Introduction Process and Treatment

- Locate Source of New Germplasm
- Risk Assessment
- Germplasm Arrives as Budwood
- Budwood is Grafted
- Therapy is Performed
- Indexing and Testing are Conducted
- Healthy Germplasm is Released From Quarantine
- New Varieties are Evaluated
Treatment: Full Protocol

Full Protocol
30-35 months

- Grafted in Greenhouse
- Pre-index (optional)
- Two Therapies
- Mid/Post Indexing & Testing
- “Healthy” Germplasm
- 7-12 month-old Plant
- Release from Quarantine
- Variety Evaluation
- Field Testing

Full Protocol:
Budstick 24 or less months

- Budsticks Sprouted at 32°C
- No Pre-index
- Therapies combined
- Post Indexing & Testing
- “Healthy” Germplasm
- 20 month-old Plant
- Release from Quarantine
- Variety Evaluation
- Field Testing

Florida Department of Agriculture & Consumer Services
Division of Plant Industry
The Florida Citrus Budwood Protection Program

1953 - 2003
Fifty Years of Protection and Productivity

Mission Statement

Assist growers and nurserymen in producing citrus nursery trees that are horticulturally true to varietal type, productive, and free from certain recognizable bud-transmissible diseases detrimental to fruit production and tree longevity
Program History

Bureau of Citrus Budwood Registration

• Program started voluntary in 1953
• Program became mandatory in 1997
  – Initiated by the Florida Citrus Nurserymen’s Association
• Nursery regulations required total protection of all budwood sources and nursery stock in 2007 – under cover plus requirements
  – Endorsed by all major citrus grower organizations in Florida
What is Budwood?
Bud Union Problems

Decline

Incompatibility
Graft-transmissible pathogen indexing

Testing
- Greenhouse
- Laboratory

Detection
Florida’s Citrus Nurseries

• 42 nurseries produced 3.5 million trees in 2008

• The average citrus nursery produces 84,000 trees

• Citrus nurseries use over 5,000 scion trees to produce 48% of their propagating material

• Nurseries utilize increase blocks for 50% of their budwood
Chiefland Foundation Greenhouses

Clean start for all citrus nursery stock
Citrus Repository at Boston Farm

Exit I-75 at Exit 404, turn east on 236 for 3 miles to 241, turn north on 241 for 3 miles. The Boston Farm-Santa Fe River Ranch Beef Unit is on the right, before the river.

Research being conducted includes animal breeding, herd health, management, nutrition, parasitology, and reproductive physiology.

Florida Department of Agriculture & Consumer Services
Division of Plant Industry
Commercial Citrus Nursery Stock Certification Program

Important Elements:

• All citrus nursery stock production is under cover
• Entryways are double-door airlocks, positive air pressure
• Inspection every 30 days of plants and structures
• Sanitation emphasis in all regards (CC & HLB)
• Source tree testing
• 1 mile from any known outside citrus
• Cooperative work effort between nurserymen and regulators
  • So far, so good with no breaches
National Citrus Germplasm Passport Program

Conceptualization of a National Citrus Germplasm Passport Program for exchange of citrus varieties between germplasm certification and testing programs in citrus-producing states (CGIP, NCGRCD, CCPP)

We developed through many meetings minimal standards and co-wrote underlying background information and documentation that formed the foundation to the passport concept

Florida Department of Agriculture & Consumer Services
Division of Plant Industry
Budwood must come from protected sources (greenhouse or insect-proof screen house)

Using these standards, the period of time from shipment to use by industry and risk of pathogens is minimized

All imported material must be accompanied by a completed history matrix and other appropriate regulatory entry documents per state

Preparation of material prior to sending and receipt procedures were delineated

17 diseases+ were identified of special interest and prescribed core tests were agreed upon for the minimum standards
Citrus Passport: 6-12 months

- Protected clean source from approved programs
- Health Records
- Budwood will be grafted on various rootstocks
- No Therapy
- Greenhouse observation
- Minimal bio-indexing
- Maximum molecular testing
Thank you for your attention