



United States Department of Agriculture

# **Plant Protection Act Section 7721 Fiscal Year 2019 Spending Plan**

Plant Pest and Disease Management and  
Disaster Prevention Program

February 15, 2019

## Contents

### Funding by Goal Area

#### National

Alabama	Montana
Alaska	Nebraska
Arizona	Nevada
Arkansas	New Hampshire
California	New Jersey
Colorado	New Mexico
Connecticut	New York
Delaware	North Carolina
Florida	North Dakota
Georgia	Northern Mariana Island
Guam	Ohio
Hawaii	Oklahoma
Idaho	Oregon
Illinois	Pennsylvania
Indiana	Puerto Rico
Iowa	Rhode Island
Kansas	South Carolina
Kentucky	South Dakota
Louisiana	Tennessee
Maine	Texas
Maryland	Utah
Massachusetts	Vermont
Michigan	Virginia
Minnesota	Washington
Mississippi	West Virginia
Missouri	Wisconsin

<b>Funding by Goal Area</b>		
<b>Goal</b>	<b>Goal Area Description</b>	<b>Funding Level</b>
1A	Enhance Plant Pest/Disease Analysis	\$2,110,939
1S	Enhance Plant Pest/Disease Survey	\$14,438,976
2	Target Domestic Inspection Activities at Vulnerable Points in the Safeguarding Continuum	\$5,749,907
3	Pest Identification and Detection Technology Enhancement	\$6,286,754
4	Safeguard Nursery Production	\$2,016,350
5	Outreach and Education	\$3,950,000
6	Enhance Mitigation Capabilities & Rapid Response	\$24,997,462
<b>TOTAL</b>		<b>\$59,550,388</b>

## Funding by State

Alabama				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0159	Asian Defoliator Survey	State Government	\$28,000
1S	1S.0300	Alabama Phytophthora ramorum Survey	State Government	\$35,000
5	5.0346	Alabama Invader Raiders	State Government	\$35,136
<b>Total</b>				<b>\$98,136</b>

Alaska				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0215	Asian Gypsy Moth Survey	State Government	\$50,000
5	5.0423	First Detector Training and Engagement in Alaska	Academia	\$25,186
<b>Total</b>				<b>\$75,186</b>

Arizona				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0436	Nursery Stock Commodity Survey	State Government	\$100,000
1S	1S.0441	AZ Nut Pest Survey	State Government	\$50,000
1S	1S.0446	AZ Palm Commodity Survey	State Government	\$75,000
6	6.0220	Developing smart molecular insecticide (RNAi-based) control method targeting Mormon crickets (Orthoptera: Tettigoniidae)	APHIS	\$133,527
<b>Total</b>				<b>\$358,527</b>

Arkansas				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0156	Grape Commodity	State Government	\$15,000
1S	1S.0172	Solanaceous Commodity Survey	State Government	\$15,000
1S	1S.0644	Grapes and Stone Fruits Survey (Year 1 of 3)	Academia	\$19,000
4	4.0641	National Standards for Specialty Crops	Academia	\$75,000
5	5.0151	Forest Pest Outreach Project	State Government	\$39,364
5	5.0154	Junior Invasives Inspector	State Government	\$40,000
<b>Total</b>				<b>\$203,364</b>

California				
Goal	Project #	Title	Cooperator Type	Funding Level
1A	1A.0559	Quantifying efficacies associated with systems-approaches to insect pest control	Non-APHIS-Federal	\$203,206
1S	1S.0006.01	Bumble bee pathogen monitoring program in California	Academia	\$37,802
1S	1S.0006.02	Bumble bee pathogen monitoring program in California	Academia	\$9,279
1S	1S.0451	Asian Defoliator Survey	State Government	\$425,000
1S	1S.0479	Citrus Commodity Survey	State Government	\$450,000
1S	1S.0481	Exotic Fruit Fly Detection	State Government	\$5,000,000
2	2.0129	California Agriculture Detector Dog Team Program	State Government	\$3,510,536
3	3.0039	Enhancing taxonomic and molecular diagnostics capacity for fruit flies (Diptera: Tephritidae)	State Government	\$196,283
3	3.0229	Improving Monitoring and Control of the Old World Bollworm <i>Helicoverpa armigera</i> (Lepidoptera: Noctuidae)	Academia	\$138,841
3	3.0263	Enhancing diagnostics of cyst forming nematodes of the genus <i>Globodera</i>	State Government	\$20,353
3	3.0301	Targeted identification of pheromones and related attractants for invasive cerambycid beetles	Academia	\$202,800
3	3.0561	Tools for the identification and detection of Graminicolous downy mildews, including the Select Agent <i>Peronosclerospora</i>	Non-APHIS-Federal	\$239,477
3	3.0578	Exploring the potential of real-time DNA sequencing for quick, accurate	Academia	\$228,156

		identification of pest mites in the field		
4	4.0101	National Ornamental Research Site at Dominican University of California (NORS-DUC)	Academia	\$406,319
4	4.0218	A Best Management Practices Program for California Nurseries and Liaison to the NORS-DUC	State Government	\$150,000
4	4.0635	Can organic-approved chemicals control glassy-winged sharpshooters expressing resistance to conventional insecticides?	Academia	\$125,000
5	5.0264	Science delivery, education and outreach for Phytophthora ramorum, the sudden oak death pathogen	Non-APHIS-Federal	\$50,000
6	6.0208	Biological Control of Bagrada Bug	State Government	\$175,725
6	6.0345	Development and Evaluation of Navel Orangeworm for Sterile Insect Release Program	Academia	\$225,188
6	6.0364	Irradiation as an Alternative to Methyl Bromide Fumigation and DPA treatment of 'Granny Smith' Apples.	Academia	\$142,893
6	6.0577	Non-target testing of parasitoids for the biological control of Shot Hole Borers (Euwallacea sp.)	Academia	\$104,291
6	6.0483	Emergency Plant Health Response Teams	State Government	\$1,779,510
<b>Total</b>				<b>\$13,820,659</b>

Colorado				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0324	Stone Fruit Commodity Survey	Academia	\$34,000
1S	1S.0488	Grape Commodity Survey	Academia	\$18,033
3	3.0253	Molecular diagnostics for invasive Diabrotica leaf beetles	Academia	\$98,793
3	3.0276	Identification of Tuta absoluta to minimize its threat to U.S. tomato production	Academia	\$83,060
3	3.0603	Safeguarding the US seed potato industry against emerging seed potato-borne pathogens that impact trade and farm viability	Academia	\$278,164
4	4.0380	Testing nursery stock for the presence of pathogens that cause Cytospora canker in peaches	Academia	\$45,000
<b>Total</b>				<b>\$557,050</b>

Connecticut				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0342	Grape Commodity Survey	State Government	\$30,976
5	5.0083	Forest and Agricultural Pest Outreach	State Government	\$39,282
5	5.0398	Wasp Watchers – Cerceris Biosurveillance	State Government	\$17,320
<b>Total</b>				<b>\$87,578</b>

Delaware				
Goal	Project #	Title	Cooperator Type	Funding Level
6	6.0297	Identification, monitoring & redistribution of Trissolcus japonicus: Biological Control of Brown Marmorated Stink Bug	Non-APHIS-Federal	\$42,000
6	6.0389	Biocontrol of Invasive Emerald Ash Borer to Protect US Plant-Related, Urban and Natural Forest Ecosystems	Non-APHIS-Federal	\$125,619
6	6.0455	Development of Biological Control Approaches to Supplementing the Eradication/Management Strategy against the Asian Long	Non-APHIS-Federal	\$118,292
6	6.0517	Determining the distribution and natural enemy complex of the Roseau Cane Scale in Asia	Non-APHIS-Federal	\$97,873
6R	6R.0549	Spotted Lanternfly Survey and Control	State Government	\$583,000
<b>Total</b>				<b>\$966,784</b>

Florida				
Goal	Project #	Title	Cooperator Type	Funding Level
1A	1A.0085	Sweetgum inscriber: assessing a \$150,000,000 threat to American urban and production forests (year 2)	Academia	\$98,880
1A	1A.0086	Narrowing down the priority offshore wood boring pests in Asia	Academia	\$123,082
1A	1A.0193	Multi-Institutional Analysis of Surveillance and Molecular Diagnostic Procedures for <i>Helicoverpa armigera</i>	Academia	\$103,049
1A	1A.0535	Improving predictions of pest plant invasion risk through development and implementation of new decision making tools	Academia	\$126,272
1S	1S.0189	Fruit Fly Detection	State Government	\$1,000,000
1S	1S.0205	Survey for Old World Bollworm ( <i>Helicoverpa armigera</i> ) and Pests of Tomato	State Government	\$160,000
1S	1S.0286	Survey for Exotic Delphacids and Associated Pathogens	Academia	\$20,000
2	2.0332	Florida Detector Dog Inspection and Enhanced Domestic Pest Detection	State Government	\$1,324,464
3	3.0439	Development of Diagnostic Tools for All Life Stages of <i>Anastrepha</i> and Other Pest Fruit Flies (Year 3)	APHIS	\$391,721
4	4.0294	Vector Identification and Mitigation for Palm-Infecting Phytoplasmas	Academia	\$210,957
5	5.0171	Plant Biosecurity and Invasive Species Youth Outreach	Academia	\$50,000
5	5.0181	Florida First Detector	Academia	\$61,917
5	5.0397	A state-wide workshop on Florida ornamental	Academia	\$59,263

		arthropod pest biology and management		
5	5.0417	Collaborative Educational and Regulatory Efforts for the California (CDFA), Florida (FDACS), and Hawaii (HDOA)	State Government	\$96,098
6	6.0194	Characterization of BMSB establishment in Florida to support biological control and mitigation	Academia	\$145,424
6	6.0343	Development of Emergency Detection, Monitoring and Management Strategies for the Red Palm Weevil.	Academia	\$54,432
6	6.0400	Phantasma Scale Survey and Control	State Government	\$142,671
6	6.0402	Bagrada bug: Establishment Potential in Florida	Academia	\$68,928
6	6.0403	Litchi Mite Eradication Program	State Government	\$427,650
6	6.0499	Biological Control of the Harrisia Cactus Mealybug in Puerto Rico	Non-APHIS-Federal	\$277,267
6	6.0545	Biological Control of Cactus Moth	State Government	\$216,243
6	6.0602	Safeguarding the genetic diversity of native and listed cacti threatened by the Harrisia Cactus Mealybug in Puerto Rico	Non-APHIS-Federal	\$78,507
6	6.0636	Alternatives to Control Melon Fly Due to Resistance to Spinosad (GF-120)	State Government	\$295,076
6R	6R.0414	Giant African Land Snail Mitigation	State Government	\$1,331,601
<b>Total</b>				<b>\$6,863,502</b>

Georgia				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0553	Blueberry Commodity Survey	State Government	\$22,000
1S	1S.0583	Oak Commodity Survey	State Government	\$30,000
1S	1S.0598	Solanaceous and Field Crop Pest Survey	State Government	\$35,600
3	3.0536	Development and validation of Nucleic acid-based diagnostic Assay for detection of Groundnut bud necrosis virus (GBNV).	Non-Profit	\$98,730
5	5.0325	First Detector Network in Georgia	Academia	\$48,568
<b>Total</b>				<b>\$234,898</b>

Guam				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0033	Survey of tomato for Ralstonia solanacearum race 3 biovar 2 and Tuta absoluta in Guam	Academia	\$38,000
1S	1S.0504	Guam Mollusk Survey	State Government	\$35,000
6R	6R.0117	Biocontrol of Coconut Rhinoceros Beetle Biotype G	Academia	\$200,000
6R	6R.0616	Response to the Coconut Rhinoceros Beetle on Guam	Academia	\$200,000
<b>Total</b>				<b>\$473,000</b>

Hawaii				
Goal	Project #	Title	Cooperator Type	Funding Level
2	2.0223	Pre-Clearance X-ray Support-NewGeneration	APHIS	\$144,500
3	3.0237	Development of molecular methods to detect select agents Xanthomonas oryzae pv. oryzae and X. oryzae pv. oryzicola.	Academia	\$103,267

3	3.0292	Resolving species complexes of Bactrocera fruit flies (year2)	Academia	\$458,608
3	3.0523	Development of molecular methods to detect Ralstonia solanacearum Race 3 Biovar 2 in field settings.	Academia	\$64,370
4	4.0271	Best Management Practices Program for Plant Quarantine Security of Hawai'i's Tropical Flowers and Foliage	Academia	\$175,000
5	5.0502	Detecting and reducing major agricultural pest snails in farms and gardens through community outreach and surveys	Non-Profit	\$100,000
6	6.0581	Development and implementation of genetic and physical management approaches for coconut rhinoceros beetle	Academia	\$260,815
6	6.0613	Multistate Priority Palm Pest Strategic Planning Summit	State Government	\$86,593
6R	6R.0335	Chemical and Biological Control of Coconut Rhinoceros Beetle in Hawaii	Academia	\$48,355
6R	6R.0392	Expanding non-transgenic genetic sexing systems to new pest tephritid species	Non-APHIS-Federal	\$190,300
6R	6R.0462	Canine detection of coconut rhinoceros beetle in Hawaii	Academia	\$121,385
6R	6R.0434	Response to coconut rhinoceros beetle in Hawaii	Academia	\$1,300,000
<b>Total</b>				<b>\$3,053,193</b>

Idaho				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0160	Idaho Stone Fruit Commodity Survey for Invasive Insect Pests	State Government	\$16,190

3	3.0631	Survey for gall forming nematodes of the family Anguinidae in the Western U.S. using newly developed molecular tools for	Academia	\$104,864
6	6.0110	Eradication Strategies for Globodera pallida, the pale cyst nematode (PCN)	Academia	\$647,411
6	6.0135	Immunity to Potato Cyst Nematodes	Academia	\$657,312
6	6.0450	Nez Perce Tribe Bio-control Project-Noxious/Invasive Weed Survey and Control	Tribal Nation	\$319,378
<b>Total</b>				<b>\$1,745,155</b>

Illinois				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0112	Orchard Commodity Survey	State Government	\$31,071
1S	1S.0266	Detection of the walnut twig beetle and thousand cankers disease of eastern black walnut in Illinois	Non-Profit	\$25,000
1S	1S.0555	Asian Defoliator Survey	State Government	\$22,500
5	5.0224	Forest Pest Outreach	Non-Profit	\$85,196
<b>Total</b>				<b>\$163,767</b>

Indiana				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0226	Specialty Crops and Exotic Wood Borer Survey	State Government	\$60,000
4	4.0173	Collection of Nursery Inspection Data for the Central Plant Board	Academia	\$74,750
5	5.0088	Forest Pest Outreach and Survey Project FY2019	State Government	\$65,702
<b>Total</b>				<b>\$200,452</b>

Iowa				
Goal	Project #	Title	Cooperator Type	Funding Level
1A	1A.0361	Implementation of systems approach to manage risks of seedborne pathogens (Regulatory Framework for Seed Health)	Academia	\$166,555
1S	1S.0003.00	Walnut Twig Beetle/Thousand Canker Detection Survey	State Government	\$10,000
6	6.0457	Effects of Inorganic Bromide Residue Study in Pregnant Cattle	Academia	\$97,507
<b>Total</b>				<b>\$274,062</b>

Kansas				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0017	Walnut Twig Beetle	State Government	\$9,400
3	3.0318	Lure and Color Trap Development for monitoring of Coconut Rhinoceros Beetle, <i>Oryctes rhinoceros</i> .	Academia	\$72,127
<b>Total</b>				<b>\$81,527</b>

Kentucky				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0014	Grape Commodity Survey	Academia	\$21,000
1S	1S.0015	Solanaceous Commodity Survey	Academia	\$29,000
1S	1S.0058	Orchard Commodity Survey	Academia	\$17,500
1S	1S.0059	Phytophthora ramorum Nursery Survey	Academia	\$20,000
1S	1S.0060	Asian Defoliator Survey	Academia	\$16,776
5	5.0066	Invasive Pest Outreach: Focus Firewood	Academia	\$10,132
5	5.0071	Invasive Pest Outreach in Kentucky	Academia	\$58,611
6	6.0106	Development of RNAi methods to control Asian	Academia	\$114,770

		long-horn beetle and Citrus long-horn beetle		
6	6.0289	Regional differences in plant and pest phenology may affect biological control efforts targeting emerald ash borer	Academia	\$66,692
6	6.0399	Developing RNAi for Suppression of Exotic Wood-Boring Buprestids	Academia	\$94,348
<b>Total</b>				<b>\$448,829</b>

Louisiana				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0012	Sudden Oak Death Survey	State Government	\$20,000
1S	1S.0047	Citrus Commodity Survey	State Government	\$12,000
1S	1S.0048	Solanaceous Commodity Survey	State Government	\$17,000
6	6.0052	HLB Tree Removal Program	State Government	\$39,327
<b>Total</b>				<b>\$88,327</b>

Maine				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0291	Small Fruit Pest Survey	State Government	\$14,320
1S	1S.0328	Vegetable Pest Survey	State Government	\$10,796
1S	1S.0341	Potato Pest Survey	State Government	\$39,700
5	5.0348	Outreach and Education of Invasive Species of Forests	State Government	\$64,439
5	5.0350	Firewood Outreach Campaign	State Government	\$28,915
5	5.0408	Tribes in Maine Invasive Species Project (TMISP)	Academia	\$75,000
<b>Total</b>				<b>\$233,170</b>

Maryland				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0305	Maryland (MDA) Small Fruit Pest Survey	State Government	\$12,512
1S	1S.0306	Maryland (MDA) Solanaceous Commodity Survey	State Government	\$25,000
1S	1S.0311	Maryland (MDA) Stone Fruit Commodity Survey	State Government	\$25,000
1S	1S.0347	Asian Defoliator Survey of Maryland	State Government	\$20,000
1S	1S.0358	Walnut Twig Beetle/ Thousand Cankers Disease Survey of Maryland	State Government	\$14,000
3	3.0073	Characterization, and diagnosis of two novel switchgrass-infecting viruses in quarantined plant materials	Academia	\$74,750
3	3.0326	Validation of generic RT-PCR assay for simultaneous detection of Cucumber green mottle mosaic virus and other Tobamovirus	APHIS	\$118,682
3	3.0356	Advanced Technology for Detection and Identification of Phytophthora Species in U.S. Nurseries	Non-APHIS-Federal	\$258,584
3	3.0424	Evaluation of high throughput sequencing technologies for the diagnostics of viral pathogens of regulatory importance	APHIS	\$140,806
3	3.0612	Fungal specimen imaging as a diagnostic reference tool for rusts and smuts	Non-APHIS-Federal	\$112,235
3	3.0618	Continued Expansion of Discover Life Native Bee Identification State Guides to Central Prairie States and Texas	Non-Profit	\$52,322

6	6.0055	Testing biological control-based IPM strategies to protect ash at early and peak stages of emerald ash borer infestation	Academia	\$156,633
6R	6R.1S.0314	Maryland (MDA) Spotted Lanternfly Survey/Outreach	State Government	\$265,776
<b>Total</b>				<b>\$1,276,300</b>

<b>Massachusetts</b>				
<b>Goal</b>	<b>Project #</b>	<b>Title</b>	<b>Cooperator Type</b>	<b>Funding Level</b>
1S	1S.0548	Orchard Commodity Survey	State Government	\$17,500
3	3.0235	Development of diagnostic tools for species of an economically important leafhopper genus Scaphytopius (Hemiptera: Cicad	Academia	\$85,994
3	3.0257	Developing traps for the spotted lanternfly, <i>Lycorma deliculata</i>	APHIS	\$31,900
3	3.0288	Lepidoptera Attractants	APHIS	\$42,000
3	3.0386	Monitoring and detection tools for Spotted Lanternfly, <i>Lycorma delicatula</i>	APHIS	\$340,000
5	5.0252	FOREST AND AGRICULTURAL PEST OUTREACH	State Government	\$71,000
5	5.0585	Asian Longhorned Beetle Awareness Campaign	State Government	\$131,250
6	6.0202	The population genetics of hybridization between non-native winter moth and native Bruce spanworm	Academia	\$108,596
6	6.0228	Attract-and-kill to monitor and manage the khapra beetle	Academia	\$140,529
6	6.0383	Radio tracking of spotted lanternfly	APHIS	\$70,593
6	6.0426	Identifying Effective Treatments for Spotted Lanternfly Control	Academia	\$143,900

6	6.0287	Facilitating Spread of the Microsporidian Pathogen, <i>Ovavesicula popilliae</i> , for Long-Term Suppression of Japanese Beetle	Academia	\$134,103
6	6.0250	Investigating the role of endosymbionts in growth and development of the spotted lanternfly	Academia	\$129,488
6	6.0390	Biological Control of Asian Longhorned Beetle using Parasitoids Recovered in China.	APHIS	\$68,682
6	6.0401	Persistence and Distribution of Two Systemic Insecticides to Control Invasive Pests in Commercial Chestnut and Walnut	Academia	\$70,000
6	6.0388	Development of biological control methods for management of spotted lanternfly.	APHIS	\$212,900
<b>Total</b>				<b>\$1,798,435</b>

Michigan				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0206	Phytophthora ramorum Survey	State Government	\$20,000
1S	1S.0210	Potato Cyst Nematode Survey	State Government	\$26,000
1S	1S.0231	Exotic Tortricidae Survey	State Government	\$61,000
1S	1S.0255	Oak and Pine Commodity Survey	State Government	\$50,000
3	3.0290	Identification resources for ECFF, <i>Rhagoletis cerasi</i>	Academia	\$71,312
3	3.0351	Morphological and DNA diagnostic tools for larval and adult softwood boring beetles (Cerambycidae).	Academia	\$133,700
5	5.0551	Forest Pest Education	State Government	\$21,672

6	6.0204	Mitigating the Impact of Emerald Ash Borer on Tribal Lands	Tribal Nation	\$111,930
<b>Total</b>				<b>\$495,614</b>

Minnesota				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0072	Cyst Nematode Survey	State Government	\$51,891
1S	1S.0074	Forest Pest Survey	State Government	\$80,000
1S	1S.0076	Pathway Survey for Pests of Multiple Agricultural Systems	State Government	\$110,000
5	5.0078	Invasive Pest Outreach and First Detector	State Government	\$104,624
<b>Total</b>				<b>\$346,515</b>

Mississippi				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0531	Pine Commodity Survey	State Government	\$21,000
1S	1S.0534	Oak Survey	State Government	\$24,000
1S	1S.0580	Palm Commodity Survey	Academia	\$40,000
1S	1S.0594	Solanaceous Commodity Survey	Academia	\$40,000
1S	1S.0596	Exotic Wood Borer Bark Beetle Survey	State Government	\$10,000
1S	1S.0609	Stone Fruit Commodity Survey	Academia	\$40,000
1S	1S.0633	Grape and Small Berry Commodity Survey	Academia	\$25,000
3	3.0526	Taxonomic Assistance to APHIS Field Operations for Surveys of Exotic Plant Pests	Academia	\$163,112
5	5.0597	Mississippi Bug Blues - Invasive Pest Outreach and Education Program	Academia	\$93,337
<b>Total</b>				<b>\$456,449</b>

Missouri				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0024	Thousand Cankers Disease	State Government	\$20,000
1S	1S.0249	Survey for Viruses in Imported and Domestically Produced Perennial Ornamental Nursery Stock	State Government	\$20,000
3	3.0429	Genome-based circumscription and phenotyping of regulated microbes, especially the select agent <i>Ralstonia solanacearum</i>	Non-Profit	\$235,086
5	5.0051	Forest Pest Outreach	State Government	\$80,000
<b>Total</b>				<b>\$355,086</b>

Montana				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0061	Mollusk Survey	State Government	\$18,000
1S	1S.0063	Exotic Wood Borer/Bark Beetle Survey	State Government	\$24,500
5	5.0188	Don't Move Firewood Outreach Campaign	Non-Profit	\$167,235
6	6.0196	Montana Biocontrol Coordination Project	State Government	\$48,875
<b>Total</b>				<b>\$258,610</b>

Nebraska				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0118	Khapra Beetle Survey	State Government	\$5,000
1S	1S.0120	Cyst Nematode Survey	State Government	\$28,000
3	3.0127	Improving diagnostics for North American cyst and root-knot nematodes	Academia	\$107,200
5	5.0476	Forest Pest Outreach	State Government	\$15,093
<b>Total</b>				<b>\$155,293</b>

Nevada				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0025	Cyst Nematode Survey in Agricultural Crops	State Government	\$35,060
1S	1S.0037	Bundled Phytophthora survey for P. ramorum and other priority species in nurseries and environments	State Government	\$20,000
1S	1S.0042	Solanaceous Commodity Survey	State Government	\$30,000
1S	1S.0137	Asian Defoliator Survey	State Government	\$16,000
1S	1S.0142	Khapra Beetle Survey	State Government	\$5,043
1S	1S.0143	Palm Commodity Survey	State Government	\$14,000
1S	1S.0145	Vegetable Crops Pest Survey	State Government	\$16,000
<b>Total</b>				<b>\$136,103</b>

New Hampshire				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0092	NH Forest Pest Survey	State Government	\$25,000
1S	1S.0096	NH Vegetable Pest Survey	State Government	\$8,956
5	5.0050	2019 Forest Pest Outreach Project	Academia	\$31,500
5	5.0100	NH Firewood Outreach	State Government	\$13,705
6	6.0381	Patterns and consequences of complex interactions between ash tree size and resistance to Emerald ash borer and effects	Academia	\$117,968
6	6.0593	Field variation in emamectin benzoate concentrations: impacts on Emerald ash borer and its biological control agents	Academia	\$101,522
<b>Total</b>				<b>\$298,651</b>

New Jersey				
Goal	Project #	Title	Cooperator Type	Funding Level
6R	6R.0212	2019 Spotted Lanternfly Survey, Outreach and Eradication	State Government	\$1,323,048
<b>Total</b>				<b>\$1,323,048</b>

New Mexico				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0166	Pecan Nut Pest Survey	State Government	\$25,000
<b>Total</b>				<b>\$25,000</b>

New York				
Goal	Project #	Title	Cooperator Type	Funding Level
1A	1A.0259	Improving detection and dispersal models for Asian longhorned beetle to enhance prediction of infestation dynamics	Non-Profit	\$81,347
1S	1S.0648	Field Crops Soybean Commodity Survey	State Government	\$50,000
1S	1S.0649	Phytophthora ramorum Survey	State Government	\$13,484
1S	1S.0651	Stone Fruit Commodity Survey	State Government	\$275,000
1S	1S.0658	Orchard Commodity Survey	State Government	\$110,000
1S	1S.0659	Grape Commodity Survey	State Government	\$125,000
3	3.0421	NPDN and State Diagnostician Preparedness Training through the USDA-APHIS-Beltsville Laboratory and other experts.	Academia	\$126,699
3	3.0543	Plant Diagnostic Laboratory Accreditation Trainings on Quality Management and of External Auditors	Academia	\$117,624
4	4.0571	Reinstating apple tree certification in New York	State Government	\$215,500

5	5.0185	New Initiatives to Reduce Importation of Forest Pests	Non-Profit	\$150,000
5	5.0586	Growing an active First Detector community	Academia	\$111,346
5	5.0660	Honey Bee Health- First Responders	State Government	\$18,267
6	6.0512	Saving ash trees in “aftermath” forests using EAB parasitoids	Academia	\$61,506
6	6.0522	Deregulation and Enhanced Regulatory Activities of Golden Nematode ( <i>Globodera rostochiensis</i> ) in NY	State Government	\$141,725
6R	6R.0662	Spotted Lanternfly Detection and Prevention Program	State Government	\$470,000
<b>Total</b>				<b>\$2,067,498</b>

North Carolina				
Goal	Project #	Title	Cooperator Type	Funding Level
1A	1A.0283	Final implementation of the OPEP mollusk models – potential impact, likelihood of introduction and survey feasibility	Academia	\$146,130
1A	1A.0293	Forecasting plant pest spread using Tangible Landscape technology	Academia	\$125,396
1A	1A.0298	Analytical support for impact assessments of taxa in the existing CAPS pest list	Academia	\$173,747
1A	1A.0320	Honeybee health: what causing bee populations to decline?	Academia	\$100,000
1A	1A.0359	Eradication Analysis & Decision Support (eRADS)	Academia	\$131,230
1S	1S.0132	Exotic Pest Survey of Grape in North Carolina	State Government	\$14,106

1S	1S.0175	Asian defoliators survey in North Carolina	State Government	\$13,047
1S	1S.0262	Solanaceous Exotic Plant Pest Survey for North Carolina	State Government	\$10,583
1S	1S.0268	Walnut Twig Beetle/Thousand Cankers Disease Survey	State Government	\$10,000
1S	1S.0275	State-specific survey for Phytophthora ramorum and P. kernoviae in North Carolina	State Government	\$14,641
5	5.0437	Invasive Pest Outreach	State Government	\$20,000
6	6.0245	Enhancing Exotic Plant-Pest Management by Creating New Pest Response Guidelines with University Collaboration	Academia	\$311,850
6	6.0299	A CRISPR-based antimicrobial system for the targeted removal of bacterial plant pathogens	Academia	\$351,941
6	6.0278	Early Detection of Spotted Lanternfly in North Carolina Through Identification of Host Material	State Government	\$61,533
<b>Total</b>				<b>\$1,484,204</b>

North Dakota				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0295	Grape Commodity Survey ND	Academia	\$30,000
1S	1S.0467	General Cyst Nematode Survey	State Government	\$12,700
1S	1S.0475	Cyst Nematode (PCN)	State Government	\$75,000
5	5.0198	Outreach and First Detector Training	State Government	\$45,000
<b>Total</b>				<b>\$162,700</b>

Northern Mariana Islands				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0564	CNMI Coconut Rhinoceros Beetle Survey - Saipan & Tinian	State Government	\$60,000
<b>Total</b>				<b>\$60,000</b>

Ohio				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0183	Phytophthora ramorum Nursery Soil Container Mix Survey	State Government	\$10,000
1S	1S.0184	Walnut Twig Beetle/Thousand Cankers Disease of Walnut Survey	State Government	\$20,000
1S	1S.0258	Grape Commodity Survey	State Government	\$20,000
1S	1S.0260	Nursery and Retail Plant Pests Survey	State Government	\$20,000
6	6.0221	Evaluating UAS-Mounted Sensors for Enhanced Grasshopper and Mormon Cricket Survey Abilities Using a Smart Rangeland	Private Entity	\$206,182
<b>Total</b>				<b>\$276,182</b>

Oklahoma				
Goal	Project #	Title	Cooperator Type	Funding Level
3	3.0575	E-probe Diagnostic Nucleic acid Analysis (EDNA) for quarantine detection and discrimination of Poaceae viruses	Academia	\$114,449
<b>Total</b>				<b>\$114,449</b>

Oregon				
Goal	Project #	Title	Cooperator Type	Funding Level
1A	1A.0452	Pathway Analysis of Scarab Beetles Via Air Cargo	State Government	\$46,322
1A	1A.0456	Development of methodology able to predict optimal field temperatures for the spread of Phytophthora ramorum	Academia	\$87,584
1A	1S.0471	Monitoring migration and population structure of the Sudden Oak Death pathogen Phytophthora ramorum in North America	Non-APHIS-Federal	\$70,000
1S	1S.0068	Asian Defoliating Moth Survey	State Government	\$250,000
1S	1S.0136	Survey of Information Technology Facilities in Oregon for Exotic Terrestrial Plant Pests	State Government	\$40,000
1S	1S.0139	Exotic Grape Pests Survey in Oregon	State Government	\$80,000
1S	1S.0163	Exotic Fruit Fly Survey in Oregon	State Government	\$30,000
1S	1S.0164	Orchard Survey in Oregon	State Government	\$100,000
1S	1S.0422	Vegetable Crops Pest Survey	State Government	\$30,000
3	3.0107	Regional Identification Center for Bark Beetle and Other Woodboring Beetles	State Government	\$52,072
3	3.0442	Rapid diagnostic tool to detect the four lineages of Phytophthora ramorum (Sudden Oak Death) in nurseries	Academia	\$112,736
4	4.0036	Caneberry nursery production in the U.S.: What are the high risk viruses circulating in the system?	Non-APHIS-Federal	\$139,235
4	4.0432	Establishing a Strawberry Nursery Stock Certification Program in Oregon – Year 2	State Government	\$65,879

5	5.0155	Don't Move a Pest Campaign – An Education for Domestic Movers and Travelers	State Government	\$75,000
5	5.0445	Evaluative, Collaborative, and Strategic Approach to Don't Pack a Pest Campaign for Student and Faculty Intern.	Academia	\$150,000
6	6.041	Population genetic analysis of Phytophthora ramorum: Evaluating the threat of forest to nursery spread	State Government	\$196,438
6	6.0028	Development of Phasmarhabditis hermaphrodita (Nematoda) as a biological control agent of invasive gastropods in Oregon	Academia	\$98,556
6	6.0089	Gypsy Moth Response for Oregon	State Government	\$587,178
6	6.0124	LBAM Response in Oregon	State Government	\$50,000
6	6.0238	Identification of germplasm with resistance to potato cyst nematodes	Non-APHIS-Federal	\$92,776
<b>Total</b>				<b>\$2,353,776</b>

Pennsylvania				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0001.01	Exotic Disease Survey in Orchards	State Government	\$100,000
1S	1S.0002.00	Pennsylvania Phytophthora ramorum Nursery Survey and regional support	State Government	\$40,000
1S	1S.0284	Stone Fruit Commodity Survey	State Government	\$16,882
1S	1S.0302	Asian Longhorn Beetle Survey	State Government	\$15,000
1S	1S.0349	Pennsylvania Small Fruit Pest Survey	State Government	\$45,000
1S	1S.0355	Pennsylvania Vegetable Pest Survey	State Government	\$50,000

1S	1S.0391	Oak Commodity Survey	State Government	\$40,000
1S	1S.0542	Public Garden Surveys	Non-Profit	\$120,000
3	3.0029	Pest Screening and Identification Services at the Carnegie Museum of Natural History	Non-Profit	\$57,500
3	3.0280	Development of an Efficient Trap for Early Detection of Exotic Hymenoptera with a Potential for Native Bee Monitoring	State Government	\$71,460
3	3.0334	Improving Survey Methodology for Woodboring Beetles with an Emphasis on Visual Cues	State Government	\$71,925
5	5.0176	Forest Pest Outreach 2019	State Government	\$64,572
5	5.0492	Sentinel Plant Network	Non-Profit	\$200,000
6	6.0519	Assessing the impact of Spotted Lanternfly on forest species in the Mid-Atlantic Area.	Academia	\$98,923
6	6.0623	Investigating Spotted Lanternfly Endosymbiont Transmission and Female Reproductive Development	Academia	\$162,717
6R	6R.0315	Enhanced Mitigation and Rapid Response to Reduce Spread and Impact of Spotted Lanternfly in the US	Academia	\$311,873
6R	6R.0304	Spotted Lanternfly Control	State Government	\$2,700,000
6R	6R.5.0490	Spotted Lanternfly Outreach and Education Farm Bill Suggestion	Academia	\$1,355,839
6R	6R.1S.0307	Spotted Lanternfly State Wide Survey	State Government	\$1,594,295
<b>Total</b>				<b>\$7,115,986</b>

Puerto Rico				
Goal	Project #	Title	Cooperator Type	Funding Level
3	3.0277	Rearing of quarantine significant insects to support PPQ research programs	Academia	\$70,500
6	6.0668	Using entomopathogenic nematodes to control coffee berry borer in coffee berries on the ground.	Academia	\$164,740
6	6.0337	Systems approach for the management of coffee berry borer in Hawaii and Puerto Rico with emphasis on biological control	Academia	\$365,955
<b>Total</b>				<b>\$601,195</b>

Rhode Island				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0420	Stone Fruit Commodity Survey	Academia	\$17,000
1S	1S.0550	Vegetable Crops Pests Survey	State Government	\$17,826
5	5.0600	Forest and Agricultural Pest Outreach Project	State Government	\$36,873
<b>Total</b>				<b>\$71,699</b>

South Carolina				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0312	Pathway Survey for Pests of Multiple Agricultural Systems	State Government	\$38,927
1S	1S.0316	Palm Commodity Survey	State Government	\$23,532
1S	1S.0317	Phytophthora ramorum Nursery Survey	State Government	\$25,000
1S	1S.0321	EWB/BB - Forest Pests	State Government	\$21,831
3	3.0248	Development of a field detection tool for Old World bollworm, <i>Helicoverpa armigera</i>	Academia	\$35,765
5	5.0322	SC Junior Invasive Inspector Program	State Government	\$30,315
5	5.0327	Forest Pest Outreach and Education	State Government	\$50,789
<b>Total</b>				<b>\$226,159</b>

South Dakota				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0062	Khapra Beetle Detection Survey	State Government	\$6,779
<b>Total</b>				<b>\$6,779</b>

Tennessee				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0023	Phytophthora ramorum Nursery Survey	State Government	\$25,000
1S	1S.0533	Solanaceous pest, virus and nematode survey	Academia	\$60,000
1S	1S.0570	Survey of viruses of stone fruits in Tennessee with special attention to Plum pox virus	Academia	\$31,000
5	5.0225	Forest Pest Outreach and Survey Project (FPOSP)	Academia	\$44,000
6	6.0233	Distribution, Biological Control and Management of Crape Myrtle Bark Scale in Tennessee	Academia	\$54,435
<b>Total</b>				<b>\$214,435</b>

Texas				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0041	Exotic (bundled) wood-boring beetle survey in Pine and Oak trees of Texas	Academia	\$60,000
1S	1S.0044	Survey of American Palm Cixiid (Haplaxius crudus) and Small Brown Planthopper (Laodelphax striatellus) in Texas	Academia	\$17,207
1S	1S.0274	Stone Fruit Commodity Survey TEXAS	Academia	\$65,000
1S	1S.0308	Grape Commodity Survey TEXAS	Academia	\$45,000
1S	1S.0313	Palm Commodity Survey TEXAS	Academia	\$60,000
2	2.0095	Critical Entry Point Monitoring for the Pests of Biosecurity Concern	State Government	\$571,000
3	3.0038	Molecular Detection of Angiostrongylus parasites of human concern in	Academia	\$75,122

		established invasive mollusks in Texas and Louisiana.		
3	3.0487	SNP-based Diagnostic Tools for the Rapid Identification of the Boll Weevil ( <i>Anthonomus grandis grandis</i> ) and Other Anthon	APHIS	\$290,399
5	5.0046	Integrated Texas State Wide Invasive Pest and Plant Public Education and Outreach Program	Academia	\$60,000
5	5.0094	Enhancing Outreach Tools and Opportunities - USDA APHIS PPQ Texas	APHIS	\$5,500
5	5.0214	Nursery Outreach Training for High-Consequence Pests	State Government	\$34,503
6	6.0207	Modeling Agricultural Timber Risks and Southern Pine Beetle Aggregation	Academia	\$98,365
6	6.0296	Microbial and Viral metagenomes of Mexfly lab colony	Academia	\$89,199
6	6.0405	Detection surveys and eradication of the invasive <i>Diaprepes root weevil</i> ( <i>Diaprepes abbreviatus</i> ) in South Texas	Academia	\$172,540
<b>Total</b>				<b>\$1,643,835</b>

Utah				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0027	Specialty Crops Commodity Survey	Academia	\$17,000
1S	1S.0121	Asian Defoliator Survey	State Government	\$15,000
3	3.0270	Next-gen molecular tools for surveying native and exotic bee diversity	Non-APHIS-Federal	\$83,219
3	3.0406	Impact of bycatch on pollinator populations and services	Academia	\$69,996

5	5.0236	Invasive Pest Outreach	Academia	\$49,995
6	6.0584	Selecting and Improving Varroa-Resistant Honey Bee Stocks for Commercial Beekeeping	Non-Profit	\$79,338
<b>Total</b>				<b>\$314,548</b>

Vermont				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0211	Exotic Wood Borer/Bark Beetle Survey	State Government	\$20,450
1S	1S.0303	Tree Fruit Pest Survey	State Government	\$18,973
1S	1S.0478	Corn Commodity Survey	State Government	\$15,000
1S	1S.0532	Solanaceous Commodity Survey	State Government	\$18,972
5	5.0053	Vermont Forest Pest Outreach Project	State Government	\$64,000
<b>Total</b>				<b>\$137,395</b>

Virginia				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0102	Phytophthora ramorum Nursery Survey	State Government	\$25,000
1S	1S.0444	Grape Commodity Survey	State Government	\$29,249
1S	1S.0454	Thousand Canker Disease/Walnut Twig Beetle Survey	State Government	\$20,000
5	5.0557	Outreach for Giant Hogweed and other Virginia Noxious weeds	State Government	\$9,455
6R	6R.0486	2019 VDACS Spotted Lanternfly Survey, Treatment and Outreach	State Government	\$483,371
<b>Total</b>				<b>\$567,075</b>

Washington				
Goal	Project #	Title	Cooperator Type	Funding Level
1A	1A.0069	Improved Risk Modeling and Monitoring for Invasive Fruit Pests	Non-APHIS-Federal	\$171,444
1S	1S.0010	Forest Pest Survey	State Government	\$100,000
1S	1S.0111	Exotic Mollusk Survey	APHIS	\$85,000
1S	1S.0167	Asian Defoliator Survey	State Government	\$277,000
1S	1S.0482	Grape Commodity Survey	State Government	\$125,000
1S	1S.0484	Stone Fruit Commodity Survey	State Government	\$175,000
3	3.0377	Western States Lepidoptera Diagnostic Center	State Government	\$141,840
3	3.0495	Field Longevity of Sesiidae Pheromone Lures	State Government	\$11,883
3	3.0632	Bee Bycatch in Different Moth Trap Technologies	State Government	\$33,268
5	5.0064	Tribal Collaborative Response to Invasive Species Project (TCRISP)	Academia	\$85,919
5	5.0409	Washington Invasive Pest Outreach	APHIS	\$22,500
5	5.0552	Enhancing the First Detector Network in Washington State: Adults and Youth	State Government	\$68,000
5	5.0560	Enhancing diagnostic and detection capacity in Washington State and the West Coast	State Government	\$77,000
6	6.0043	Vineyard Snail Eradication	State Government	\$15,928
6	6.0556	Post-entry elimination of Megastigmus larvae in imported conifer seed, year 2	Academia	\$37,327
6	6.0569	Optimizing fungicide efficacy to limit the spread of foliar Phytophthoras in landscape infestations, year 2	Academia	\$36,791
6	6.0573	Steam mitigation of invasive Phytophthora species at infested sites	Academia	\$57,707
<b>Total</b>				<b>\$1,521,607</b>

West Virginia				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0123	Asian Defoliator Survey	State Government	\$16,000
1S	1S.0126	Grape Commodity Survey	State Government	\$5,000
1S	1S.0128	Solanaceous Commodity Survey	State Government	\$13,000
1S	1S.0177	Stone Fruit Commodity Survey	State Government	\$7,500
1S	1S.0182	Nursery and Retail Plants Pest Survey (Phytophthora ramorum)	State Government	\$15,000
3	3.0239	West Virginia Insect Collection and Museum Project	State Government	\$3,000
5	5.0178	Invasive Forest Pest Outreach Project	State Government	\$25,000
5	5.0180	Visitor Invasive Pest Outreach Project	State Government	\$18,000
<b>Total</b>				<b>\$102,500</b>

Wisconsin				
Goal	Project #	Title	Cooperator Type	Funding Level
1S	1S.0518	Wisconsin Potato Cyst Nematode Survey	Academia	\$58,750
1S	1S.0525	Pathways Survey-Bundled Fruit and Vegetables	State Government	\$96,000
5	5.0438	Investing In The Future	Non-Profit	\$82,247
5	5.0473	Outreach and Education Board Meeting	Non-Profit	\$15,189
5	5.0567	Advancing identification and reporting of high consequence pests through Wisconsin First Detector Network	Academia	\$47,968
5	5.0667	NAISMA Weed Free Forage, Mulch, and Gravel Program Expansion	Non-Profit	\$111,496
<b>Total</b>				<b>\$411,650</b>

National				
Goal	Project #	Title	Cooperator Type	Funding Level
1A	1A.0227	Host range and population genetics of the velvet longhorned beetle, <i>Trichoferous campestris</i>	APHIS	\$99,735
1A	1A.0234	Insects Attack North American Trees in China	APHIS	\$56,960
1S	1S.0232	APHIS PPQ 2019 National Survey Supply Budget	APHIS	\$620,000
1S	1S.0340	National Bumble Bee Survey FY19	Non-APHIS-Federal	\$55,085
1S	1S.0563	National Survey of Honey Bee Pests and Diseases	Academia	\$1,108,047
2	2.0528	Farm Bill Canine Team Training	APHIS	\$199,407
4	4.0200	Audit Training for State and Federal Personnel – Plant Pest Management Accreditation Programs	APHIS	\$40,000
4	4.0508	National Harmonized Systems Approach to Nursery Certification	Non-Profit	\$222,160
4	4.0601	National Harmonized Systems Approach to Nursery Certification	Non-Profit	\$71,550
5	5.0415	PlayCleanGo Eastern US and National Campaign Expansion	Non-Profit	\$175,000
5	5.0647	Hungry Pests Public Outreach Campaign Continuation	APHIS	\$222,521
6	6.0222	UAS-Mounted Bait Spreaders for Grasshopper, Mormon Cricket, and Fire Ant Programs to Enhance Effectiveness and Mobility	Private Entity	\$273,981
<b>Total</b>				<b>\$3,144,446</b>

<b>Grand Total</b>	<b>\$59,550,388</b>
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