



**Report**

**National Citrus Breeding Collaboration Meeting**

**Denver, Colorado  
February, 27<sup>th</sup> and 28<sup>th</sup>**



# CRB/CRDF/USDA- funding agency situation

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- HLB resistant citrus – long-term solution
- Significant investment in breeding for HLB resistance
- Funding agency accountability –State and Federal, Industry
- Improved communication among agencies – coordinated effort
- Strategize to accelerate development of resistant varieties



# Meeting purpose

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- Identify research, IP, tech-transfer, gov't regulatory and commercialization barriers to collaboration and development of HLB resistant citrus.
- Agree on and implement strategies to address the issues
- Agree and develop standardized approach to germplasm evaluation
- Potential funding/granting solutions to incentivize collaboration and accelerate development of HLB resistant citrus



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- CRB funded by HLB-MAC to organize the meeting
  - CRB/CRDF and USDA set goals and expectations for meeting
  - Invited scientists, gov't agency reps, industry stakeholders, tech-transfer, regulatory experts – 62 attended
  - Discussions identified the following issues to be addressed
    - Regulatory barriers
    - Intellectual property and Tech-transfer
    - Need for more collaboration among funding agencies
    - Scientific barriers\*



# Outcomes

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## Tech-transfer/IP Barriers:

1. Host Institutions policies do support collaborative research
2. Researchers do not have protected databases to share information
3. Lacking central organization to organize and foster collaboration

## • Proposed solution:

1. Develop favorable agreements amongst collaborating institutions
2. Develop protected data-bases
3. Establish nation-wide organization to coordinate data sharing efforts



# Outcomes

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## Regulatory Barriers:

1. Lengthy process for interstate movement
2. Different movement regulations among states
3. Risks associated with citrus movement not well understood
4. Collaboration with other industries to speed up regulation revisions
5. Scientists do not understand GE regulatory requirements

## • Proposed solutions:

1. Collaborate with state agencies to review requirements- ease, harmonize
2. APHIS conduct risk assessment on citrus propagative materials
3. Conduct scientist oriented regulatory education sessions



# CRDF 2018 RFP Regulatory considerations

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CRDF researcher support addressing regulatory issues (Ref. D1b)

RPF Instructions :

1. Describe regulatory requirements of product or concept
2. Provisions to address: Permits required, compliance SOPs
3. Experts or consultants engaged
4. Intellectual property issues
5. Plans to communicate concept or product value to industry
6. Plans for product commercialization
7. FDACS to answer questions: [aescares@freshfromflorida.com](mailto:aescares@freshfromflorida.com)



# Outcomes

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## Scientific Barriers:

1. Varying levels and methods of sharing research findings
2. Critical gaps in knowledge requiring additional funding
3. Poor communication among funding agencies, industry and researchers
4. Risk of releasing new citrus materials – less data available
5. Variable germplasm evaluation criteria and summary reporting

## • Proposed solutions:

1. Funding agencies clarify reporting requirements
2. Funding agencies fund projects to address gaps in knowledge
3. Funding agencies/industry support nurseries which propagate new varieties
4. Develop standardized data collection protocols\*





# CRDF 2018 Standardized data collection

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Results of the national citrus breeding collaboration meeting:

1. Researcher group formed to develop protocols
2. Ten researchers representing AZ, CA, FL, TX
3. Researcher evaluations submitted to planning group for  
- feedback pending (D1b – materials)
  - Greenhouse experimental design and evaluation
  - Early-stage field trials experimental design and evaluation metrics
  - Definition of tolerance and resistance
  - Metrics addressing HLB inoculation, horticultural performance are described



# CRDF 2018 germplasm evaluation considerations

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CRDF document adopts the protocol developed by the researchers appending guidelines for existing trials and new pre-commercial trials

## 4. CRDF evaluation of existing evaluation trials (D1b)

- Researcher to describe germplasm, objectives, experimental design
- Researcher to describe data collection protocols and summarization
- SAB, CRDF committees and board review for Board approval

## 5. CRDF evaluation new pre-commercial trials (D1b)

- Description – Germplasm, selection, experimental design
- List of horticultural performance traits as appropriate for trial age
- SAB, CRDF committees and board review for Board approval

 CRDF 2018 germplasm evaluation considerations

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- Questions and discussion
- Recommendations for changes
- Committee action

# Citrus Research and Development Foundation, Inc.

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**Thank you!**

**CRDF is proud to provide support to the Florida citrus industry**