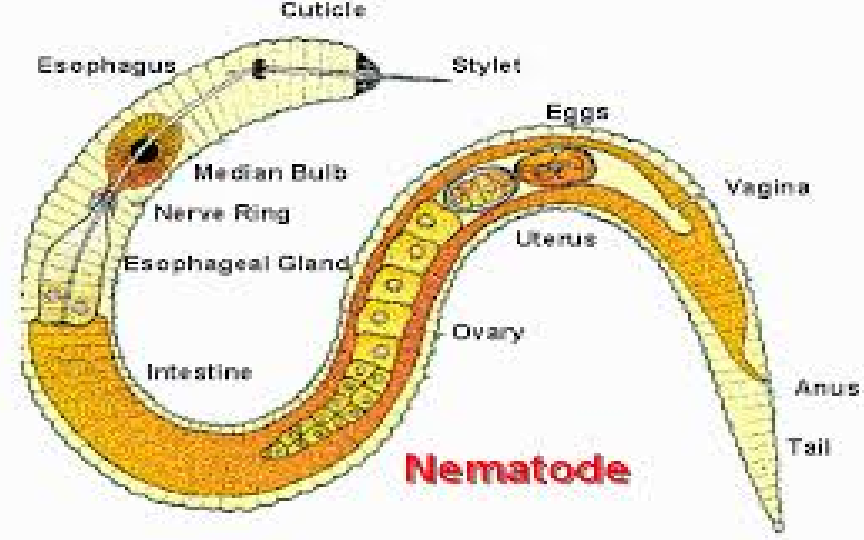
- **Microscopic worms**

- Mostly slender
- Range: 0.25 - 3.0 mm (1/100-1/8 inch) long
- Females of some species lose their worm shape as they mature
 - Root Knot Nematode, Soybean Cyst Nematode

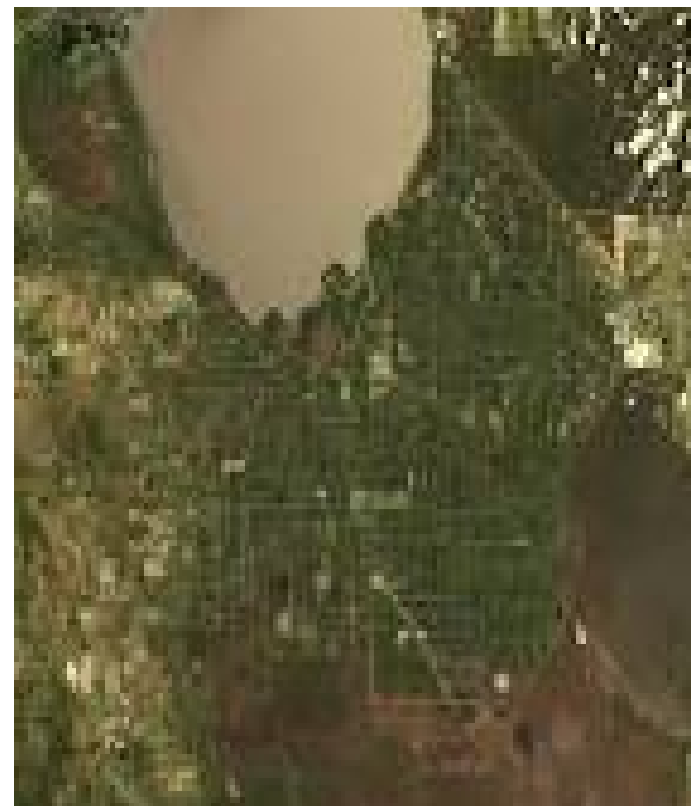
- **Attack all crops grown in Florida: lawns, ornamentals and home gardens**
 - Cause farmers millions of dollars losses

- **Management**

- Prevention
- Crop rotation
- Crop root destruction
- Flood/Fallow
- Resistant varieties
- Pesticides



Palm Beach County Agriculture -Muck Soil-



- Western PBC
- High OM
- High N
- Slightly acidic pH
- Subsidence

Everglades Agricultural Area

Everglades Agricultural Area (EAA)

-Sugar is King-



Everglades Agricultural Area (EAA)

-Sugar Governs Everything-

Sugarcane 101

- Is a grass
- Some varieties on muck, others on sand
- Small pieces (8-10") planted by hand
- About 1 year to mature
- Crop burned before harvested
- Harvested by machine
- Stalks cutoff at soil level
- Roots remain to sprout new foliage/canes
- 1 planting harvested 3-4 times before rotation
- Crop rotational period is when land opens to
 - Vegetables, Rice, Fallow



EAA Farming has a Long History



Historical EAA Farming



Mixing Pesticides
Personal Protective
Equipment:
hands, eyes, mouth





EAA

Juke
Joint

Historical EAA Farming



New Food Safety Law

Food Safety

- Dynamic
- Costly
- Field, packinghouse, transport
- Driven by buyers
- People, pests, foreign objects

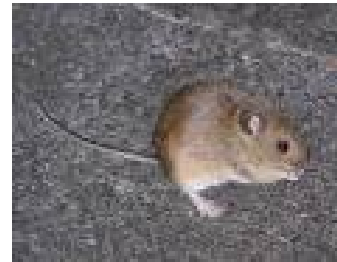


Agriculture Safety

-Protects-
Workers &
Consumers



Vertebrates: Potential Health Threats



Food Safety Focuses on Risk Reduction

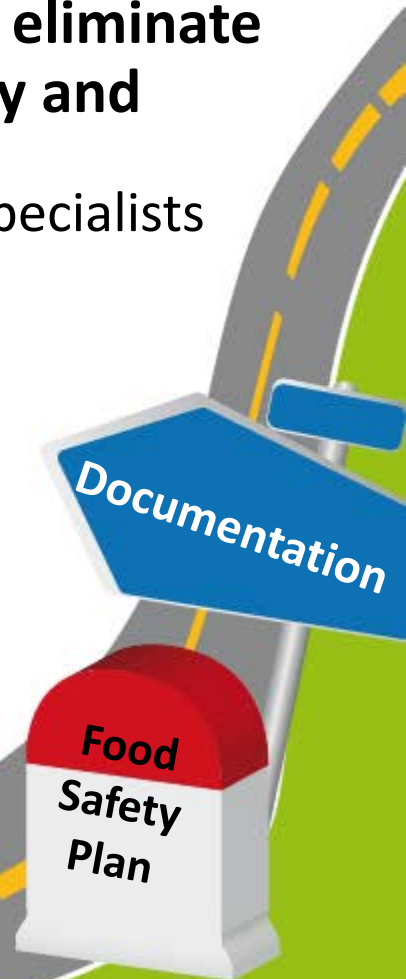
Prevention - best method to eliminate human pathogens on produce.

- Washing/sanitizing efficiencies are not 100%.
- At the present time, no mitigation method will totally eliminate pathogens without adversely affecting produce quality and freshness.

Food Safety Plan Areas of Focus:

- Water
- Manure & Municipal Bio-solids
- Worker Health and Hygiene
- Sanitary Facilities
- Field Sanitation
- Packing Facilities
- Transportation
- Traceback

- Created by self, software, specialists
- Not required for all farms
- Buyer driven
- Site specific
- SOPs developed
- Impacted by neighbors
- Audits – Self, Customer, 3rd Party, Regulatory (FL Tomato GAPS), Globally Recognized



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Plant Disease Triangle

Pathogen

Virulent pathogen:
Fungi, Bacteria,
Viruses,
Nematodes,
Mycoplasmas and
Spiroplasmas

Host

Susceptible
-crop
-cultivar

DISEASE

Favorable Environment

Air temperature
Soil temperature

Soil fertility
Soil type
Soil pH

Rainfall
Relative humidity
Soil moisture



Sustainability in the PBC Growing Season

- Land prep starts at the end of the rainy season
 - Moist soil utilized for planting, bedding, and maintenance
 - Dry season helps limit certain diseases from developing
- Cultural Practices
 - Variety Selection, Clean seed, Crop Rotation, Mill Mud, Sanitation, BMPs
- Fertilizer based on soil/crop testing
 - Types, rates, placement
- Scouting
 - Inspections, ID, quantification, recommendations
- Management tactics based on thresholds
 - Cost/benefit analysis, EIL, Action Threshold
- Pesticides
 - Last option
 - Lowest effective rate
 - Selective



UF/IFAS EREC

Data
to make
informed
decisions

Some Insect Pests of PBC Vegetables



Some Diseases of PBC Vegetables



Harvesting

-Some Mechanical-



Harvesting -Mostly Manual-



Labor is an
ongoing issue
H-2A helps



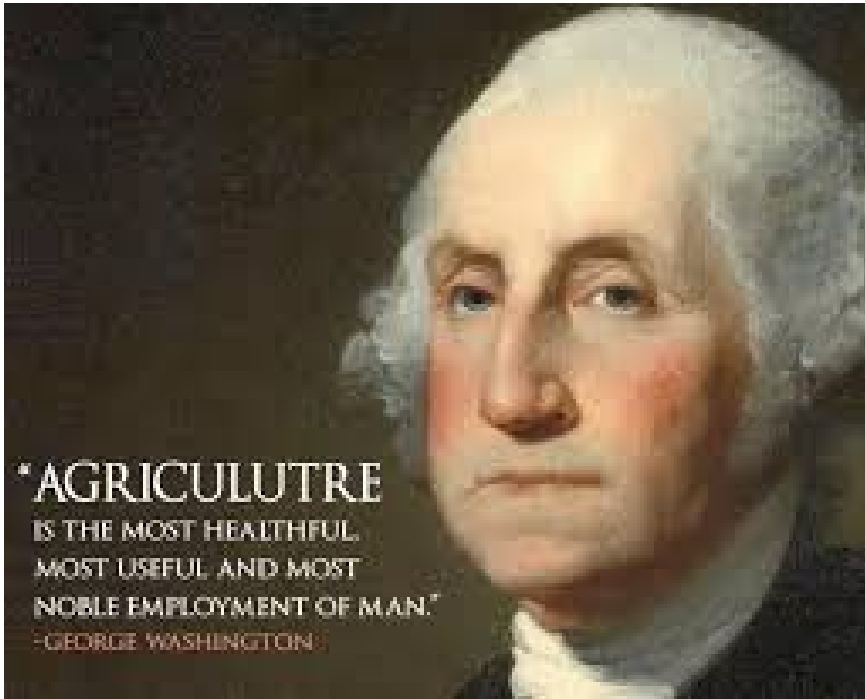
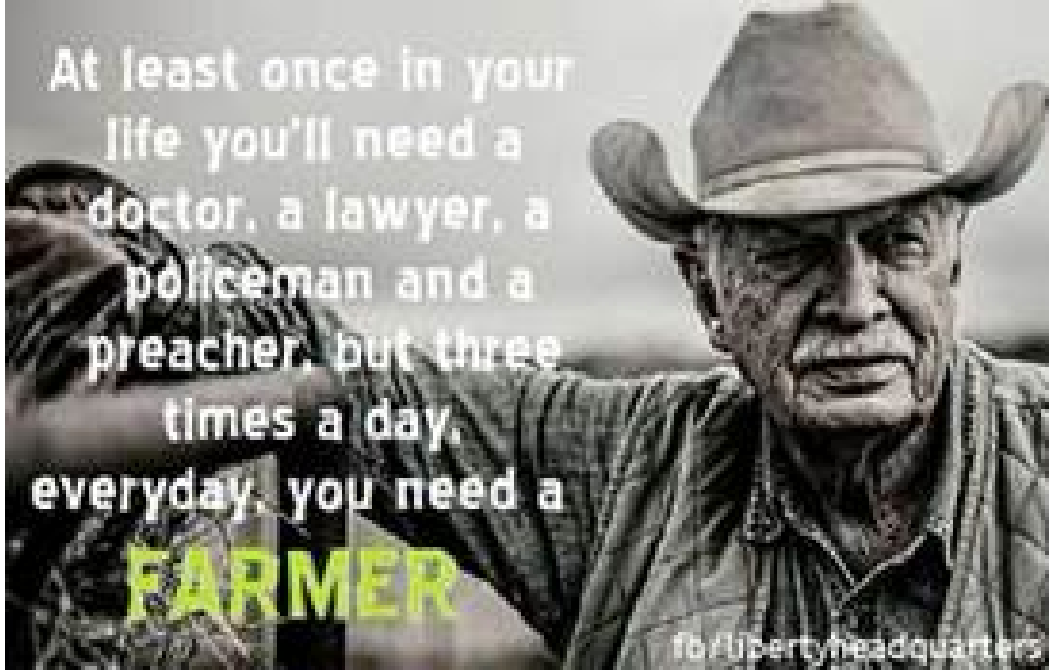
EAA Historical Sweet Corn Harvesting



Mule Train

**Some
things
stay the
same**

Any questions?



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