

Spreadsheet for Priority Development

Contents:

- Original grower priorities from Feb. RMC, GCGA and workshops
- Grower Priorities (April meeting outcome)
 - Yes = green, based on committee recommendation elements may have been removed, added or modified
 - No = red
- Product of March CPDC/RMC
 - Reworded priority as requested by committees during March meetings
- New recommendations/ideas
 - National Academy study recommendations (in green text)
 - UF IFAS research ideas (dark blue text)
 - USDA-ARS research ideas (dark blue text)

Spreadsheet for Priority Development

- Organization:
- New ideas/recommendations
 - Matched to original grower priorities
 - Orange/brown text are similar to the original priority, but introduce a new element (for discussion and decision)

Grower Priorities: Asian Citrus Psyllid	Product of March CPDC	NAS Recommendations	UF IFAS Research Topic Ideas	ARS Research Topic Ideas
<p>Alternative products are needed to protect against ACP</p> <ul style="list-style-type: none"> • Barriers to prevent feeding (reflective mulch, kaolin clay...). • Can Kaolin clay be improved to increase rainfastness? • Can essential oil products or biopesticides be used (are they effective) in combination or rotation with conventional insecticides? • What other materials can be brought into use? • Are time-release insecticides a possibility? • What role might aldicarb play in managing ACP and HLB and can CRDF play a role? 	<p>2. Improve Asian citrus psyllid (<i>Diaphorina citri</i>) management tools and strategies</p> <p>A. Investigate barriers to prevent psyllid feeding and how to improve their use (e.g. rainfastness of kaolin clay products).</p> <p>B. Investigate biopesticide products (including botanical oil products) as complements to conventional insecticides.</p>	<p>Pg 9: Explore strategies for physical protection of trees against ACP, including repellents, mulches and screens.</p> <p>Pg 10: Explore the effectiveness of new pesticidal chemicals, particularly those providing ACP repellency or having minimal effects on biocontrol agents, on HLB incidence.</p>	<p>5) c. o Total cost and benefits of reflective mulch use.</p> <ul style="list-style-type: none"> ▪ E.g., material, equipment, labor, expertise, nutrient management, yields <p>o Factors affecting adoption</p> <ul style="list-style-type: none"> ▪ Benefits and barriers ▪ Willingness-to-adopt survey <p>f. Investigate implementation of young tree protection with protective netting. How to manage secondary pest community within these exclusion nettings. Adjustment of other management practices.</p>	<p>Use of Deltamethrin impregnated screens to improve ACP management and compliment protected citrus production systems.</p>

Priorities for RMC-18

In materials: RMC-D5

Five priorities:

- 1. Effective bactericide use in Florida citrus groves**
- 2. Asian citrus psyllid (*Diaphorina citri*)**
- 3. Horticultural practices for disease management**
- 4. Plant Improvement**
- 5. Citrus black spot (*Phyllosticta citricarpa*) management**

RMC passed motion to recommend approval of priorities to be included in the RMC-18 RFP

Research Management Committee Final Priorities for RMC-18 RFP

1. Effective bactericide use in Florida citrus groves

- A. Examine the effect of bactericides on tree health including root health, yield and fruit quality, in different aged trees and different disease severity levels.
- B. Test or develop tools to accurately measure and track live bacterial titers in citrus trees.
- C. Examine the dynamics of bactericide introduction into the tree and systemic movement within the vascular system of trees.
- D. Develop novel, commercially viable application technologies to improve the uptake of bactericides.

2. Asian citrus psyllid (*Diaphorina citri*)

- A. Improve the understanding of ACP population pressure and repeated inoculation of mature citrus on disease development and decline.
- B. Examine the impacts of bactericides or other molecules on ACP survival and fitness and determine if bactericide or other molecule use impacts transmission of CLAs.

3. Horticultural practices for disease management

- A. Investigate how root systems are impacted by HLB and how they can be treated to restore or prevent further tree decline and interactions with other root pathogens?
- B. Investigate the most efficient use of micro and macro nutrients on HLB diseased trees and possible correlations with CLAs titer.
- C. Investigate chemicals or horticultural practices that can mitigate or exacerbate the symptoms of HLB including phloem collapse.

4. Plant Improvement

- A. Identify the genetic basis, of citrus host responses to HLB to identify targets for conventional or biotechnological approaches for the development of HLB resistant or tolerant citrus varieties.
 - i. Seek new resistance R-genes in citrus or other species that counteract CLAs effectors.
 - ii. Describe the varietal target and experimental approach targeting HLB resistance. Indicate the percent effort, time and resources dedicated to each variety.
 - iii. Evaluate germplasm developed specifically for HLB resistance through conventional or biotechnological techniques. Describe phenotypic and molecular characterization protocols for laboratory, greenhouse and field experiments; reference the appendix for phenotyping protocols.
- B. Develop tools for reliable, high-throughput characterization of citrus germplasm for HLB resistance or tolerance using current knowledge of HLB symptomology and the molecular characterization of citrus.

5. Citrus black spot (*Phyllosticta citricarpa*) management

- A. Develop strategies for citrus black spot management in Florida citrus groves, including strobilurin and non-strobilurin fungicide use and cultural practices.
- B. Develop management strategies to control the spread of citrus black spot throughout Florida, e.g. tarping and CHMAs.