

CRDF History of Funded Projects Through 02-2023

Project No#	Principal Investigator	Institution	Project Title
00	Stansly, Phil	University of Florida	Development and Delivery of Comprehensive Management Plans for Asian Citrus Psyllid Control in Florida Citrus
000	Muraro, Ron	University of Florida	An Economic Model to Evaluate Emerging Solutions to Citrus Greening
002	Albrigo, Gene	University of Florida	Characterize the roles of callose and phloem proteins in citrus Huanglongbing (HLB) symptom development
004	Stansly, Phil	University of Florida	Creation and Maintenance of an Online Citrus Greening Database
005	Baldwin, Elizabeth	USDA-ARS	Effects of HLB on quality of orange juice and identification of HLB-induced chemical signatures in fruit juice and leaves
007	Bassanezi, Renato	Fundecitrus	Comparative epidemiology of citrus huanglongbing (greening) caused by Candidatus Liberibacter asiaticus and Ca. Liberibacter americanus
008	Bassanezi, Renato	Fundecitrus	Reduction of bacterial inoculum and vector control as strategies to manage citrus huanglongbing (greening)
013	Powell, Chuck	University of Florida	Control of the Asian Citrus Psyllid, Diaphorina citri Kuwayama with protease inhibitors and RNAi
014	Bowman, Kimberly	USDA-ARS	Development of Promising New Rootstocks and Scions for Florida Citrus
016	Brlansky, Ron	University of Florida	Alternative Hosts of HLB to Assist in Disease Management
021	Brown, Judy	University of Arizona	The citrus psyllid transcriptome and time course differential gene expression in Ca. Liberibacter-infected/free whole psyllids and organs
025	Burns, Jackie	University of Florida	Combating symptom development in fruit from Huanglongbing-infected citrus trees: A transcriptomic, proteomic and metabolomic approach
034	Brown, Judy	University of Arizona	Gross and fine structure localization of Liberibacter in citrus psyllid Diaphorina citri organs: elucidating the transmission pathway
038	Brown, Judy	University of Arizona	Management of Pyslla in tree fruit crops using RNA interference
045	Dawson, Bill	University of Florida	Examine the response of different genotypes of citrus to citrus greening (Huanglongbing) under different conditions
046	Dawson, Bill	University of Florida	Identify and Deliver Antibacterial Peptides and/or Proteins for Control of Citrus Greening (Huanglongbing or HLB)
048	Dollet, Michel	Cirad	Attempts to in vitro culture Candidatus Liberibacter asiaticus isolates in order to fulfil Koch's postulates
057	Ehsani, Reza	University of Florida	Detecting Citrus greening (HLB) using multiple sensors and sensor fusion approach
061	Della-Colletta, Helvecio	Fundag, Brazil	Diagnosis of Candidatus Liberibacter asiaticus in plant and vector based on molecular and serological approaches.
063	Futch, Stephen	University of Florida	Grower educational programs to enhance adoption of psyllid and HLB control
065	Gabriel, Dean	University of Florida	Genomic sequencing to closure of a curated Florida citrus greening strain of
066	Gmitter, Fred	University of Florida	Development of transformation techniques for Murraya, to engineer a deadly trap plant
067	Gmitter, Fred	University of Florida	Surviving HLB and canker: genetic strategies for improved scion and rootstock varieties
068	Gmitter, Fred	University of Florida	Identification and Characterization of HLB Survivors
071	Gmitter, Fred	University of Florida	International citrus genome consortium (ICGC): Providing tools to address HLB and other challenges
072	Gmitter, Fred	University of Florida	Assessment of HLB Resistance and Tolerance in Citrus and Its Relatives
076	Gottwald, Tim	USDA-ARS	Efficacy of citrus canker control strategies, leafminer interactions, and bacterial survival.
077	Gottwald, Tim	USDA-ARS	Epidemiology and disease control of HLB
078	Gottwald, Tim	USDA-ARS	Efficacy of interplanting citrus with guava as a control strategy for Huanglongbing

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079	Gowda, Siddrame	University of Florida	Development of sensitive, non-radioactive and rapid tissue blot diagnostic method for large-scale detection of citrus greening pathogen
081	Graham, Jim	University of Florida	Systemic acquired resistance (SAR) for control of citrus canker on young trees
082	Graham, Jim	University of Florida	Characterization of canker resistance in citrus plants created by 'Somatic Cybridization' without citrus transformation.
083	Graham, Jim	University of Florida	Canker management in Florida citrus groves: chemical control on highly susceptible grapefruit and early orange varieties
084	Graham, Jim	University of Florida	Transmission of HLB by citrus seed
085	Graham, Jim	University of Florida	Survival of <i>Xanthomonas citri</i> ssp. <i>citri</i> (Xcc) to estimate risk of citrus canker
086	Graham, Jim	University of Florida	Does systemic acquired resistance (SAR) control HLB disease development?
087	Grosser, Jude	University of Florida	Accelerating the Commercialization of Transformed Juvenile Citrus
088	Gurley, William	University of Florida	Engineering citrus for resistance to <i>Liberibacter</i> and other phloem pathogens
090	Mizell, Russell	University of Florida	An effective trap for Asian citrus psyllid that can be used to monitor groves and plants for sale
091	Hall, David	USDA-ARS	Efficacy of Seasonal Insecticide Programs for Suppressing HLB in New Citrus Plantings
093	Hall, David	USDA-ARS	Pathogen-Vector Relations between Asian Citrus Psyllid and <i>Liberibacter asiaticus</i>
095	Hartung, John	USDA-ARS	Preparation of monoclonal antibodies against <i>Candidatus liberibacter asiaticus</i>
102	Horvath, Diana	Two Blades	Genetic Resistance to Citrus Canker conferred by the Pepper Bs3 Gene
108	Irey, Mike	Southern Gardens	Support for the Southern Gardens Diagnostic Laboratory
119	Lee, Richard	USDA-ARS	Recovery of Citrus germplasm in Florida
122	Falk, Bryce	UC Davis	Controlling HLB by controlling psyllids with RNA interference
123	Lindeberg, Magdalen	Cornell University	Bioinformatic characterization and development of a central genome
125	Lin, Hong	USDA-ARS	Development of SSR markers for detection, genotyping, phenotyping and genetic diversity assessment of <i>Candidatus Liberibacter</i> strains in Florida
126	Lopes, Roberto S.	Fundag, Brazil	Factors influencing acquisition and inoculation of <i>Candidatus Liberibacter asiaticus</i> by <i>Diaphorina citri</i>
129	Lu, Hua	University of Baltimore	Manipulating SA-mediated defense signaling to stimulate broad-spectrum resistance to HLB and other diseases in citrus
132	Machado, Marcos Antonio	Fundag, Brazil	Analysis of transcriptome of citrus infected with <i>Ca. Liberibacter asiaticus</i> and <i>Ca. L. americanus</i> .
144	Moore, Gloria	University of Florida	Agrobacterium-mediated Genetic Transformation of Mature Citrus Tissue
145	Moore, Gloria	University of Florida	Evaluate Differences in Response to HLB by Scions on Different Rootstocks
149	Mou, Zhonglin	University of Florida	Transferring Disease Resistance Technology from a Model System to Citrus
155	Grosser, Jude	University of Florida	Increasing the Capacity of the University of Florida's CREC Core Citrus Transformation Facility (CCTF)
158	Pena, Leandro	IVIA, Spain	Development of transformation systems for mature tissue of Florida commercial varieties, and strategies to improve tree management
158.1	Dawson, Bill	University of Florida	Development of transformation systems for mature tissue of Florida commercial varieties, and strategies to improve tree management
161	Powell, Chuck	University of Florida	A Rapid Screening Process for Chemical Control of Huanglongbing

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Project No#	Principal Investigator	Institution	Project Title
162	Duan, Yongping	USDA-ARS	Dissecting the Disease Complex of Citrus Huanglongbing in Florida
163	Triplett, Eric	University of Florida	Integrated approaches to discover pathogenesis-associated proteins from the causal agent of citrus greening disease and build new diagnostic tools
164	Qureshi, J.A.	University of	Sampling Plans to Guide Decision Making for Control Asian Citrus Psyllid
168	Ritenour, Mark	University of Florida	Pre-Grading Fresh Citrus for Canker Prior to Dumping on the Main Packingline
170	Roberts, Pam	University of Florida	Diagnostic Services for growers for detection of HLB to aid in management decisions
172	Roberts, Pam	University of Florida	Spatial and Temporal Incidence of Ca. Liberibacter in Citrus and Psyllids detected Using Real-time PCR
174	Rogers, Michael	University of Florida	Huanglongbing: Understanding the vector-pathogen interaction for disease management
175	Rogers, Michael	University of Florida	Resistance and cross-resistance development potential in Asian citrus psyllid to insecticides and its impact on psyllid management
176	Rogers, Michael	University of Florida	Effects of nutrition and host plant on biology and behavior of the Asian citrus psyllid and implications for managing psyllid populations
179	Rouse, Bob	University of Florida	Cultural Practices to Prolong Productive Life of HLB Infected Trees and Evaluation of Systemic Acquired Resistance inducers combined with Psyllid
179-1	Rouse, Bob	University of Florida	Supplement to Project 179 with objectives below: Exp 1-Optimizing ground & foliar nutrients;
184	Salyani, Masoud	University of Florida	Evaluation and development of effective ultra low volume spray technologies for management of the Asian citrus psyllid
191	Schumann, Arnold	University of Florida	Intensively managed citrus production systems for early high yields and vegetative flush control in the presence of greening disease
196	Setamou, Mamoudou	Texas A&M	Coupling citrus flush management and dormant chemical spray as a strategy to control populations of Asian citrus psyllid
200	Singh, Megh	University of	Elimination of HLB infected trees without physical removal through application
202	Song, Wen-Yuan	University of Florida	Engineering Resistance Against Citrus Canker and Greening Using Candidate Genes
203	Schumann, Arnold	University of Florida	Using physical and chemical property changes of citrus leaves as early indicators of HLB infection and effects of added plant nutrients
204	Burns, Jackie	University of Florida	Strategies to minimize growth flushes of mature citrus trees with pruning practices and plant growth regulators to reduce psyllid feeding
210	Stansly, Phil	University of Florida	Ultralow Volume and Aerial Application of Insecticides and Horticultural Mineral Oil to Control Asian Citrus Psyllid in Commercial Orchards
212	Stansly, Phil	University of Florida	Enhanced Biological Control of Asian Citrus Psyllid in Florida through Introduction and Mass Rearing of Natural Enemies
213	Stelinski, Lukasz	University of Florida	Development and optimization of biorational tactics for Asian citrus psyllid control and decreasing huanglongbing incidence
214	Stelinski, Lukasz	University of Florida	Quantitative measurement of the movement patterns and dispersal behavior of Asian citrus psyllid in Florida for improved management.
215	Stelinski, Lukasz	University of Florida	Identification of psyllid attractants and development of highly effective trapping and attract-and-kill methods for improved psyllid control
217	Stelinski, Lukasz	University of Florida	Development of Effective Guava-based Repellent to Control Asian Citrus Psyllid and Mitigate Huanglongbing Disease Incidence
220	Stover, Ed	USDA-ARS	A secure site for testing transgenic and conventional citrus for HLB and psyllid resistance
221	Stover, Ed	USDA-ARS	Production of Transgenic Commercial Cultivars Resistant to HLB and Canker
232	Wang, Nian	University of Florida	Characterization the virulence mechanism of the citrus Huanglongbing pathogen Candidatus Liberibacter asiaticus
233	Wang, Nian	University of Florida	Identification and characterization of critical virulence and copper resistance genes of Xanthomonas axonopodis pv. citri & related species
236	Yamamoto, Pedro	Fundecitrus	Can insecticides and mineral oil avoid transmission of Candidatus Liberibacter
238	Atwood, Ryan	Mid Florida Citrus Foundation	Expand Research Plots and Maintain Existing Areas at Mid Florida Citrus Foundation

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Project No#	Principal Investigator	Institution	Project Title
305	Dandekar, Abhaya	UC Davis	Improving innate immune response of Citrus to HLB
306	Davis, Michael J	University of Florida	Culturing Liberibacter asiaticus
307	De La Fluente, Leonardo	Auburn University	Infection traits and growth of Candidatus Liberibacter asiaticus inside microfluidic chambers
308	Dewdney, Megan	University of Florida	Does huanglongbing (HLB) or associated nutrient deficiencies change asian citrus psyllid (ACP) feeding patterns?
309	Dewdney, Megan	University of Florida	How the Ca. Liberibacter asiaticus prevalence in groves can affect the acquisition and transmission by the Asian citrus psyllid
310	Duan, Yongping	USDA-ARS	Characterization of a putative insect-transmission determinant/virulence gene (Hyp1) of 'Candidatus Liberibacter asiaticus'
312	Gowda, Siddrame	University of Florida	Functional study of the putative effectors of 'Candidatus Liberibacter asiaticus' using Citrus tristeza virus vector
313	Graham, Jim	University of Florida	Evaluation of foliar Zinc and Manganese application for control of Huanglongbing or associated symptom development
314	Grishin, Nick	UT Southwestern Medical	Insight into the causative agent of citrus greening disease (HLB) using computational structure/function analysis of genome encoded proteins
315	Hall, David	USDA-ARS	Speedy evaluation of citrus germplasm for psyllid resistance
319	Keyhani, Nemat O.	University of Florida	Application of Asian citrus psyllid, Diaphorina citri, tissue culture cell lines
324	Qureshi, J.A.	University of Florida	Impact of insecticidal control of Asian citrus psyllid (ACP) on leafminers, mites, scales, thrips and their natural enemies in Florida
325	Rogers, Michael	University of Florida	Development and evaluation of psyllid management programs for protection of resets and young tree plantings from HLB
326	Roose, Mikeal	UC Riverside	A Chemical Genomics Approach to Identify Targets for Control of Asian Citrus Psyllid and HLB
328	Santra, Swadeshmukul	UCF	Copper loaded silica nanogel technology for long term prevention of citrus canker disease
329	Schumann, Arnold	University of Florida	Evaluation of the mechanism and long-term management potential of boron based suppression of HLB symptoms
330	Shatters, Bob	USDA-ARS	Targeting the Asian Citrus Psyllid Feeding Mechanism as a Means of Blocking
330-1	Shatters, Bob	USDA-ARS	Enhancement - Targeting the Asian Citrus Psyllid Feeding Mechanism as a Means of Blocking Psyllid Feeding on Citrus
331	Stansly, Phil	University of Florida	Thresholds for vector control in young citrus treated for symptoms of HLB with a nutrient/SAR package
332	Stelinski, Lukasz	University of Florida	Is Candidatus Liberibacter asiaticus, the pathogen responsible for Huanglongbing in Florida, sexually transmitted between adult psyllids?
333	Stelinski, Lukasz	University of Florida	Maintaining the effectiveness of our current and most important psyllid management tools (insecticides) by preventing insecticide resistance
334	Stelinski, Lukasz	University of Florida	How does Liberibacter infection of psyllids affect the behavioral response of this vector to healthy versus HLB-infected citrus trees?
335	Stelinski, Lukasz	University of Florida	Evaluation of Methyl Salicylate as a simultaneous repellent of Asian citrus psyllid and attractant for psyllid natural enemies
336	Triplett, Eric	University of Florida	Genome-enabled metabolic reconstruction of Ca. Liberibacter asiaticus and its use in culturing and controlling the pathogen
337	Wang, Nian	University of Florida	Control of Citrus Huanglongbing by disruption of the transmission of citrus greening pathogen by psyllids
338	Yamamoto, Pedro Takao	Fundecitrus	Improvement and development of new method to control Asian Citrus Psylla, Diaphorina citri
400	Powell, Chuck	University of Florida	Top 100 Antibiotics: Screening Effective Chemical Compounds Against Citrus HLB Bacterium, Candidatus Liberibacter asiaticus
401	Powell, Chuck	University of Florida	Top 100 RNAi: Cloning, Expressing and Testing Key RNAi Molecules Against Asian Citrus Psyllid, Diaphorinia citri
402	Belknap, William	USDA-ARS	Acquisition and Assembly of the Genomic Sequence of the Citrus Rootstock

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405	Brlansky, Ron	University of Florida	Transmission of the Emerging Citrus Pathogen Cytoplasmic Citrus Leprosis Virus by Endemic Brevipalpus mites
407	Davis, Michael J	University of Florida	Culturing Liberibacter asiaticus
411	Dewdney, Megan	University of Florida	Understanding potential inoculum sources of Guignardia citricarpa, the causal agent of citrus black spot
413	Foliomonova, Svetlana	University of Florida	How the efficiency of HLB transmission by psyllids varies depending on the stage of infection and plant development
414	Gonzalez, Claudio	University of Florida	Identification of small molecules that disrupt pathogenicity determinants of Liberibacter asiaticus
416	Graham, Jim	University of Florida	Evaluation of foliar Zinc and Manganese application for control of Huanglongbing or associated symptom development
417	Graham, Jim	University of Florida	Novel formulations and application methods for bactericides to control systemic HLB infection
417-1	Graham, Jim	University of Florida	Enhancement - Novel formulations and application methods for bactericides to control systemic HLB infection
418	Hilf, Mark	USDA-ARS	Analysis of the colonization of citrus seed coats by 'Candidatus Liberibacter asiaticus' the causal agent of citrus huanglongbing and their use as a
422	LaPointe, Stephen	USDA-ARS	Automated application of semiochemicals for control of citrus leafminer and citrus canker disease with application for control of Asian citrus psyllid and
423	Lee, Won Suk	University of Florida	Sensing system for symptomatic citrus greening infected leaves using polarized light
424	McNellis, Timothy	Penn State University	Functional disruption of the NodT outer membrane protein of Candidatus Liberibacter asiaticus for rootstock-mediated resistance to citrus greening
425	Morgan, Kelly	University of Florida	Effect of application rate, tree size and irrigation scheduling on leaf Imidacloprid concentration, psyllid populations and soil leaching.
427	Pelz-Stelinski, Kirsten	University of Florida	Insecticidal and antimicrobial peptides for management of Asian citrus psyllid
434	Stansly, Phil	University of Florida	Mass rearing and release of parasitic wasps to augment biological control of the Asian citrus psyllid (ACP)
439	Stelinski, Lukasz	University of Florida	How does infection of Asian citrus psyllid (ACP) with Candidatus Liberibacter asiaticus (Ca Las) affect the behavioral response of the vector to healthy
440	Stelinski, Lukasz	University of Florida	Testing of existing botanical insecticides for activity against Asian citrus psyllid to identify potential new tools for psyllid management.
440-1	Stelinski, Lukasz	University of Florida	Enhancement - Testing of existing botanical insecticides for activity against Asian citrus psyllid to identify potential new tools for psyllid management
441	Stelinski, Lukasz	University of Florida	Improving psyllid management by optimizing 1) adjuvants for low volume sprays, 2) targeted border-row treatments, and 3) location of spray
445	Wang, Nian	University of Florida	Characterization of critical genes involved in spread of citrus canker pathogen Xanthomonas axonopodis pv. citri
446	Rogers, Michael	University of Florida	Establishment of Citrus Health Management Areas (CHMAs)
447	Stansly, Phil	University of Florida	Role of Nutritional and Insecticidal Treatments in Mitigation of HLB in New Citrus Plantings
447-1	Stansly, Phil	University of Florida	Enhancement - Role of Nutritional and Insecticidal Treatments in Mitigation of HLB in New Citrus Plantings
502	Hall, David	USDA-ARS	High-Throughput Screening of Transgenic Citrus for HLB Resistance.
503	England, Gary	Mid-Florida Citrus	The support of Citrus Research and Extension efforts by maintaining and improving the Mid Florida Citrus Foundation grove
508	Bowman, Kimberly	USDA-ARS	Development of Promising Supersour and Other Rootstocks Resistant to HLB
510	Brown, Judy	University of Arizona	Molecular and cellular mechanisms that drive psyllid vector-Liberibacter interactions in the transmission pathway
516	Dawson, Bill	University of Florida	Develop citrus resistant or tolerant to HLB using the CTV vector and transgenic approaches
517	Dawson, Bill	University of Florida	Determine the time and location of sources of HLB inoculum of trees after visit of infected psyllids

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Project No#	Principal Investigator	Institution	Project Title
518	Dawson, Bill	University of Florida	Examination of poncirus genes fo4r tolerancce of sweet orange to HLB
519	Dewdney, Megan	University of Florida	Strobilurin (QoI) resistance and the potential for resistance development to the newly introduced SDHI and DMI fungicides in tangerine-infecting
523	Duan, Yongping	USDA-ARS	Screening and Cloning of Resistance Related Genes by RNA-Seq in Huanglongbing (HLB) Resistant and Susceptible Citrus Breeding Lines
525	Duncan, Larry	University of Florida	Managing root health by exploiting the benefits and mitigating the challenges afforded by nematodes
526	Ehsani, Reza	University of Florida	Precision foliar nutrient management using real time leaf analysis and a variable rate application technique
530	Falk, Bryce	UC Davis	Targetting Diaphorina citri using insect virus-induced systemic RNA interference
531	Falk, Bryce	UC Davis	Transgenic RNAi-based psyllid control
532	Foliomonova, Svetlana	University of Florida	A novel method for efficient inoculation of trees with the HLB bacterium
532-1	Foliomonova, Svetlana	University of Florida	Enhancement - A novel method for efficient inoculation of trees with the HLB bacterium
533	Foliomonova, Svetlana	University of Florida	Deployment of a superinfecting Citrus tristeza virus-based vector in the field: a measure to effectively protect field citrus trees against HLB
535	Gabriel, Dean	University of	Exploiting the Las and Lam phage for potential control of HLB
536	Gmitter, Fred	University of Florida	Identification and mapping of the genes controlling resistance to Huanglongbing (HLB)
537	Gmitter, Fred	University of Florida	Characterization of Huanglongbing (HLB) survivors in the severely infected and/or abandoned groves
537-1	Gmitter, Fred	University of Florida	Enhancement - Characterization of Huanglongbing (HLB) survivors in the severely infected and/or abandoned groves
538	Gmitter, Fred	University of Florida	Host genetic control of interference in Asian citrus psyllid life cycles
539	Gmitter, Fred	University of Florida	Creation, Development, and Screening of Citrus Germplasm for Resistance to HLB and Citrus Canker (Core Breeding)
544	Graham, Jim	University of Florida	Improved management of citrus canker through use of systemic acquired resistance and more bioavailable copper bactericides
545	Graham, Jim	University of Florida	Phytophthora damage to roots: a potential contributor to reduced nutrient uptake and decline of HLB-affected citrus trees
546	Graham, Jim	University of Florida	Mechanisms involved in biofilm formation and infection by Xanthomonas citri subsp. citri
547	Grosser, Jude	University of Florida	Applying Advances of Juvenile Citrus Transformation Technology (Continuation of Project #87).
548	Grosser, Jude	University of Florida	Understanding and Manipulating the Interaction of Complex Rootstock Genetics and Constant Nutrition to Enhance the Establishment, Longevity and
548-1	Grosser, Jude	University of Florida	Enhancement - Understanding and Manipulating the Interaction of Complex Rootstock Genetics and Constant Nutrition to Enhance the Establishment,
551	Hartung, John	USDA-ARS	Visualization and detection of proteins produced by 'Ca. Liberibacter asiaticus'
552	Hartung, John	USDA-ARS	HLB resistance through transgenic expression of short chain fragment variable antibodies against key Liberibacter epitopes
555	Horvath, Diana	Two Blades	TAL Effector Induced Resistance to Xanthomonas
556	Horvath, Diana	Two Blades	Engineering PAMP-receptor mediated broad spectrum resistance to HLB and canker
558	Killiny, Nabil	University of Florida	Disrupt the bacterial growth in the insect vector to block the transmission of Candidatus Liberibacter Asiaticus to citrus, the causal agent of citrus greening
558-1	Killiny, Nabil	University of Florida	Enhancement - Disrupt the bacterial growth in the insect vector to block the transmission of Candidatus Liberibacter Asiaticus to citrus, the causal agent of
559	Killiny, Nabil	University of Florida	Blocking the Vector Transmission of Candidatus Liberibacter asiaticus to Stop the Spread of Huanglongbing in Citrus.

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560	LaPointe, Stephen	USDA-ARS	Application of an aggregation pheromone for management of the Diaprepes root weevil.
561	LaPointe, Stephen	USDA-ARS	Determination of attractive host plant volatiles and sex pheromones of the Asian citrus psyllid using electroantennograms and coupled gas
562	Lee, Richard	USDA-ARS	Development of new technologies to eliminate huanglongbing from budwood source trees
563	Lee, Richard	USDA-ARS	Analyzing Liberibacter isolates undetectable by standard diagnostic methods in Florida
564	Lindeberg, Magdalen	University of Florida	Expansion of online genome resources for bacterial pathogens of citrus and development of a diagnostic sequence database for Liberibacter species.
566	Lu, Hua	Univeristy of Baltimore	Manipulating defense signaling networks to stimulate broad-spectrum resistance to HLB and other diseases in citrus
567	Mankin, Richard	USDA-ARS	Acoustic trap for Asian citrus psyllids
567-1	Mankin, Richard	USDA-ARS	Enhancement - Acoustic trap for Asian citrus psyllids
570	Mizell, Russell	University of Florida	Using a novel psyllid trap that captures and preserves psyllids and Candidatus bacteria for DNA analyses: understand vector-greening population dynamics
570-1	Mizell, Russell	University of Florida	Enhancement - Using a novel psyllid trap that captures and preserves psyllids and Candidatus bacteria for DNA analyses: understand vector-greening
572	Moore, Gloria	University of Florida	Study the role of Basal Defense and Chemical Treatments in the Response of Citrus to HLB
573	Moore, Gloria	University of Florida	Use of an early early flowering gene in citrus to rapidly transfer disease resistance from citrus relatives into cultivated types
579	Orbovic, Vladimir	University of Florida	Citrus Core Transformation Facility as a platform for testing of different genes and/or sequences that have potential to render Citrus plants tolerant or
581	Pelz-Stelinski, Kirsten	University of Florida	Key unknowns about Asian citrus psyllid biology in Florida: Overwintering sites and alternative hosts
581-1	Pelz-Stelinski, Kirsten	University of Florida	Enhancement - Key unknowns about Asian citrus psyllid biology in Florida: Overwintering sites and alternative hosts
582	Pelz-Stelinski, Kirsten	University of Florida	Factors influencing transmission of the huanglongbing (greening) pathogen by the Asian citrus psyllid and methods for interrupting the transmission process
582-1	Pelz-Stelinski, Kirsten	University of Florida	Enhancement - Factors influencing transmission of the huanglongbing (greening) pathogen by the Asian citrus psyllid and methods for interrupting
583C	Zale, Janice	University of Florida	Mature citrus transformation for surviving with citrus greening
584	Powell, Chuck	University of Florida	Rapid and Efficient Delivery of Effective Compounds into Citrus Phloem for Treatment of HLB Bacteria
584-1	Powell, Chuck	University of Florida	Enhancement - Rapid and Efficient Delivery of Effective Compounds into Citrus Phloem for Treatment of HLB Bacteria
586C	Ehsani, Reza	University of Florida	Low-cost solar thermal treatment for in-grove reduction of Clas/ In-field solar heat treatment of HLB-infected orange trees for inoculum reduction inoculum
586-1	Ehsani, Reza	University of Florida	Low-cost solar thermal treatment for in-grove reduction of CLas inoculum - Enhancement
589	Roberts, Pam	University of Florida	Continuation of diagnostic service for growers for detection of Huanglongbing in citrus and psyllids to aid in management decisions
590	Rogers, Michael	University of Florida	Enhancing psyllid control through a better understanding of the effects of pesticide applications on psyllid feeding and mortality
590-1	Rogers, Michael	University of Florida	Enhancement - Enhancing psyllid control through a better understanding of the effects of pesticide applications on psyllid feeding and mortality
592	Rucks, Phil	Rucks Nursery	Protective Structure for Citrus Research Foundation Farm to Enhance USDA
593	Schumann, Arnold	University of Florida	Advanced Production Systems (ACPS) for efficient, sustainable citrus groves
594	Schumann, Arnold	University of Florida	Improving the uptake efficiency of nutrients applied to citrus foliage
596	Song, Wen-Yuan	University of Florida	Engineering Resistance Against Citrus Canker and Greening

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598	Schumann, Arnold	University of Florida	Bringing young citrus trees infected with Candidatus Liberibacter asiaticus into production using intensive horticultural management strategies.
600	Stansly, Phil	University of Florida	Management Tactics Based on Psyllid Movement and Distribution in Florida Citrus
601	Stansly, Phil	University of Florida	Effective and Sustainable Insecticidal Control of Citrus Leafminer, Phyllocnistis citrella (Stainton) Lepidoptera: Gracillariidae) to Slow Spread of Citrus Canker
603	Stelinski, Lukasz	University of Florida	Non-neurotoxic chemicals as alternatives to conventional insecticides for Asian citrus psyllid management and prevention of insecticide resistance
603-1	Stelinski, Lukasz	University of Florida	Enhancement - Non-neurotoxic chemicals as alternatives to conventional insecticides for Asian citrus psyllid management and prevention of insecticide
604	Stelinski, Lukasz	University of Florida	Influence of plant nutrient regimes for extending the life of HLB-infected trees on Asian citrus psyllid biology and management
604-1	Stelinski, Lukasz	University of Florida	Enhancement - Influence of plant nutrient regimes for extending the life of HLB-infected trees on Asian citrus psyllid biology and management
605	Stover, Ed	USDA-ARS	Development of Promising New Scions for Florida Citrus: Exploiting HLB Resistance and Tolerance
606	Stover, Ed	USDA-ARS	Production of Transgenic Commercial Scion Cultivars Resistant to HLB and
607	Stover, Ed	USDA-ARS	A secure site for testing transgenic and conventional citrus for HLB and psyllid resistance
608	Wang, Nian	University of Florida	Characterize the effect of application of beneficial bacteria (Microbe Program) on management of Huanglongbing
608-1	Wang, Nian	University of Florida	Enhancement - Characterize the effect of application of beneficial bacteria (Microbe Program) on management of Huanglongbing
609	Wang, Nian	University of Florida	Control of citrus Huanglongbing by exploiting the virulence mechanisms of Candidatus Liberibacter asiaticus and inducing plant defense
610	Wang, Nian	University of Florida	Improve the management of citrus canker by protecting citrus fruits through interfering with biofilm formation and quorum sensing of Xanthomonas citri
611	Wang, Nian	University of Florida	Characterize the causal agent of citrus blight through metagenomic approaches and the effect of HLB on citrus blight diseased trees
614	Young, Linda	University of Florida	Enhanced nutritional application and productivity in endemic HLB grove situations in Florida - a statistical approach to determine efficacy
614-1	Young, Linda	University of Florida	Enhancement - Enhanced nutritional application and productivity in endemic HLB grove situations in Florida - a statistical approach to determine efficacy
615	Gmitter, Fred	University of Florida	Evaluation of Rootstocks Appropriate for Higher Density Groves and Advanced Citrus Production Systems Leading to a Sustainable, Profitable Florida Citrus
616	Rogers, Michael	University of Florida	Ultra High Performance Liquid Chromatography – Pesticide Residue Analysis
617C	Powell, Chuck	University of Florida	Screening effective chemical compounds against citrus HLB bacterium Candidatus Liberibacter--Further evaluation of selected compounds in
617-1	Powell, Chuck	University of Florida	Screening effective chemical compounds against citrus HLB bacterium Candidatus Liberibacter-Further evaluation of selected compounds in
618C	Dawson, Bill	University of Florida	RNAi InnoCentive Project Extension (Phase II): In planta Characterization of dsRNA Effect on all Psyllid Life Stages and Selection of Target(s) to Advance to
701	Allan, Sandra	USDA-ARS	Exploitation of Visual Stimuli for Better Monitoring and Management of ACP in
701-1	Allan, Sandra	USDA-ARS	Enhancement - Exploitation of Visual Stimuli for Better Monitoring and Management of ACP in Young Citrus Plantings
702	Baldwin, Elizabeth	USDA-ARS	Investigate effect of nutritional sprays on healthy and HLB-diseased orange fruit and resulting juice quality
707	Schumann, Arnold	University of Florida	Are there declines in hydraulic conductivity and drought tolerance associated with HLB?
710	Etxeberria, Ed	University of Florida	Identification of potential pathways for the spread of HLB through citrus vascular systems
711	Bonning, Bryony	Iowa State University	Identification of Bacillus thuringiensis endo-toxins active against Adult Asian Citrus Psyllid
712	Dandekar, Abhaya	UC Davis	Rapid testing of next generation chimeric antimicrobial protein components for broad spectrum citrus disease control

CRDF History of Funded Projects Through 02-2023

Project No#	Principal Investigator	Institution	Project Title
715	Dewdney, Megan	University of Florida	The leaf litter cycle of citrus black spot and improvements to current management practices
716	Dewdney, Megan	University of Florida	Improved fungicide control measures for pre- and post-harvest management of citrus black spot
717	Duan, Yongping	USDA-ARS	Control Citrus HLB by Blocking the Function of two Critical Effectors Encoded by Candidatus Liberibacter asiaticus
720	Duncan, Larry	University of Florida	Beyond BioVector: Can cold-tolerant nematodes effectively manage Diaprepes root weevil in advanced citrus production systems?
723	Gabriel, Dean	University of Florida	Exploiting the Las phage for potential control of HLB: year 2.
724	Gmitter, Fred	University of	Accelerating Citrus Gene Discovery for HLB Tolerance/Resistance
726	Gonzalez, Carlos	Texas AgriLife Research	A Bacterial Virus Based Method for Biocontrol of Citrus Canker
726L	Gonzalez, Carlos	Texas AgriLife Research	A Bacterial Virus Based Method for Biocontrol of Liberibacter
728	Gowda, Siddrame	University of Florida	RNAi-mediated gene knock-down of selected members of 'Candidatus Liberibacter asiaticus' induced citrus transcriptome with CTV based silencing
730	Graham, Jim	University of Florida	Monitoring streptomycin resistance in Xanthomonas citri in support of FireWall registration for canker
731	Graham, Jim	University of Florida	Calcium carbonate may reduce root health and exacerbate HLB expression
731-1	Graham, Jim	University of Florida	Enhancement - Calcium carbonate may reduce root health and exacerbate HLB expression
732	Graham, Jim	University of Florida	Understanding and reducing early root loss in HLB affected trees
733	Grishin, Nick	UT Southwestern Medical	Molecular basis of Citrus Greening and related diseases gleaned from genome analyses of hosts and pathogens
736	Gruber, Barrett	University of Florida	Expedited Indian River Evaluation of Tetrazyg Rootstocks Surviving the HLB-Gauntlet
749	Li, Yi	UConn	Development of Technologies Important for Creation and Commercialization of Transgenic HLB Resistant Citrus
750	Ma, Wenbo	UC Riverside	Identification of key components in HLB using effectors as probes
752	Moore, Gloria	University of Florida	Cell Penetrating Peptides for Citrus Genetic Improvement and Disease Resistance
754	Mou, Zhonglin	University of Florida	Application of a natural inducer of systemic acquired resistance and engineering non-host resistance in citrus for controlling citrus canker
758	Ramadugu, Chandrika	UC Riverside	Further characterization of HLB resistant clones of selected citrus varieties
759	Santra, Swadeshmukul	UCF	Fixed-Quat: A novel alternative to Cu fungicide/bactericide for preventing citrus canker.
760	Setamou, Mamoudou	Texas A&M	Development of a novel system for dissemination of a pathogenic fungus to manage Asian citrus psyllid in abandoned citrus groves
760-1	Setamou, Mamoudou	Texas A&M	Enhancement - Development of a novel system for dissemination of a pathogenic fungus to manage Asian citrus psyllid in abandoned citrus groves
763	Stansly, Phil	University of Florida	Optimizing Spatial Distribution of Pheromone Traps for Monitoring Citrus Leafminer and Related Species
765	Stelinski, Lukasz	University of Florida	Continuation of insecticide resistance monitoring and management for sustainable control of Asian citrus psyllid.
765-1	Stelinski, Lukasz	University of Florida	Enhancement - Continuation of insecticide resistance monitoring and management for sustainable control of Asian citrus psyllid
766	Stelinski, Lukasz	University of Florida	Biotic and abiotic factors that cause Asian citrus psyllids to accept hosts: potential implications for young plantings and pathogen transmission.
767	Triplett, Eric	University of Florida	Rapid identification of antibiotics useful in the control of citrus greening disease
769	Triplett, Eric	University of Florida	A team approach to culturing Ca. Liberibacter asiaticus.

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Project No#	Principal Investigator	Institution	Project Title
771	Moudgil, Brij	University of Florida	Soft nanoparticle development and tree uptake to deliver potential HLB bactericides
773	Wang, Nian	University of Florida	Control HLB by developing antimicrobial compounds against Candidatus Liberibacter asiaticus
773-1	Wang, Nian	University of	Enhancement - Control HLB by developing antimicrobial compounds against
775C	Nelson, Mark	Echelon Biosciences Inc.	Investigation of Non-Antibiotic Tetracycline Analogs and Formulations Against HLB
776C	Albrigo, Gene	University of Florida	Frequent Low Rate Application of 2-4,D and Cytokinin to study plant symptom reduction in HLB affected trees
777C	Albrigo, Gene	University of Florida	Plant Growth Regulator late winter application for pre-harvest drop control in Valencia orange-Grower trials
778C	Albrigo, Gene	University of Florida	Plant Growth Regulator late winter application for pre-harvest drop control in Valencia orange-comprehensive PGR trials
779C	Albrigo, Gene	University of Florida	Plant growth regulator fall applications for preharvest drop control - Valencia orange-Single application Grower trials
780C	Wang, Nian	University of Florida	Evaluation of Soil-Based Antimicrobials as Control Agents against HLB.
780nu	Shatters, Bob	USDA-ARS	Rear and Release Psyllids as Biological Control Agents - An Economical and Feasible Mid-Term Solution for Huanglongbing (HLB) disease.
781nu	Falk, Bryce	UC Davis	Rear and Release Psyllids as Biological Control Agents - An Economical and Feasible Mid-Term Solution for Huanglongbing (HLB) disease.
782nu	Hartung, John	USDA-ARS	Rear and Release Psyllids as Biological Control Agents - An Economical and Feasible Mid-Term Solution for Huanglongbing (HLB) disease.
783nu	Bartels, David	USDA-ARS	Rear and Release Psyllids as Biological Control Agents - An Economical and Feasible Mid-Term Solution for Huanglongbing (HLB) disease.
784nu	Brown, Judy	University of Arizona	Rear and Release Psyllids as Biological Control Agents - An Economical and Feasible Mid-Term Solution for Huanglongbing (HLB) disease.
785nu	Grafton-Cardwell, Elizabeth	UC Riverside	Rear and Release Psyllids as Biological Control Agents - An Economical and Feasible Mid-Term Solution for Huanglongbing (HLB) disease.
786nu	Polek, MaryLou	CRB	Rear and Release Psyllids as Biological Control Agents - An Economical and Feasible Mid-Term Solution for Huanglongbing (HLB) disease.
787nu	Galindo, Celestina	CA Dept Food &	Rear and Release Psyllids as Biological Control Agents - An Economical and
788nu	Hay, Bruce	CIT	Rear and Release Psyllids as Biological Control Agents - An Economical and Feasible Mid-Term Solution for Huanglongbing (HLB) disease.
789nu	Rohrig, Eric	FL Dept Consumer	Rear and Release Psyllids as Biological Control Agents - An Economical and Feasible Mid-Term Solution for Huanglongbing (HLB) disease.
790nu	Coop, Leonard	Oregon State University	Rear and Release Psyllids as Biological Control Agents - An Economical and Feasible Mid-Term Solution for Huanglongbing (HLB) disease.
791nu	Setamou, Mamoudou	Texas A&M	Rear and Release Psyllids as Biological Control Agents - An Economical and Feasible Mid-Term Solution for Huanglongbing (HLB) disease.
792nu	Giulianotti, Marcelo	Torrey Pines Institute	Rear and Release Psyllids as Biological Control Agents - An Economical and Feasible Mid-Term Solution for Huanglongbing (HLB) disease.
793nu	Gang, David	Washington State University	Rear and Release Psyllids as Biological Control Agents - An Economical and Feasible Mid-Term Solution for Huanglongbing (HLB) disease.
794nu	Pelz-Stelinski, Kirsten	University of Florida	Rear and Release Psyllids as Biological Control Agents - An Economical and Feasible Mid-Term Solution for Huanglongbing (HLB) disease.
795nu	Turpen, Tom	TIG	Rear and Release Psyllids as Biological Control Agents - An Economical and Feasible Mid-Term Solution for Huanglongbing (HLB) disease.
796nu	White, James	J White	Rear and Release Psyllids as Biological Control Agents - An Economical and Feasible Mid-Term Solution for Huanglongbing (HLB) disease.
782	Triplett, Eric	University of Florida	Evaluation of Candidate Antimicrobial Compounds or Combination of Compounds using Liberibacter crescens adday, for Efficacy in Reducing Titer in Bacterium Candidatus Liberibacter asiaticus as Control Agents Against HLB
803	Duan, Yongping	USDA-ARS	Characterization and manipulation of the prophages/phages of 'Candidatus Liberibacter asiaticus' for the control of citrus huanglongbing
805	Long, Sharon	Stanford University	Functional genomics of Liberibacter in a model system

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Project No#	Principal Investigator	Institution	Project Title
809	Albrigo, Gene	University of Florida	Citrus preharvest drop related to HLB disease-Nature and control
816	Etxeberria, Ed	University of Florida	Identification of potential pathways for the spread of HLB through citrus vascular systems: Supplement
818	Etxeberria, Ed	University of Florida	Determining the contents of citrus phloem sap and its directional movement throughout the year
827	Irey, Mike	Southern Gardens	Continued funding of the Southern Gardens Diagnostic Laboratory
834	Duan, Yongping	USDA-ARS	Optimizing Heat Treatment in the Fields and Understanding the Molecular Mechanism Behind the Success of Thermotherapy for the Control of Citrus
838	Morgan, Kelly	University of	Effect of selected concentrations of calcium bicarbonate on expression of HLB
850	Albrigo, Gene	University of Florida	Scheduling ACP spring spray selection based on the Citrus Flowering Model
853	LaPointe, Stephen	USDA-ARS	Why is Poncirus trifoliata resistant to colonization by Asian citrus psyllid?
858	Santra, Swadeshmukul	UCF	New non-phytotoxic composite polymer film barrier as ACP repellent for controlling HLB infection
860	Sharma, Parvesh	University of Florida	Optical and physical deterrent for preventing ACP vector attack on citrus.
873	Lee, Richard	USDA-ARS	Application of new technologies to expedite cleaning of new accessions for use in Florida
880	Gurley, William	University of Florida	High-throughput screen of seedlings for resistance to citrus greening based on optical sensing.
894	Gruber, Barrett	University of Florida	Are there declines in hydraulic conductivity and drought tolerance associated with HLB? Supplemental support to expand plant growth regulator trials.
898	Dandekar, Abhaya	UC Davis	Rapid testing of next generation chimeric antimicrobial protein components for broad spectrum citrus
899	Etxeberria, Ed	University of Florida	Strigolactones type growth regulators to combat HLB in Florida
903	Gruber, Barrett now Brian Boman	University of Florida	Establishing citrus nutrition trials for young & mature trees in the Indian River Region to promote plant growth, mitigate HLB, decrease fruit drop, and
907	Johnson, Evan	University of Florida	Zinkicide: A novel therapeutic zinc particulate based formulation for preventing citrus canker and HLB.
909	Moudgil, Brij	University of	Soft nanoparticle development and delivery of potential HLB bactericides
910	Powell, Chuck	University of Florida	An integrated approach for establishment of new citrus plantings faced with the HLB threat
916	Wang, Nian	University of Florida	Screening and application of antibacterial producing microbes to control citrus Huanglongbing
919	Dewdney, Megan	University of Florida	A method to monitor for Guignardia citricarpa (Gc) ascospores in Florida groves.
921	Schneider, William L.	USDA-ARS	Determining the role of a novel virus in Citrus blight.
922	Wang, Nian	University of Florida	Control citrus canker by manipulating the EBE (effector binding element) of CsLOB1 which is the citrus susceptibility gene for citrus canker disease
925	Dutt, Manjul	University of Florida	Diaprepes control using a plant based insecticidal transgene approach
926.1C	LaPointe, Stephen	USDA-ARS	Sub on Large-scale mating disruption of citrus leafminer validation and product launch
926.2C	Stelinski, Lukasz	University of Florida	Sub on Large-scale mating disruption of citrus leafminer validation and product launch
926.3C	Urrutia, William		Large-scale mating disruption of citrus leafminer validation and product launch
927C	Rogers, Michael	University of Florida	Field Trial Support for CRDF CPDC
928.1C	Sutherland, Dudley		Field Trial of Naturally Occuring Microbes

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Project No#	Principal Investigator	Institution	Project Title
928.2C	Booker, Brad		Field Trials of Soil Microbials to combat HLB - Ridge Site crop Consultant
928.3C	Yonce, Henry		Field Trials of Soil Microbials to combat HLB - Southwest FL Site crop Consultant
928.4C	Wang, Nian	University of	Field Trials of Naturally occurring microbes to combat HLB
929.2C	Rucks, Phil	Rucks Nursery	Field Trial of HLB Tolerant Rootstocks
931C	Gonzalez, Claudio	University of Florida	In Vitro testing of chemicals on tree leaves collected from HLB-infected trees to determine their efficacy against HLB
932.1C	Keesling, James	University of Florida	Mathematical Modeling to evaluate Psyllid Shield Concept
933C	Minter, Tom		Oversee Field Trials of Plant Growth Regulators
934.1C	Wang, Nian	University of Florida	Soil Drenches of products to combat initial HLB infection in young citrus trees
934C	Curtis, John		Soil Drenches of products to combat initial HLB infection in young citrus trees
935C	Wang, Nian	University of Florida	Assays - continuation testing of Powell RSA 1 - antimicrobials
936C	Richardson, Taw	AgroSource, Inc.	Firewall Section 18 Grapefruit Canker (and HLB) Field use Evaluation
937C	Richardson, Taw	AgroSource, Inc.	Firewall Canker Efficiency on Round Oranges
938C	Richardson, Taw	AgroSource, Inc.	Large Scale Lab/Greenhouse/Field Trial Evaluation - HLB
939C	Richardson, Taw	AgroSource, Inc.	Bactericidal Studies Section 18 Exemption/Section 3 Registration
940C	Beeson, Richard C.	University of	Propagation of Rootstock Tree Production in Greenhouses by Seed, Stem
941C	Pelz-Stelinski, Kirsten	University of Florida	Influence of Thermal Therapy on Transmission of Candidatus Liberibacter asiaticus
942.1C	Minter, Tom		Field Trials of Plant Growth Regulators
942.2C	Yonce, Henry		Field Trials of Plant Growth Regulators
943C	Rogers, Michael	University of Florida	Support for scale-up of Thermal Therapy Treatment: Evaluation before and after thermotherapy heat treatments to combat HLB
944C	Pelz-Stelinski, Kirsten	University of Florida	RSA - Small plant assay for testing the efficacy of antimicrobial materials against HLB
945C	Gonzalez, Claudio	University of Florida	RSA - Rapid Evaluation method to evaluate drug's effectiveness directly from tree samples
946C	Nufarm	NuFarm	Mycoshield Magnitude of Residue Study for Citrus Crop Group.
15-002	Bowman, Kimberly	USDA-ARS	Development of Supersour and Other Promising Rootstocks for Florida.
15-003	Bowman, Kimberly	USDA-ARS	Metabolomic profiling to accelerate development of HLB tolerant rootstocks
15-005	Dewdney, Megan	University of Florida	Asexual inoculum production of Guignardia citricarpa, the causal agent of citrus black spot
15-008	Etxeberria, Ed	University of Florida	Determination of CLas signal in HLB-affected citrus trees
15-009	Gabriel, Dean	University of Florida	Exploiting the Las phage for potential control of HLB
15-010	Gmitter, Fred	University of Florida	Development and Commercialization of Improved New Disease Resistant Scions and Rootstocks - the Key For a Sustainable and Profitable Florida Citrus
15-013	Grosser, Jude	University of	Understanding and Manipulating the Interaction of Rootstocks and Constant
15-016C	Hall, David	USDA-ARS	High-Throughput Inoculation of Transgenic Citrus for HLB Resistance

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Project No#	Principal Investigator	Institution	Project Title
15-017	Killiny, Nabil	University of Florida	Disrupt LuxR solo quorum sensing that mediates plant virulence and insect transmission of <i>Candidatus Liberibacter asiaticus</i> to control the disease
15-020	Mou, Zhonglin	University of Florida	Create citrus varieties resistant to Huanglongbing (HLB) through transgenic and nontransgenic approaches
15-021	Pelz-Stelinski, Kirsten	University of Florida	Regulation of Las transmission and microbial colonization by the Asian citrus psyllid immune system
15-022	Reuber, T. Lynne	Two Blades	Engineering citrus for canker resistance
15-023	Schumann, Arnold	University of Florida	Citrus nutrition studies for improved survival of HLB-affected trees
15-024	Stelinski, Lukasz	University of Florida	Predicting When, Why, and Where Asian citrus psyllids move to increase effectiveness of insecticide sprays.
15-025	Stover, Ed	USDA-ARS	HLB Resistance and Tolerance in Citrus Scion Breeding
15-026	Stover, Ed	USDA-ARS	Implementing Transgenic Tools to Produce Commercial Scion Cultivars Resistant to HLB and Canker
15-027	Triplett, Eric	University of Florida	Developing a culture medium for <i>Liberibacter asiaticus</i> through comparative multi 'omics analysis with its closest cultured relative, <i>L. crescens</i>
15-028	Wang, Nian	University of Florida	Control citrus Huanglongbing (HLB) by counteracting the SA hydroxylase of <i>Candidatus Liberibacter asiaticus</i>
15-030C	Rogers, Michael	University of	Continuing Field Trial Support for CRDF CPDC
15-031C	Etxeberria, Ed	University of Florida	Development of a laser-based system to deliver antimicrobials to citrus trees: Greenhouse testing.
15-032C	Irey, Mike	Southern Gardens	Continued Support for the Southern Gardens Diagnostic Laboratory
15-033C	Orbovic, Vladimir	University of Florida	Support role of the Citrus Core Transformation Facility remains crucial for research leading to production of Citrus plants that may be tolerant or
15-034C	Roberts, Pam	University of Florida	Continuation of diagnostic service for growers for detection of Huanglongbing in citrus and psyllids to aid in management decisions
15-035C	Rogers, Michael	University of Florida	Continuing support of Citrus Health Management Areas (CHMA's)
15-036C	Rogers, Michael	University of Florida	Correlating pesticide residue analysis with psyllid feeding to improve protection of young trees
15-037C	Santra, Swadeshmukul	UCF	T-SOL™ antimicrobial for the management of citrus canker and HLB
15-038C	Stelinski, Lukasz	University of Florida	Insecticide resistance monitoring and management in Florida citrus to maintain sustainable control of Asian citrus psyllid within Citrus Health
15-039C	Stover, Ed	USDA-ARS	Secure site for testing transgenic and conventional citrus for HLB and psyllid resistance
15-040C	Triplett, Eric	University of Florida	Rapid turn-around evaluation of up to 1200 promising antimicrobial compounds (or combinations), using the <i>L.crescens</i> assay
15-042	Wang, Nian	University of Florida	Control citrus Huanglongbing using endophytic microbes from survivor trees
15-043C	Wang, Nian	University of Florida	Rapid turn-around evaluation of up to 25 antimicrobial compounds for efficacy in reducing titers of the bacterium <i>Candidatus Liberibacter</i> on diseased 6-year
15-045C	Zale, Janice	University of Florida	Continued Funding for the Mature Citrus Facility to Produce Disease Tolerant, Transgenic Citrus
15-046C	Curtis, John		Evaluation of GRAS/biopesticide products as a protectant and therapy for HLB
15-048C	Minter, Tom		Field Trials of Bactericide Application Methods.
15-049C	Booker, Brad		Evaluation of GRAS/biopesticide products as a protectant and therapy for HLB on Valencia oranges.
15-050C	Behlau, Franklin	Fundecitrus	Effect of windbreaks, copper bactericides and citrus leaf miner control on temporal and spatial progress of citrus canker
16-001	Li	Uconn	Enhancing Genetic Transformation Efficiency of Mature Citrus

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Project No#	Principal Investigator	Institution	Project Title
16-005	Wang	University of Florida	GFP labeling of Candidatus Liberibacter asiaticus in vivo and its applications.
16-007	Duan	USDA-ARS	Field evaluation of the selected variants of Ruby Red grapefruit volunteer seedlings for greater HLB resistance/tolerance.
16-009C	Triplett	University of Florida	Developing second generation antimicrobial treatments for citrus greening disease.
16-010C	Dewdney	University of Florida	Enhancement of postbloom fruit drop control measures.
16-011C	Adair		Increasing the yield and decreasing the bearing age of citrus trees in new plantings by using metalized reflective mulch while determining ACP
16-012C	Triplett	University of Florida	Antimicrobial assay for inhibition of Liberibacter crescens, the closest cultured relative of the citrus greening pathogen, Ca. L. asiaticus. RSA
16-015C	Irey RSA	Southern Gardens	Enhanced Fruit Quality Assessment from Field Trials. RSA
16-016C	Irey RNAi	Southern Gardens	Use of RNAi delivered by the Citrus Tristeza Virus Ciral Vector to control the Asian Citrus Psyllid
16-017C	Tetard	UCF	Quantitative Detection and Mapping of Bactericides in Citrus
16-019C	Pelz-Stelinski	University of Florida	RSA - Small plant assay for testing the efficacy of antimicrobial materials against HLB.
16-020C	Vincent	University of Florida	Dyed kaolin to repel Asian citrus psyllid in field conditions.
16-022C	Richardson	AgroSource, Inc.	Large Scale Lab/Greenhouse/Field Trial Evaluation - HLB
16-023C	Etxeberria	University of Florida	Determining the Efficacy of a New Class of Adjuvants in Increasing Penetration of Antimicrobials into Citrus Leaves.
16-024C	Ables	NAS	A Review of the Citrus Greening Research and Development Efforts Supported
16-025.1C	Drouillard	Ablate BioTech LLC	Comparison of chemical uptake with laser ablation and conventional foliar application – Phase One.
16-025.2C	Booker		Comparison of chemical uptake with laser ablation and conventional foliar application - Phase 1 Crop Consultant.
16-025.3C	Wang	University of Florida	Quantification of oxytetracycline in plant samples.
16-026C	Bayer Crop Science	BCS	Establishment and application of tools to allow a systematic approach to identify and characterize hits with confirmed in planta HLB activity.
16-026C	CRDF/Bayer Crop Science	BCS	Establishment and application of tools to allow a systematic approach to identify and characterize hits with confirmed in planta HLB activity.
16-027C	Futch	University of Florida	Determine impact of Reglone application on killing abandoned citrus trees in mature groves - A demonstration.
17-001C	Stelinski	University of Florida	Insecticide resistance management in Florida citrus production.
17-002C	Irey	Southern Gardens	Continued Support for the Southern Gardens Diagnostic Laboratory
17-005C	Vincent	University of Florida	Effects of heat treatments on antimicrobial uptake and translocation in citrus trees.
17-006C	Triplett	University of Florida	Monitoring of citrus groves for non-target antibiotic resistance prior to and after application of streptomycin and oxytetracycline.
18-004	Bowman, Kim D.	USDA-ARS	Development of SuperSour and other outstanding rootstocks with tolerance to HLB
18-006	Dewdney, Megan	University of Florida	Understanding the underlying biology of citrus black spot for improved
18-007	Dutt, Manjul	University of Florida	Investigating the role of transgenic rootstock-mediated protection of non-transgenic scion.
18-010	Gmitter, Fred	University of Florida	Upgrading Citrus Genome Sequence Resources: Providing the Most Complete Tools Necessary for Genome Editing Strategies to Create HLB Resistant
18-011	Gmitter, Fred	University of Florida	Part A - The UF/CREC Core Citrus Improvement Program (Complementary to Part B - The UF/CREC Citrus Improvement Program's Field Trial Evaluations)

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Project No#	Principal Investigator	Institution	Project Title
18-013	Jones, Jeffrey B.	University of Florida	Using a Multipronged Approach to Engineer Citrus for Canker Resistance
18-016	McNellis, Tim	Penn State University	Testing grapefruit trees expressing an anti-NodT antibody for resistance to HLB
18-017	Mou, Zhonglin	University of Florida	Establish early-stage field trials for new HLB-tolerant canker-resistant transgenic scions
18-018	Pelz-Stelinski, Kirsten	University of Florida	Disrupting transmission of <i>Candidatus Liberibacter asiaticus</i> with antimicrobial therapy
18-019	Rogers, Elizabeth E.	USDA-ARS	Phloem specific responses to CLAs for the identification of novel HLB Resistance Genes
18-020	Santra, Swadeshmakul	University of Central Florida	Novel multi-metal systemic bactericide for HLB control
18-022	Stover, Ed	USDA-ARS	Delivery of Verified HLB-Resistant Transgenic Citrus Cultivars
18-024	Triplett, Eric W.	University of Florida	Foliar phosphate fertilization: a simple, inexpensive, and unregulated approach to control HLB
18-025	Wang, Nian	University of Florida	Optimization of the CRISPR technology for citrus genome editing
18-026	Wang, Nian	University of Florida	Control citrus Huanglongbing by exploiting the interactions between <i>Candidatus Liberibacter asiaticus</i> and citrus
18-028C	Albrecht, Ute	University of Florida	Comparison of field performance of citrus trees on rootstocks propagated by
18-029C	Albrecht, Ute	University of Florida	Evaluation of citrus rootstock response to HLB in large-scale existing field trials using conventional and automated procedures
18-032C	Alferez, Fernando	University of Florida	Preventing young trees from psyllids and infection with CLAs through use of protective netting
18-033C	Ampatzidis, Yiannis	University of Florida	Automated root mapping to enhance field trial evaluation of citrus rootstocks in the HLB era
18-034C	Dewdney, Megan	University of Florida	Improved postbloom fruit drop management and exploring PFD spread in Florida
18-036C	Duncan, Larry	University of Florida	Cover crops and nematicides: comprehensive nematode IPM across the grove landscape
18-037C	Ferrarezi	University of Florida	Performance of newly released grapefruit cultivars and rootstocks in the Indian River Citrus District
18-039C	Grosser, Jude W.	University of Florida	Part B - The UF/CREC Citrus Improvement Program's Field Trial Evaluations (Complementary to Part A - The UF/CREC Core Citrus Improvement Program,
18-040C	He, Zhenli	University of Florida	Evaluation of the spatiotemporal dynamics of bactericides within the citrus tree via different application methods
18-041C	Johnson, Evan	University of Florida	Characterizing HLB-pH interaction to improve management of root function and tree health
18-042C	Kadyampakeni, Davie	University of Florida	Development of Root Nutrient and Fertilization Guidelines for Huanglongbing (HLB)-Affected Orange and Grapefruit
18-050C	Niedz, Randall P.	USDA-ARS	The effect of the ionization state of iron and citric acid on the health of HLB-infected trees.
18-051C	Pelz-Stelinski, Kirsten	University of Florida	Improving bactericide therapy for young tree protection and inoculum
18-052C	Qureshi, Jawwad	University of Florida	Sustainable Management of Asian citrus psyllid (ACP) and Citrus Production
18-055C	Qureshi, Jawwad	University of Florida	Optimizing Benefits of UV Reflective Mulch in Solid Block Citrus Plantings
18-056C	Stelinski, Lukasz	University of Florida	Functional IPM for Asian citrus psyllid under circumstances of chronic HLB
18-058C	Stover, Ed	USDA-ARS	Fort Pierce Field Test Site for Validating HLB and/or ACP Resistance
18-059C	Strauss, Sarah	University of Florida	Citrus row middle management to improve soil and root health
18-061C	Vashisth, Tripti	University of Florida	Evaluating sustainability of yield and fruit quality of sweet oranges with use of controlled release fertilizer and micronutrients

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Project No#	Principal Investigator	Institution	Project Title
18-064C	Wang, Nian	University of Florida	Evaluation of the control effect of bactericides against citrus Huanglongbing via trunk injection
18-065C	Stover	USDA-ARS	High-Throughput Inoculation of Transgenic Citrus for HLB Resistance
18-066C	Orbovic, Vladimir	University of Florida	Support role of the Citrus Core Transformation Facility remains crucial for research leading to production of Citrus plants that may be tolerant or
18-067C	Zale, Janice	University of Florida	Continued Funding for the Mature Citrus Facility to Produce Disease Tolerant, Transgenic Citrus.
19-001C	Irey, Mike	Southern Gardens	Continued Support for the Southern Gardens Diagnostic Laboratory
19-002	Stelinski, Lukasz	UF-CREC	Why spray if you don't need to? Putting the IPM back into citrus IPM by ground truthing spray thresholds
19-009	Johnson, Evan	University of Florida	Whole tree vs. rootstock or scion tolerance to HLB
19-010	Dewdney, Megan	University of	Determining new cost-benefit guided Phytophthora propagule treatment
19-015	Killiny, Nabil	University of Florida	Evaluation of the tolerance of newly developed citrus cultivars, on different rootstocks, to Huanglongbing
19-016	Duncan, Larry	University of Florida	How do subterranean pests and diseases affect root health of trees with and without HLB?
19-020	Ritenour, Mark A.	University of Florida - IRREC	Improved Data Collection for Citrus Field Trials
19-023	Vincent, Christopher	University of Florida	Which commercial adjuvants achieve systemic delivery of antimicrobials?
19-024	Wang, Yu	University of Florida	Near-term approaches of using alternative HLB-tolerant cultivars for increased production and improved juice quality
19-027	Zchori-Fein, Einat	Agricultural Research	Large-scale testing of the endophytic bacterium Frateuria defendens, a potential biocontrol agent of HLB
19-029C	Carlson, Kristen	CRAFT, Inc.	Citrus Research and Field Trials (CRAFT) Program Year One
19-030C	Albrecht, Ute	University of Florida	Use of compost and interaction with low- and high-vigor rootstocks to accelerate young sweet orange tree establishment and enhance productivity.
20-002C	Diepenbrock, Lauren	University of Florida	Developing near and long-term management strategies for Lebeck mealybug (<i>Nipaecoccus viridis</i>) in Florida citrus
20-003	Ferrarezi, Rhuanito	University of Florida	Fertilization of high-density plantings
20-004	Kadyampakeni, Davie	University of Florida	Organic acids compared to conventional acidification for improved nutrient uptake and root physiology
20-011	Vashisth, Tripti	University of	Right Leaf Sampling-The first and most critical step to good nutrition program
20-014	Dutt, Manjul	University of Florida	Understanding the role of systemic acquired resistance (SAR) in enhancing tolerance to HLB in the Parson Brown sweet orange
20-015C	Leslie, Michele Elemental Enzymes	Elemental Enzymes	Vismax™: A novel peptide-based therapeutic for mitigation of citrus diseases, including HLB
20-018C	Davis, Christine (UCD) NIFA Subaward	UC Davis	Collaborative approach between academics, growers and agrochemical industry to discover, develop and
20-019C	Mandadi, Kranthi (TAMU)	TAMU AgriLife	Collaborative approach between academics, growers and agrochemical industry to discover, develop and
20-2020C	Batuman, Ozgur (UF) NIFA Subaward	University of Florida	Collaborative approach between academics, growers and agrochemical industry to discover, develop and
20-021C	Carlson, Kristen (CRAFT)	CRAFT, Inc.	Citrus Research and Field Trials (CRAFT) Program Year Two
21-001	Pederson, Clay	Agromillora	Trees for Rootstocks Grower Cooperator Phase 3 Trials
21-002C	Irey, Mike	Southern Gardens	Continuing Support for the Southern Gardens Diagnostic Laboratory
21-003	Jin, Hailing	UC Riverside	Using a stable antimicrobial peptide with dual functions of treating and preventing citrus Huanglongbing

CRDF History of Funded Projects Through 02-2023

Project No#	Principal Investigator	Institution	Project Title
21-004C	CRAFT, Inc.	CRAFT, Inc.	Large Scale Field Trials
21-005	Albrecht, Ute	University of Florida	Comparison of field performance of citrus trees on rootstocks propagated by seed, cuttings, and tissue culture
21-007	Alferez, Fernando	University of Florida	Reducing fruit drop by altering hormonal responses within the tree through nutritional and hormonal therapies: a mechanistic affordable approach
21-008	Bowman, Kim D.	USDA-ARS	Development of Next-Generation SuperSour rootstocks with tolerance to HLB
21-012	Dewdney, Megan	University of Florida	Evaluating the role of greasy spot and peel disorders in the greasy green
21-013	Duncan, Larry	University of Florida	Integrated management of sting nematode in newly planted citrus trees.
21-014	El Mohtar, Chooa	University of Florida	CTV-T36 vectors as a tool to induce efficient flowering in citrus seedlings
21-021	Pelz-Stelinski, Kirsten	University of Florida	CLas Inhibition with Antisense Oligonucleotides for Management of Citrus Greening Disease
21-024	Schumann, Arnold	University of Florida	Determine optimal timing for application of fertilizer to improve fruit quality and reduce preharvest drop
21-025	Shatters, Robert (E. Stover proposal,	USDA-ARS	Transgenic capable field site to assess HLB-resistant and other improved citrus
21-028	Wang, Nian	University of Florida	Generation of non-transgenic HLB-resistant sweet orange varieties using CRISPR-Cas technology
21-032	Albrecht, Ute	University of Florida	Assist with CRDF Phase 3 Rootstock Field Trials
21-033	Albrecht, Ute	University of Florida	Subcontract to 18-004 K.Bowman bridge funding extension, Development of SuperSour and other outstanding rootstocks with tolerance to HLB
21-035	Albrecht, Ute	University of Florida	Subcontract to 21-008 K. Bowman: Development of Next-Generation SuperSour rootstocks with tolerance to HLB
22-001	Albrecht, Ute	University of Florida	Directed research – Evaluation of different trunk injection devices and oxytetracycline formulations for efficacy against HLB, phytotoxicity, and feasibility
22-002	Santra, Swadeshmakul	University of Central Florida	Management of tree health and huanglongbing disease pressure using advanced Zn formulations
22-003	Alferez, Fernando	University of Florida	Determining best timing for Brassinosteroid (Brs) application to achieve maximum beneficial effects on citrus tree health and fruit yield and quality
22-006	Curtis, John	Better Crops LLC	CRDF Study on Preharvest Fruit Drop Prevention Using Plant Growth Regulators (PGRs)
22-007	Alico, Inc.	Alico	Grower Cooperator - CRDF Rootstock Trials
22-008	Laurent, George	Center Ridge Caretaking	Grower Cooperator - CRDF Rootstock Trials
22-009	Thayer, Thomas A. Jr.	Southern Citrus Nurseries	Trees for Scion Trials
22-010	Wood, Tamara	CRAFT, Inc.	Large Scale Field Trials Cycle IV
22-011	Chater, John	University of Florida	Using high-throughput phenotyping to screen germplasm and ongoing field
22-012	Niedz, Randall	USDA-ARS	Identifying Healthy Individuals in the USDA -ARS Citrus Breeding Program and Replicated Second Stage Trials Using Drone Technology and Subsequent
22-013	Diepenbrock, Lauren	University of Florida	Getting to the root of the problem: Managing Diaprepes root weevil on trees with HLB
22-014	Diepenbrock, Lauren	University of Florida	Developing management for Bulimulus bonariensis snails in Florida citrus
22-015	Lagos, Yianni	Soil Cultre Solutions, LLC	Greenhouse and Field Trials of CRISPR-edited citrus varieties
22-016	Dutt, Manjul	University of Florida	Preliminary field trial to evaluate the ability of HLB tolerant rootstocks to protect commercial scions against HLB
22-017	Levy, Amit	University of Florida	Improving the Systemic Uptake of Therapeutic Compounds by Trunk Injections

CRDF History of Funded Projects Through 02-2023

Project No#	Principal Investigator	Institution	Project Title
22-019	Dutt, Manjul	University of Florida	Understanding the HLB tolerance and reduced fruit drop in Parson Brown and evaluation of other early season sweet oranges
22-020	Turgeon, Robert	Cornell University	Protecting citrus trees from citrus greening with anchored, single-chain antibodies