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Plant Health
Inspection
Service

2014 FARM BILL

FY15 (Annual) Implementation Plan for
Section 10007

Plant Pest and Disease Management and
Disaster Prevention Programs

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Introduction

The Agriculture Act of 2014; H.R. 2642 / Pub. L. 113-79—became law in June 2014. The provision of Section 10007 (“Plant Pest and Disease Management and Disaster Prevention”) combines the legislative language (from 2008 Farm Bill Section 10202) for the National Clean Plant Network (NCPN) with the language (from 2008 Farm Bill Section 10201) for Plant Pest and Disease Management and Disaster Prevention Programs into an amendment to the Plant Protection Act. It authorizes permanent funding for both programs, giving \$62.5 million per year in Commodity Credit Corporation funding from FY 2014-FY2017 and \$75 million per year in FY 2018 and beyond, with at least \$5 million of the funding going to NCPN annually.

This document describes Goals, Objectives and Strategies upon which to focus suggestions for funding projects through the implementation of Section 10007. Projects are organized around six goal areas: enhancing plant pest/disease analysis and survey; targeting domestic inspection activities at vulnerable points in the safeguarding continuum; enhancing and strengthening pest detection and identification technology; safeguarding nursery production; enhancing mitigation and rapid response capabilities; conducting outreach and education; and establishing clean plant center networking, diagnostics, therapeutics, and foundation plantings.

As required by the Farm Bill, the Animal Plant Health Inspection Service (APHIS) has sought input from the National Plant Board (NPB) and State departments of agriculture. APHIS has also consulted its Cooperative Agricultural Pest Survey (CAPS) cooperators, the Specialty Crop Farm Bill Alliance, industry organizations, and other governmental and non-governmental stakeholders.

Dedicating resources to strengthen pest management and eradication programs supports the APHIS Plant Protection and Quarantine (PPQ) strategic plan. To achieve the mission, PPQ has established strategic goals that include:

- Optimize PPQ’s pest management and eradication programs to make the best use of available federal, state, industry, tribal, and non-governmental capacities to protect U.S. agriculture and natural resources.
- Integrate and streamline PPQ’s safeguarding system to focus on the highest risks and to keep pace with the demands of international and domestic commerce.
- Expand economic opportunities in the global marketplace by increasing the safety of agricultural exports and imports.

APHIS will continue to keep stakeholder needs in mind as we implement Section 10007 and allocate funds. As part of this effort, we have actively sought input in developing goals, objectives and strategies. We will continue to seek feedback, evaluating and adjusting the Implementation Plan as needed to reach our goals and ensure that available funding is distributed fairly, effectively, and efficiently.

Benefits to Small Producers and Distributors

All U.S. producers, small and large, will benefit from an enhanced early detection system that prevents introductions of exotic pests from becoming widespread and requiring costly control measures. Activities conducted under the following areas will specifically benefit small producers:

Enhance Plant Pest/Disease Analysis and Survey

Under this Goal, APHIS will fund surveys for high-risk pests such as plum pox virus as part of a stone fruit commodity survey and *Tuta absoluta* (tomato leaf miner) in a Solanaceous crop survey. These surveys will provide protection for and help small growers and nursery owners avoid control costs through rapid and thorough detection of pests that threaten their operations. Also, under this strategy, APHIS will fund projects that compile, synthesize, or evaluate data to inform risk and pathway analysis, surveillance methodology, or resource prioritization.

Target Domestic Inspection Activities at Vulnerable Points in the Safeguarding Continuum

APHIS will support domestic inspection activities at high risk sites like warehouses and parcel facilities, increase inspections for regulated articles moving interstate, and utilize trained K-9 detection teams to improve detection capabilities. Developing these cooperative efforts with State agriculture regulatory agencies will help minimize impacts to producers and distributors of agricultural commodities.

Pest Identification and ID Technology Enhancement

This goal will support the ongoing development of improved Detection Technologies, Diagnostic Capacity Building, and Taxonomic Support for surveys targeting high consequence pests. This goal shares the cross-goal objective of the survey goal to detect and accurately identify new pest threats faster, allowing for more timely response thus minimizing impacts to small producers.

Safeguard Nursery Production

Activities included in this strategy include developing science-based best management practices and risk mitigation practices to exclude, contain, and control regulated pests from the nursery production chain and developing and harmonizing audit-based nursery certification programs. These activities will help small producers and distributors mitigate pest risks, reduce operational costs, and enhance the value of nursery stock they produce.

Outreach and Education

Under this Goal, APHIS will work to engage the public in early detection efforts by strengthening existing volunteer networks and building new partnerships that support outreach and education projects that enhance efforts to prevent the introduction or spread of high-consequence pests into and around the United States. Interested small producers and distributors could benefit from the training for volunteers on recognizing and reporting exotic pests.

Enhance Mitigation Capabilities

Under this Goal, APHIS will provide technical assistance prior to, during, and immediately following the development of a plant health emergency through the development of New Pest Response Guidelines (Action Plans), as well as strengthening rapid response capabilities. Larger growers can sometimes “absorb” the cost of quarantine actions and loss of business. Smaller growers are often challenged to stay in business after being under quarantine for a season. These new funds will provide for and help develop small, quick, and effective mitigation options that will reduce disproportional impacts to small growers, releasing them from quarantine more quickly and allowing them to get back into production.

National Clean Plant Network

Healthy, clean planting stock is the key to the cost-effective production of horticultural crops and is necessary for U.S. agriculture, especially for small agricultural operations, to remain internationally competitive and economically viable. The process of creating disease-free planting stock takes many years and can be cost-prohibitive for individual growers. Through NCPN support, clean stock plants will be both readily available and provided at low cost to recipients, who will primarily be small to mid-sized, local agricultural industries, such as family-owned plant nurseries and growers whose disease-free crops will result in increased commodity quality, yield, and export potential.

Partnership and Collaboration

Many organizations play a crucial role in protecting the Nation’s agriculture, environment, and natural resources from plant pests and disease. APHIS’ Plant Protection and Quarantine program (PPQ) works closely with numerous Federal, State, industry, academic, and foreign entities to develop and implement scientifically-sound approaches to pest detection, surveillance, and eradication. APHIS is responsible for coordinating the identification and prioritization of pest threats of national interest, identifying survey protocols, prescribing pest diagnostic procedures, confirming the taxonomic identity of plant pests, administering cooperative agreements to States to carry out pest and disease detection surveys, ensuring the timely recording and reporting of survey results, and coordinating regulatory responses to pest and disease outbreaks.

Other agencies within USDA that also have a role include:

- National Institute of Food and Agriculture (NIFA). NIFA provides outreach to and training for first detectors, oversees the National Plant Diagnostic Network, and conducts diagnostic response exercises for pests of regulatory significance. When a pest cannot be eradicated, NIFA, through its Land Grant University system, may provide research to support long-term control efforts.
- Agricultural Research Service (ARS). ARS conducts research, searches for biological control agents in foreign countries, and coordinates the development of certain high-priority National Plant Disease Recovery preparedness documents in response to HSPD9. ARS also serves as a technical liaison to the Environmental

Protection Agency (EPA) on pesticide issues via their Office of Pest Management Policy.

- U.S. Forest Service (FS). FS manages pests (including survey activity) in national forests, and coordinates similar efforts with the state and private foresters.
- Risk Management Agency (RMA). RMA provides guidance for documenting good farming practices and crop insurance programs.

State departments of agriculture play a critical role by carrying out pest and disease detection surveys as part of the Cooperative Agricultural Pest Survey program. States also carry out specific pest and disease detection and delimiting surveys to support control and eradication programs. States often lead specific regulatory responses to new pests in accordance with APHIS national policy, typically as a joint command with PPQ under the Incident Command System.

Expanded and enhanced partnerships with plant industries and academia has created new opportunities for information sharing and coordinated pest and disease detection and reporting activities. Collaboration and cooperation, based on well-established partnerships between plant industries, state officials, academia, and PPQ, remains the catalyst for continued success. PPQ's partnerships will be essential to the success of actions identified in this plan, as well as future strategies.

The general public also plays an essential role in protecting U.S. plant and agricultural health. In many respects the public is already involved in pest detection – a number of pests of regulatory significance have been found and reported by members of the public. However, their involvement is more serendipitous than planned. In 2007, the light brown apple moth was reported by a professor in Berkeley, California, who found it in his backyard. Asian long horned beetle was reported by a woman in Massachusetts, who found the pest while hiking. Given the large number of pests and the inherent difficulty of detecting and knowing the significance of any new or exotic plant pest, APHIS can benefit from an increase in the number of “eyes on the ground” to look for these unusual plant pests should they be introduced into the United States.

Conclusion

By capitalizing on APHIS' existing pest detection program and surveillance system, the agency will work to establish an unprecedented level of communication and coordination with the States, industry, and the public. APHIS' State plant health regulatory counterparts, departments of agriculture, tribal representatives, industry and other cooperators fully appreciate what it takes to eradicate, suppress, or manage a pest outbreak, as they are our partners in carrying out emergency response programs. While our partners actively support the survey activity to detect pests of national importance, they also want flexibility in determining how to use Federal funds provided through Section 10007 of the 2014 Farm Bill. In particular, Stakeholders have expressed the need to use the Farm Bill funds to support their efforts not just to discover new pests, but to mitigate pests offshore and pathways of introduction, prepare for the potential

introduction of certain pests, and rapidly and effectively respond to introductions when they occur.

APHIS will continue to keep the Stakeholder needs in mind as we implement Section 10007 and allocate funds. As part of this effort, we have actively sought our partners' input in developing goals, objectives, strategies and rationale, and performance measures. We will continue to seek their feedback, evaluating and adjusting the business plan as needed to reach our goals and ensure that available funding is distributed fairly, effectively, and efficiently.

Performance Measures

Successful projects produce concrete deliverables. When developing suggestions we strongly encourage submitters to include performance measures that will show to what extent project deliverables provide value (return on investment). A project that includes a plan capturing the impact or outcomes and the return on investment will be considered more strongly. This will support required annual congressional reporting that typically describes the successes, outcomes, and concrete deliverables showing the return on investment of taxpayer dollars.

Goal Area Guidance

Section 10007 is organized into goal areas. Each goal is described and to further support those that have suggestions to address the goal, there are objectives. There are also more specific implementation strategies defined each year that represent current thinking on specific activities aimed at meeting the objectives described for each goal. Suggestions that include new and innovative strategies to meeting the objectives are also encouraged.

Goal 1A – Analysis

This goal strives to enhance the gathering and analysis of all available data to efficiently and effectively make informed decisions. This includes the development of new and innovative approaches in using data to improve predictive modeling and surveillance efforts for exotic species.

Goal 1A Objectives

Objective 1	Identify risk factors and high-risk pathways through analysis of available data.
Objective 2	Develop risk based models and decision support tools to reduce the arrival and establishment of exotic plant pest species.

Goal 1A Strategies

Strategy 1: Better define biotic and abiotic variables, detect patterns, and test hypotheses that improve the understanding of where an exotic pest may arrive or be able to establish and spread.

Strategy 2: Development or application of decision support tools using data from various sources, for targeting high risk areas for surveillance.

Strategy 3: Develop and implement data-sharing protocols to incorporate PPQ, multi-agency, and commercial data for risk analysis.

Strategy 4: Conduct evaluation of analytical and resource allocation techniques to find more efficient ways to assist decision making, and to improve our ability to make optimal choices.

Strategy 5: Identify and use off-shore and domestic data sources based upon applicability, utility, data quantity, quality, and spatial and temporal resolution in order to efficiently inform decision support tools that will identify and analyze risk pathways.

Goal 1A Rationale

There is a continual need to identify plant pest threats with the increase in trade and domestic commodity flow. The use of robust analytical tools will help APHIS and its

cooperators better utilize resources to target high risk pathways and prevent pest entry, more adequately prepare for the potential introduction of high-risk pests, and allocate survey resources more strategically to discover small infestations so that rapid response can effectively eliminate those incursions.

Goal 1S – Survey

This goal strives to deploy resources to various cooperator types in order to target and detect multiple high priority pests in the highest priority commodities along national and local high-risk pathways in support of specialty crops, trade, and regulatory activities; and fund state-specific pest surveys in support of state pest risk and priorities.

Goal 1S Objectives

Objective 1	Target multiple, high priority pests for survey along national and local high-risk pathways.
Objective 2	Fund high priority nationally-directed pest surveys in support of specialty crops, trade, and regulatory activities.
Objective 3	Fund state-specific pest surveys in support of state pest risk and priorities.

Goal 1S Strategies

Strategy 1: Fund to the extent possible surveys which are national in scope with broad participation by the states, and target multiple, high priority exotic pests, specialty crop commodities, and high risk pathways for entry of exotic pests into the United States. The supported National Surveys will be determined and communicated by the FB Survey Team in consultation with PPQ program managers and state cooperators.

Strategy 2: Fund to the extent possible surveys which are more local or regional in scope, and target multiple, high priority pests, specialty crop commodities and high risk pathways into a state or within a region. Proposed State-specific Surveys should be based on the priorities of a state or region, and be important for that state or region for biological, agricultural, environmental, and/or economic reasons, and have quarantine significance.

Strategy 3: Fund to the extent possible strategic surveys aimed at filling gaps in our knowledge about the distribution of a pest, according to the objectives of the specific program. These surveys focus on specific states based upon pest biology, risk, pathways of dissemination, and objectives of the specific pest program. Note: Specific/target surveys will change from year to year to meet ever-changing pest and disease risks.

Goal 1S Rationale

High-risk States require adequate funding to cover infrastructure and related survey activity expenses. Section 10007 will provide funds to help meet the increasing demands to survey for new pests and continue to survey for exotic pests that remain of national

concern. This goal will address the most significant pests for which a robust national detection program is necessary to retain and expand our export markets. It will provide funds to survey for high consequence pests like PPV and *Tuta absoluta* in select States. This is necessary to demonstrate the absence of a pest, or “pest free areas,” for export certification purposes. It will also assure the current pest infestations, such as PPV, will be contained and possibly eradicated. This will, in turn, protect the stone fruit industry in other States (i.e., Georgia and California) where there could be severe economic consequences should PPV spread to those areas.

Additional Goal 1S Guidance

Survey Strategy

Under this major goal area, “Goal 1: Enhance plant pest/disease Survey,” APHIS’ survey strategies include: target high priority pests for survey along national and local high-risk pathways; fund high priority nationally-directed pest surveys in support of specialty crops, trade, and regulatory activities; and fund state-specific pest surveys in support of state pest risk and priorities. For FY15, surveys under Goal 1 will be divided into three specific implementation strategies; 1) National Surveys, 2) State-Specific Surveys, and 3) Program- Directed Surveys. This distinction will facilitate the review process and reporting.

1. National Surveys: National surveys are those surveys that are national in scope with broad participation by the states, and target high priority exotic pests, commodities, and high risk pathways for entry of exotic pests into the United States. The supported National Surveys may be determined and communicated by the Farm Bill Survey Team in consultation with PPQ program managers (see link provided at the end of this document) and state cooperators.

As in FY14, several surveys are deemed to be of national importance because of pathway, risk, or trade considerations. Participation by multiple states in these surveys is desirable, and states are encouraged to consider these surveys when developing proposed work for FY15 funding. States will indicate their willingness to participate in these surveys via the FY15 suggestion process. The following ‘Enhanced Port Environs’ and ‘Commodity-Based’ Surveys have been designated as being of national importance:

Enhanced Port Environs:

- Asian defoliating moths
- Exotic woodborers and bark beetles
- Mollusks
- Khapra beetle
- Other demonstrated high risk surveys along a particular pathway

The Enhanced Port Environs surveys are targeted pathway surveys to be conducted primarily along the pathway continuum from the immediate port environment and surrounding areas to inland locations. The focus should be on high risk areas, such as container yards, rail yards, and warehouses, and be based on known risk factors. Of

particular importance are those yards receiving containers from high-risk countries or from areas that are currently under treatment in the U.S. The primary objective of this effort is to monitor high-risk seaports, mills, rail yards, and other hot zones for exotic wood boring insects, Asian defoliators, and other pests that may be introduced into the United States through commerce, particularly in and near port areas receiving cargo shipments from Asia and other inland locations with demonstrated risk factors.

The emphasis is on multi-pest surveys and will follow the general survey guidelines for bundled surveys as specified in the Cooperative Agricultural Pest Survey (CAPS) 2015 National Survey Guidelines. The intent of the bundled survey is to give the States the flexibility to design their own surveys, within certain parameters. The survey must concentrate on multiple, high priority pests and efficiency of survey within the taxa listed. Asian defoliator surveys should concentrate on species of *Lymantria* and *Dendrolimus*, and follow the guidance given for the Asian Defoliator Pathway-based National Survey Reference. Exotic wood boring & bark beetle surveys should follow the guidelines and pest list in the revised Exotic Wood Borer/Bark Beetle National Survey Guidelines. For all surveys, the CAPS-Approved Methods will be the required survey methodology, if available.

Commodity-Based Surveys:

- **Grape** – commodity-based survey for multiple pests, and must include *Lobesia botrana* (European grapevine moth)
- **Palm** – commodity-based survey for multiple pests
- **Solanaceous Crops** - commodity-based (tomato and pepper) survey for multiple pests, and must include *Tuta absoluta* (Tomato leaf miner)
- **Stone Fruit** – commodity-based survey for multiple pests, and must include Plum Pox Virus (PPV)
- **Orchard** – commodity-based (Apple and Pear) survey for multiple pests
- Other specialty crop commodity surveys appropriate for Farm Bill funding, such as Fruit Crops, Tree Fruits, Vegetable Crops, and Greenhouse Crops

The Grape, Palm, Solanaceous Crops (tomato/pepper), Stone Fruit, and Orchard (apple/pear) surveys will follow the general survey guidelines for bundled surveys as specified in the Cooperative Agricultural Pest Survey (CAPS) 2014 National Survey Guidelines. The intent of the bundled survey is to give the States the flexibility to design their own surveys, within certain parameters. The survey must concentrate on multiple, high priority pests and efficiency of survey within the commodities listed. The survey must include pests from the CAPS Priority Pest List (Commodity Pests [Appendix G-1] and/or Pests of Economic and Environmental Importance [Appendix G-2]). Pests of importance to a State not on the Priority Pest List, but in common with the other pests, may be included in the bundled survey. **For Farm Bill-funded surveys, *Lobesia botrana*, *Tuta absoluta*, and Plum Pox Virus must be included in the Grape, Solanaceous, and Stone Fruit surveys, respectively.** Multiple-pest surveys will be rated higher than single-pest surveys. The CAPS Approved Methods will be the required survey methodology. The Pest Detection team will use the information from the Farm

Bill bundled surveys to aid in the development of CAPS Commodity-based surveys with accompanying approved methods.

2. State-Specific Surveys: State-specific surveys are those surveys that are more local or regional in scope, and target high priority pests, commodities, and high risk pathways into a state or within a region. Proposed State-specific Surveys should be based on the priorities of a state or region, and be important for that state or region for biological, agricultural, environmental, and/or economic reasons. Surveys not listed above or are more specific to a particular state or region also will be considered for funding in FY15 if that survey falls under the general guidelines and language of the Farm Bill and the CAPS programs. Surveys that target ‘emerging’ pest threats or recently detected pests whose regulatory status has yet to be determined will be rated higher than pests that have been established for many years and/or pests that are not regulated. Justification for this type of survey must be clear. Surveys for multiple pests will be rated higher than single-pest surveys. Surveys for management of established pests or those that are not of national quarantine significance to APHIS will not be considered. States should submit suggestions for State-Specific surveys in addition to Nationally-Directed Surveys, but not both for the same suggestion. Regional surveys are encouraged. Contact your National or Field Operations Program Managers, or your State Plant Health Director for clarification if you have questions about these types of surveys. Recognize, however, that National surveys focused on core national priorities will rate higher than State-specific surveys.

3. Program-Directed Surveys: Program-directed surveys are those surveys that may be funded through the Farm Bill, but will not be open for suggestions. These surveys will be strategic, and aimed at filling gaps in our knowledge about the distribution of a pest, according to the objectives of the specific program. These surveys focus on specific states based upon pest biology, risk, pathways of dissemination, and objectives of the specific pest program. Program managers will contact the states that are proposed to participate and they will explain the structure and requirements of the survey. States may decline, but will have an understanding of the potential impacts of doing so. The Program will submit one suggestion that will list the participating states and the budget for each state.

Pathway Approach to Survey

When planning surveys, the States are encouraged to use a pathway approach when deciding on pests and locations to survey. States should plan to survey where the risk is highest. This type of targeted detection survey or risk-based survey enhances the ability to identify and target high risk areas, zones, locations, and sites that have the highest potential for exotic pest introductions, and to successfully provide early detection of these pests. This concept can be combined with any survey using sound analytical tools, known risk sites, past history of pest detections in a State, and other avenues of information. It is understood that risk factors can be examined along a “risk continuum” beginning at offshore sites (points of origin) to points of potential establishment (commodity production areas, natural lands), and numerous risk points in between (wholesale distribution centers, nurseries, intermodal sites, rail yards, etc.). The identification of risk points and development of targeted surveys will maintain the focus

of the survey program on our top commodities at risk and the high priority pests. Surveys for multiple, high priority pests along known pathways will be rated higher than single pest surveys or surveys where no high priority pests are targeted or no pathway approach is indicated. A blanket approach to survey is not recommended.

Data Management

Data from all Farm Bill surveys under Goal 1 Survey must be entered into the National Agricultural Pest Information System (NAPIS) unless otherwise directed by specific program managers. Given the diversity of survey programs supported through the FB Section 10007 program, the FBMT relies on the direction of the various programs' cross functional teams to provide the direction on what data management requirements exist for each program (see Appendix E). Surveys not covered by a specific pest program (e.g., Khapra Beetle) must enter data into NAPIS. PPQ policy is to eventually transition all PPQ programs, including FB Section 10007, to the Integrated Plant Health Information System (IPHIS). The NAPIS database includes data validation rules ensuring PPQ approved survey methods are adhered to. Additional information on Approved Survey methods can be found on the CAPS Resource and Collaboration website. For 2015, all Goal 1 Survey projects must complete a FB Survey Summary online on the CAPS Resource & Collaboration site (A CAPS R&C login will be required). The online Survey Summary Form should be completed when the work plans are submitted to the SPHD's office. No work plans will be reviewed or approved without a completed online Survey Summary Form. Once the state submits the completed information, the state PPQ office will be required to acknowledge review before it will be reviewed by the NOM. Do not submit an electronic copy of the Summary Form with the work plans. The State's data will be available to Field Operations online. States will not be able to access other state's information. States are strongly encouraged to list State contributions to the survey effort on the Survey Summary Form.

Negative Data

The documentation of negative data is extremely important and valuable. Negative data from national surveys targeting high priority pests support trade and exports, and benefit American agriculture. The FB Goal 1 surveys strive to insure that all negative data is valid, and results from active survey efforts. The FB Goal 1 Survey has adopted the guidelines the CAPS program developed to assist in data entry of valid negative data. The CAPS-Approved Survey Methods can be found here in Appendix M-1. This matrix enables one to determine the appropriate pests that can be considered negative for a survey effort based on the survey methodology, trap/lure combination, etc. Data entry will be checked and validated against the approved survey method for each pest on the Priority Pest List. **Data not conforming to the approved method will not be accepted into the database.** Additional guidance for data entry is given in the CAPS National Survey Guidelines Appendix N for selected target pests (*Xyleborus* and *Xylotrechus*, Mollusks, Nematodes, and Phytoplasmas) at the genus and species level. Because of incomplete taxonomy, diagnostic difficulty, lack of survey methodology, or other reasons, some target pests are listed only at the genus level. In certain instances only, it may be appropriate to enter negative data at the genus level. Appendix N provides this guidance. All positive records should be at the species level.

Survey Supplies

Survey supplies (traps, lures, and accessories) for National Surveys funded under the Farm Bill will be provided by PPQ through separate Farm Bill funding. The timeframe for ordering these supplies will be communicated at a later date. Survey supplies for State-specific Surveys may not be available. Questions should be directed towards the Survey Supply Procurement Program (SSPP) National Policy Manager.

Accomplishment Report

APHIS encourages cooperators to use the CAPS Survey Accomplishment Report Template when reporting survey accomplishments. This is a requirement for CAPS surveys; therefore, APHIS believes the template is familiar to many cooperators and will provide consistent reports nationwide. The Farm Bill version of the reporting template can be found on the FY15 Farm Bill page of the CAPS Resource & Collaboration website.

Goal 2 – Domestic Inspection

This goal strives to target domestic inspection activities at vulnerable points in the safeguarding continuum that result from the movement of products and commodities potentially carrying pests of regulatory significance.

Goal 2 Objectives

Objective 1	Promote and expand inland inspections of containers and mail facilities, where possible.
Objective 2	Expand the use of canine teams for domestic inspection activities emphasizing regulatory activities.
Objective 3	Promote increased levels of inspection for regulated articles for interstate movement.
Objective 4	Support State participation in the Federally Recognized State Managed Phytosanitary Program (FRSMP). As the procedures and strategies for Official Control by States are developed, facilitate delivery of a system to enhance States’ inspection activities under Official Control.

Goal 2 Strategies

Strategy 1: Follow-up inspections conducted by cooperating regulatory agencies in states receiving international and interstate regulated cargos that present a risk of moving plant pests to include the development of inspection techniques.

Strategy 2: Emphasize new capacities of agriculture detection canine teams in support of destination inspections. Inspections would include parcel facilities and containers and support Destination Inspection for cooperators. *

*Note that canine activities related to domestic survey/pest detection activities are found under Goal 1 Survey.

Strategy 3: Emphasize inspection activities for regulated articles moving internationally or interstate.

Strategy 4: Develop the analytical capacity to identify/design workable programs and the operational mechanisms to effectively implement them, including processes for inspection.

G2 Rationale

In order to mitigate pests more effectively, it is necessary to detect pests and prohibited items that may have escaped undetected through ports-of-entry at a second line of defense. Additionally, mail facilities, along with express carrier hubs, could potentially be the most active pathway for internet commerce. These activities can be applied to the illegal movement of domestic quarantine products.

Canine teams have demonstrated their effectiveness at ports-of-entry and in California and Florida in domestic applications. This tactic provides States with an additional line of defense to prevent the introduction and interstate movement of harmful plant pests. The information gained from the interception of agriculture items and pests in domestic activities can improve States’ risk assessment efforts. Interceptions at the domestic level can also provide valuable information to first port-of-entry operations managers.

A number of pests of limited distribution within the United States are regulated by the Code of Federal Regulations and Federal Orders. Many of these allow the movement of regulated articles under Compliance Agreements and Limited Permits. Increasing the number of inspections and audits of facilities at origin and at destination will increase the level of protection against introduced pests, and increase the effectiveness in completing inspections and audits.

States may petition PPQ for official recognition of state-managed phytosanitary programs designed to protect them from the introduction and spread of harmful exotic pests which have a limited distribution in the United States. These programs allow PPQ to require action for the same pests on imported consignments destined to protected areas provided state-managed programs are able to provide equivalent protection from interstate spread. States require the analytical capacity to design such programs and the infrastructure to operate them.

Goal 3 – Enhance and Strengthen Pest Detection and Identification

This goal strives to develop, provide technology transfer training, and deploy survey procedures and tools that will improve our ability to rapidly detect and accurately identify pests of regulatory significance.

Goal 3 Objectives

Objective 1	Improve all aspects of early detection technologies and resources.
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Objective 2	Enhance diagnostic and taxonomic capacity building and related technologies.
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Goal 3 Strategies

Strategy 1: Develop and improve traps and lures in terms of efficiency of catching targets (e.g., more specific traps to reduce screening time) and ease of removing targets for identification (e.g., find alternatives for sticky traps for trapping Lepidoptera).

Strategy 2: Develop novel traps, lures, and survey strategies, to more efficiently detect target pests.

Strategy 3: Develop and apply quality control standards to traps and lures used at the field level.

Strategy 4: Develop the expertise and capacity to identify a greater variety of plant pests by:

- Providing services to allow accepting and screening a greater volume and variety of survey samples from States.
- Developing cooperative agreements capitalizing on the taxonomic expertise at other institutions (i.e., land grant universities and State departments of agriculture) to augment national identification needs for surveys and function as regional taxonomic screening centers that accept and process survey samples from neighboring States.
- Developing interactive taxonomic keys for pests groups of importance;
- Providing screening aids, reference specimens, and tools for first detectors and cooperating land grant universities, State departments of agriculture, industry, and other Federal and State agencies.
- Developing recorded, or delivering live training sessions by recognized experts to assist taxonomists/identifiers in distinguishing exotic pests from established and native species.
- Regional multi-state coordinated training on taxonomy, screening, and non-target recognition for pest surveys for tailored survey personnel.

Strategy 5: Develop, validate, transfer, and increase the deployment of molecular diagnostic tools where needed for specific plant diseases and invertebrate pest identifications and determinations of pest point of origin by increasing resources for:

- Developing molecular tools/validation for screening and/or confirming CAPS national survey target pests.
- Sequencing data for insect targets: Develop appropriate and quality sequencing data for national targets from various known geographic localities for specimens that are expertly identified and confirmed.
- Molecular tools to support the exclusion of invasive species to restrict pathways of introduction and characterize unresolved species complexes, in support of

diagnostic needs for surveys and effective pest management/eradication strategies.

Goal 3 Rationale

Developing survey tools in anticipation of future threats allows for rapid response when new exotics are detected. Applying quality control standards to traps and lures ensures that 1) PPQ receives effective products for the detection of exotic pests; and 2) PPQ can be assured that data collected from surveys is of high quality. Distributing the most effective survey tools available to the States in a timely manner increases the likelihood of the early detection of exotic pests before they become established and create significant economic or environmental damage.

The PPQ National Identification Service's (NIS) network of national specialists forms a virtual laboratory to meet many of the needs envisioned since the 1999 Safeguarding Review. There may still be a gap in the States' and PPQ's ability to efficiently process large numbers of survey samples and a need to increase the level of taxonomic capability in the field. Another important part of this responsibility is to provide coordination of existing and future regional centers housed at other institutions, universities, and State departments of agriculture performing similar functions. Molecular tools are increasingly important in screening, diagnosing and confirming pest species when morphological techniques are inadequate or non-existent, and PPQ must be proactive in the development of these tools to assist in our survey activities.

Additional Goal 3 Guidance

Detection Technologies and Resources

Detection technologies includes developing, testing, comparing, and transferring plant pest detection technologies for program implementation, as well as the development of novel and improvement of existing survey tools such as traps and lures. High priority pests for consideration include those found on the OPIS A list and/or the CAPS Priority Pest Lists.

Examples include but are not limited to:

- *Survey tool improvements:* Screening and diagnostic-friendly traps and collection methods that facilitate handling and processing of survey samples, prevent specimen damage, and/or preserve condition of specimens. Efficacy comparisons of new hot-melt sticky traps of various manufacturers against traditional sticky traps for various Cooperative Agriculture Pest Survey (CAPS) national survey target lists (the priority pests lists are found at http://caps.ceris.purdue.edu/pest_lists) of insect species, i.e., trap design experiments which verify efficacy of diagnostic-friendly traps for CAPS targets in the pests' native range (e.g., *Helicoverpa armigera*).
- *Novel trap technologies:* Research toward the development of automated traps that can record the time and date of capture, report captures remotely, and screen captures to determine target species. Also, traps that can effectively

accommodate multiple lures for multiple high priority, target pests, and traps that can use portable USB remote imaging technology for specimen screening from surveys. Another trap improvement to be explored includes traps that exclude or segregate non-targets based on behavior, size, etc.

- *Develop/ optimize attractants and traps for CAPS targets:* The following CAPS national survey targets (and potential targets) currently have only visual survey methods or existing available pheromones need refinement. The goal is to identify the most effective attractant or trap for each target species; therefore, efficacy trials in the target's native range are essential. Research would include:
 - Developing potential attractants and traps and then
 - Testing the potential attractants and traps in the target pests' native range.

Targets are listed by family.

- Buprestidae: *Agrilus biguttatus* and *Agrilus coxalis* or other potential *Agrilus* pest species.
 - Cerambycidae: *Aeolesthes sarta*, *Anoplophora chinensis*, *Anoplophora glabripennis*, *Chlorophorus annularis*, *Chlorophorus strobilicola*, *Massicus raddei*, *Monochamus saltuarius*, *Monochamus sutor*, *Monochamus urossovii*, *Trichoferus campestris*, *Xylotrechus altaicus*, *Xylotrechus antilope*, *Xylotrechus arvicola*, *Xylotrechus namanganensis*, *Xylotrechus rusticus*, and other cerambycids of quarantine importance.
 - Curculionidae: *Dendroctonus micans*, *Pissodes castaneus*, *Scolytus intricatus*, and *Tomicus minor*.
 - Lasiocampidae: *Dendrolimus superans*, *D. sibericus*, *D. punctatus*, and *D. pini*.
 - Noctuidae: *Eudocima phalonia*.
 - Scolytinae: *Euwallacea fornicatus*.
 - Yponomeutidae: *Argyresthia pruniella*.
- *Detection assays:* Affordable biochemical or molecular assays for detecting CAPS insect targets in trap samples comprised of numerous, similar but native pests (e.g., *Helicoverpa armigera* or *Autographa gamma* in pheromone trap samples) where large numbers of U.S. native non-target moths fill up traps, all of which must be dissected for morphological identification. Molecular tool must be valid for the target species against related species detectable from large composite samples and high throughput with demonstrated sensitivity and practical implementation for survey programs.
 - *Pheromone improvements:* Refine pheromone specificity to eliminate or drastically reduce non-target moths attracted: *Autographa gamma* (not attract other native or established *Autographa* spp., *Rhachiplusia ou*, *Chrysodeixis includens*, and *Trichoplusia ni*); *Helicoverpa armigera* (not attract *Helicoverpa zea*), etc.

- *Identify pest threats to U.S. germplasm:* Develop an expatriate plant inspection program to monitor pests that attack U.S. plant germplasm abroad.

Diagnostic and Taxonomic Capacity Building and Related Technologies

Capacity building includes enhancements to training, equipment, specimen collections, diagnostic tools and methods (morphological and molecular), as well as enhancements to infrastructure that improve diagnostic capability for screening, identification, and throughput of survey samples.

Examples include but are not limited to:

- 1) Develop the expertise and capacity to identify a greater variety of plant pests.
 - *Recorded training sessions:* Thorough family and species level taxonomic training given by recognized experts is needed for taxonomists/identifiers for exotic quarantine pests to distinguish from established and native species. Encouragement for submissions that include production of recorded webinars and/or video-taped training that can be posted and web-accessed. The needs are including but not limited to pests in the following groups: Coleoptera woodborer adults, Lepidoptera adults and larvae, mollusks, nematodes, and fungal pathogens of quarantine importance.
 - Regional multi-state coordinated training on taxonomy, screening, and non-target recognition for pest surveys for tailored survey personnel.
 - *Interactive taxonomic keys:* Develop interactive taxonomic keys, using well-illustrated morphological and/or molecular characters (if morphology is inadequate), that are capable of providing credible confirmations of suspect CAPS national survey targets, particularly plant pathogens and insect groups of quarantine importance which will provide tools useful to identifiers.
 - Taxonomic support to other states for pest survey sample processing where large numbers of mixed non-target pests or native insects populate samples and taxonomic expertise or capacity in the state of origin is limited.
 - The development of screening aids for pest groups on the CAPS target lists. These should be image based documents that can be posted for screeners to distinguish target genera from similar native or widely distributed look-a-like species typically found in survey samples. These aids should include external morphological characteristics of the pest clearly depicted. See examples at: http://caps.ceris.purdue.edu/screening_aids. Those insect screening aids most needed which will be given a high level of consideration are: for Lepidoptera adults (i.e., *Darna pallivitta*, *Grapholita funebrana*, *Enarmonia formosana*, *Lymantria mathura*, *L. monacha*, *L. postalba*, *L. umbrosa*, *L. xylina*, *Neoleucinodes elegantalis*, *Paysandisia archon*, and *Tecia solanivora*) and

- Coleoptera adults (i.e., *Aeolesthes sarta*, *Agrilus biguattus*, *A. auroguttatus*, *Heteronychus arator*, and *Massicus raddei*,) and others on the CAPS target list not already covered.
- 2) Develop, validate, transfer, and increase the deployment of molecular diagnostic tools where needed for specific plant diseases and invertebrate pest identifications and determinations of pest point of origin by increasing resources for:
 - *Molecular tools development/validation for CAPS national survey target pests:* These could include, but are not limited to, *Monilia polystroma/Monilinia fructigena*, phytoplasmas at species/strain level, viruses (specifically torradoviruses) at the genus and species level, *Phytophthora* at the species level, *Magnaporthe oryzae/grisea* at the strain level (specifically the wheat blast strain), *Hymenoscyphus pseudoalbidus (Chalara fraxinea)*, *Podosphaera caricae-papayae* and nematodes of quarantine importance.
 - *Molecular tools to support the exclusion of invasive species:* Develop molecular tools that are needed for invasive species such as tephritid fruit flies. This would include but is not limited to information that can help target and restrict pathways of introduction and characterize unresolved species complexes, in support of diagnostic needs for surveys and effective pest management/eradication strategies.
 - *Sequencing data for insect targets:* Develop appropriate and quality sequencing data for insects (and closely related species) on CAPS target list or other federally actionable pests including samples from various known geographic localities for specimens that are expertly identified and confirmed. The taxa in question would be focused on a pest genus or family for a particular study, especially for pest groups where current molecular data is lacking or scant. Laboratory diagnostic services for universal detection/screening of phytoplasmas to support CAPS surveys for plant pathogenic phytoplasmas.
 - For plant pathogens this could include biochemical screening methods and confirmatory diagnostics for plant pathogenic nematodes including *Bursaphelenchus cocophilus*, other pathogens from the CAPS national target list including, *Monilia polystroma/Monilinia fructigena*, *Phytophthora* spp., *Magnaporthe oryzae/grisea* wheat blast strain, as well as phytoplasmas and viruses on the list. Also, ELISA screening and confirmatory assays are needed for *Plantago asiatica* mosaic virus in lilies.
 - *Field-level diagnostic methods:* Field-level or intermediate screener diagnostic methods for CAPS national survey target pathogens at group or genus level (e.g., ELISA/immunostrip for phytoplasma or virus detection), and for *Rathayibacter* sp. to screen suspect galls from rye grass in potential domestic surveys for *R. toxicus*.

Goal 4 – Safeguard Nursery Production

This goal strives to develop management strategies for the mitigation of pests and pathogens in nursery settings while also encouraging the development and harmonization of standards to support audit-based nursery certification initiatives.

Goal 4 Objectives

Objective 1	Develop science-based best management practices and risk mitigation practices to exclude, contain, and control regulated pests from the nursery production chain.
Objective 2	To develop and harmonize audit-based Nursery Certification Programs, including the harmonization of different certification programs, audit and inspection training for cooperators, and program launching.

Goal 4 Strategies

Strategy 1: System Approaches for Nursery Production: Those initiatives that specifically explore the role of certain pests within nursery production systems. The strategy is to develop science-based best management practices (BMPs) and risk mitigation practices to exclude, contain, and control regulated plant pests from the nursery production system.

Some of the projects funded in FY14 include:

- National Ornamentals Research Site at Dominican University of California to develop *Phytophthora. ramorum* management methods
- Developing Pilots for Management of *P. ramorum* in Nursery Systems
- Use of biocontrol, soil treatments, solarization to remediate *P.ramorum*-infested soil.

Strategy 2: Systems Approaches to Nursery Certification Programs and Specialty Crop Pilot Studies: Nursery Certification Programs for high value genera that we are or may be certifying. This includes those initiatives that directly address and inform the process of inspecting, auditing and certifying the production of nursery stock. Enhanced harmonization and integration of nursery certification programs will enhance the cleanliness and health of domestically produced nursery stock, facilitate domestic and international movement of nursery stock, and safeguard the nursery industry from the introduction of exotic pests. This strategy also includes efforts directed towards the development and harmonization of certification programs for asexually propagated plant material. The certification programs provide high-quality asexually propagated plant materials free of targeted plant pathogens and pests that cause economic loss and ensure the global competitiveness of specialty crop producers. Examples of this strategy include:

Some of the projects funded in FY14 include:

- Develop software tools for managing Nursery Certification Programs
- National Voluntary Nursery Audit-based Certification Systems

- Development of Domestic Market Focused Nursery Certification Programs
- Comparing the Efficacy of Various Schemes for Pest Risk Mitigation in Nursery Stock
- Initiating or Reinstating Select State Nursery Certification Programs
- Training Auditors in Methods for Nursery Certification and Nurseries and Growers in the Importance and Value of Using Certified Nursery Stock
- Harmonizing Model Regulatory Standards among Certain Specialty Crops
- Development of Harmonized Standards for Fruit Trees, Berries, Grapes, Certification Programs
- National Nursery Virus Certification Program Pilots for Fruit Trees and Grapes
- Analyzing Nursery Source Material to Improve Virus Testing in Nursery Certification Programs
- Safeguarding Specialty Crop Nurseries
- Informing growers of the importance and economics of using plants derived from certified sources

Goal 4 Rationale

The establishment and operation of functional experimental nurseries and conduct research studies to develop BMPs to exclude, contain, and eradicate pests/pathogens in the nursery environment is critical. The ability to regulate nurseries, the movement of nursery stock, and implement effective protocols to eradicate certain pests and pathogens of concern in nursery settings such as *P. ramorum* and other pests/pathogens of concern is a major challenge. The lack of large-scale research on such pests and pathogens in a nursery environment compromises the program's degree of success in nursery certification and pest/pathogen eradication in nurseries. A fully functioning experimental nurseries within pest/pathogen infested areas will allow research to be conducted as a means of obtaining more complete knowledge and understanding of the pests/pathogens and evaluation of potential pathways for the movement of these organisms within and among nurseries and to end users. The increased understanding of pests/pathogens and host materials would help the program staff to refine program policies, protocols, procedures and regulations to more effectively manage or eradicate the pests/pathogens in the nursery setting.

Expanding experimental nurseries for conducting research on pests and pathogens of quarantine significance that are present in select States and threaten other States as well is important to expanding the nursery safeguarding continuum. Critical biological characteristics, host interactions, and control techniques are often not well known for regulated plant pest organisms. Established nursery can be efficiently adapted in part to support research to better understand organisms, hosts, and controls and thereby support the refinement of program policies, procedures, and regulations. Given its infrastructure and focus, such experimental nurseries provide an ideal location to conduct experiments on targeted and other nursery plant pests and pathogens.

Developing an audit-based, harmonized and integrated nursery certification program to facilitate exports and the domestic movement of nursery stock in partnership with State

regulatory officials is crucial for comprehensive pest/pathogen management strategies and program cost efficiencies. This includes the greenhouse and nursery certification programs. The nursery certification program has several components that include providing the cleanest possible environment; isolating the clean materials; and following systems approaches and BMPs to keep the plants healthy, documentation, recordkeeping, audit, and compliance. APHIS proposes to partner with States and industry to adopt and implement standards for certification of greenhouses and registered nursery blocks producing nursery stock. Ultimately, the certification programs will be harmonized with North American Plant Protection Organization and International Plant Protection Convention guidelines. Such certification programs will meet the mutual needs of industry, the States, and PPQ to ensure nursery production systems adequately safeguard the nursery industry from the introduction of exotic pests. An effective nursery certification system will facilitate the safe domestic movement of planting material and increase exports. Establishment of a standardized or harmonized certification program would facilitate the domestic movement of certified planting material and reduce the costs. This would allow for certain States with no nursery industry to participate without any financial burden, while still ensuring the growers in the State(s) are provided with clean material.

Developing and delivering training to the cooperators, providing material and technical assistance in developing the quality operational manual for small-scale nurseries is instrumental in advancing safeguarding nursery programs. APHIS has developed and delivers a training module through the agency's Professional Development Center (PDC) for audit-based certification programs for Federal and other cooperators. This training will be provided at regular intervals and measures will be in place to ensure the accreditation and certification of the trainees. The development of staff with adequate audit training would partially offset the cost of inspections in audit-based certification programs. It would provide incentives for the smaller nurseries to participate. Conducting outreach activities to the growers and nursery owners on the importance of clean planting material ultimately increase the demand for the material and make the industry more sustainable.

Working with all stakeholders and cooperators to launch and support the certification program for the nursery industry provides for vital linkages between this goal area and allied initiatives. This initiative includes launching audit-based certification program pilots in select States, developing the training module for audit-based certification programs, and integrating with planned initiatives of National Clean Plant Network (NCPN), as outlined under Section 10007 of the 2014 Farm Bill. The specialty crop based clean plant networks for select crops such as fruit trees, grapes, and berries are currently formed or are forming to provide certified planting materials to the nurseries and growers under State certification programs. APHIS expects that this nursery certification program will be expanded significantly as resources become available during FY 2015 and beyond. The ultimate objective is to develop a "value added certified identity" to the planting material for acceptance by the trading partners. Procedures will be in place for audit, non-compliance, and mitigation. The certification programs provide high-quality asexually propagated plant materials free of targeted plant pathogens and

pests that cause economic loss and ensure the global competitiveness of specialty crop producers. Development of a certified tag would facilitate safe domestic movement of planting material, increase grower’s confidence in the program, and promote exports.

Goal 5 – Outreach and Education

The primary goal of outreach and education activities is to increase understanding, acceptance, and support of plant pest and disease exclusion, eradication, and control efforts.

Goal 5 Objectives

Objective 1	Prevent the introduction or spread of high-consequence pests into and around the United States, particularly in high-risk areas.
Objective 2	Develop people to strengthen the safeguarding system.
Objective 3	Increase the number of people actively looking for and reporting high-consequence pests at vulnerable points along high-risk pathways.

Goal 5 Strategies

Strategy 1: Identify and address the target audiences that can adopt behaviors, to include:

- Producer/First Detector Training - Workshops, seminars, or training programs for farmers, growers, researchers, field workers, and others who are in a position to detect, identify, and/or respond to pest threats (especially tribal, underserved, minority, and specialty crop producers).
- Distribution Center Employee Outreach - Efforts to encourage people who work in/around warehouse and storage facilities, nursery and garden centers, and other vulnerable points to look for and report signs of a pest or disease.
- Traveler Outreach - Initiatives designed to inform travelers about pests and diseases and the steps they can take to prevent their introduction or spread.
- Consumer Outreach - Initiatives designed to inform consumers about pests and diseases and the steps they can take to prevent their introduction or spread.
- Youth Outreach - Initiatives designed to inform youth about invasive pests and the steps we all can take to protect agriculture and natural resources.

Strategy 2: Target the audience for Youth Outreach with initiatives designed to inform youth about invasive pests and the steps we all can take to protect agriculture and natural resources.

Strategy 3: Promote and expand the use of the APHIS PPQ Plant Biosecurity Curriculum in an effort to build an educational foundation for plant protection and biosecurity and regulatory studies in cooperation with University/College level educational institutions to meet future State, Tribal and Federal resource needs.

Strategy 4: Increase public acceptance and support of APHIS high priority plant pest and

disease eradication and control efforts.

Strategy 5: Develop and implement volunteer programs to support pest detection.

Goal 5 Rationale

Ideally, outreach and education projects will support and enhance efforts to prevent the introduction or spread of high-consequence pests into and around the United States, particularly in susceptible high-risk areas. They will increase the number of people actively looking for and reporting high-consequence pests at vulnerable points along high-risk pathways. In addition, these projects should help develop people to strengthen the safeguarding system by teaching them what they can do to help.

Goal 6 – Enhance Mitigation and Rapid Response

This goal strives to develop pest mitigation tools and technologies to be used during pest response activities to reduce potential adverse impacts and further spread of detected pests of regulatory significance and/or of economic or environmental concern.

Goal 6 Objectives

Objective 1	Develop or adapt new control technologies, tools, and treatments for use in plant health emergencies.
Objective 2	Improve the knowledge base, response options and capabilities prior to the onset of a plant health emergency.
Objective 3	Support the use existing tools and initial response protocols for the overarching goals of containment, control, or eradication at the onset of plant health emergencies.

Goal 6 Strategies

Strategy 1: Develop, promote, and implement new control technologies, tools, and treatments for use in plant health emergencies and/or established pest programs. Examples for this Goal 6 strategy include quarantine treatments and biological control.

Strategy 2: Enhance preparation for a plant pest emergency by improving the knowledge base, response options, and capabilities prior to the onset of a plant pest emergency, including the development and training of rapid response teams (ICS), development of New Pest Response Guidelines and offshore approaches to developing management options for key invasive pests before they arrive.

Strategy 3: Provide initial or short term funding to quickly employ existing tools and initial response protocols for the overarching goals of containment, control, or eradication immediately following the development of a plant health emergency.

Strategy 4: Provide technical assistance prior to, during, and immediately following the development of a plant health emergency through the development of New Pest

Response Guidelines (NPRG) for the potential introduction of exotic plant pests.

Goal 6 Rationale

An average of 30 new exotic plant pests is introduced to the United States each year. When a new pest is reported, APHIS and the States establish survey, control, and regulatory activities to manage the pest outbreak. In preparation for these plant pest introductions before they reach the United States, APHIS and States identify high-risk pest threats utilizing several current programs within PPQ, including the NPAG, OPIS reports, NAPPO Pest Alerts, journals, and communications. Technical plant pest information is gathered to develop mitigation activities in the form of a NPRG, balanced between operational feasibility, scientific objectivity, and environmental consideration.

The time between the detection of an exotic pest and corresponding unified response activities is a critical window in which to limit international trade impacts, environmental damage, and economic costs. APHIS will provide funds for the initial response protocols of survey, regulatory, and control activities, including: Travel costs associated with personnel mobilization; Technical working group and subject matter expert activities; Resource purchasing for incident activities; Vehicle use and maintenance; Communications and outreach activities, including news and media events to alert stakeholders and public of pest threat; Program command post startup and overhead; Identification and diagnostic equipment and personnel; Rapid survey and detection tools and equipment; Information technology equipment and support; Development of action plans; Safety equipment and personnel protective devices; and Mitigation and containment costs.

The New Pest Advisory Group (NPAG) works with interested and involved parties, surveys the literature, gathers expert opinion, and makes recommendations that are in the best interest of safeguarding American plant resources. Only the PPQ Deputy Administrator (DA) can accept and put the recommendations into effect. NPAG recommendations may be one of the following: collect additional information before a decision can be made to address the new pest; conduct a survey to assess the pest's geographic range, host range, or damage; develop methods to detect, identify, control, or eradicate the pest; recommend no action; recommend an action to eradicate the pest, to quarantine the infected or infested area, to evaluate biological or chemical control for pest management, to prepare and distribute educational information to the public, or to recommend that PPQ refer options and actions to other institutions, such as affected States or industries.

The Incident Command System (ICS), a management tool to provide cooperating agencies a unified structure in an emergency, should be encouraged during the initial stages of an emergency. Funding should occur to properly fill required Command and General Staff positions with qualified personnel, ensuring travel costs are covered at the beginning phase of an emergency. APHIS will promote the completion of After Action Reports and conferences to identify the major strengths of the initial response protocols and the primary areas for improvement.

Following the national guidance within the Homeland Security Exercise and Evaluation Program (HSEEP), PPQ’s preparedness activities will be achievable by measuring readiness and directing resources to those areas of greatest risk and greatest need. Utilizing a building block approach to exercise training and scheduling, a clearly identified improvement planning process will enhance response activities within the agency, among stakeholders, and throughout industry for a rapid mitigation of plant pest introductions. Funding for the building block approach provides for focused improvement in response activities, including survey and detection, regulatory and control methodologies of plant pest emergency responses. In addition, the funding will allow HSEEP qualified personnel within PPQ to assist in plant health emergency start up by mentoring Command and General staff.

National Clean Plant Network (NCPN)

This goal strives to establish and support a network a clean plant centers and associated programs whose purpose it is to introduced, diagnose, provide therapies, and build and manage foundations of ‘starter material’ of specialty crops otherwise not allowed entry into the US due to plant pathogens of concern. This plant material is then made available to States in support of nursery certification programs and to nurseries and growers.

NCPN Objectives

Objective 1	<u>Governance and Structure</u> : Enable the interaction among industry, research and regulatory communities to determine the resources and structure needed to ensure a viable and cully functioning clean plant system.
Objective 2	<u>Operations</u> : Provide rapid and safe introduction and release of selections from foreign and domestic sources for commercial development, including providing foundation stock to industry within prescribed state and federal certification schemes.
Objective 3	<u>Foundations</u> : Provide foundation stock to industry within prescribed state and federal certification schemes.

NCPN Strategies

Strategy 1: The NCPN will develop and implement a management governance structure.

- The governance system will insure the continual, unimpeded flow of information among the components of the network to facilitate the accomplishment of the NCPN mission.

Strategy 2: The NCPN will establish, maintain and enhance a network of facilities and expertise for testing and providing therapy for clones of specialty crops based on climatic suitability, current infrastructure and expertise, regional needs and disease and insect pest safety standards.

- The NCPN will conduct research to develop rapid, accurate testing techniques to meet the needs of regulators and the industry.

- The NCPN will use the best available methods to release pathogen and insect pest tested planting material in a safe and timely fashion.
- The NCPN will use reasonable methods to obtain desired accessions from reliable sources both within and outside the network. The NCPN will use reasonable methods to obtain desired accessions from reliable sources both within and outside the network.

Strategy 3: The NCPN will establish collections of cultivars that are tested and found to be disease and insect pest free in accordance with NCPN standards.

- The NCPN will maintain collections in accordance with accepted standards
- The NCPN will establish and coordinate working relationships with and among appropriate entities that certify plants for planting.

NCPN Rationale

NCPN is established out a sense that there is a crucial need to support clean plant centers engaged in some of the classical and advanced clean plant operations and service work needed by industry and being led by those centers. These activities, as supported by the Farm Bill 2014, have become ‘core’ to the purpose and priorities of NCPN, including:

- Supporting importation or **introduction** of plant material into quarantine or otherwise into the program
- Conducting **diagnostics** of program plant material for purposes of ascertaining pathogen status and possible needs for further action
- Engaging in **therapeutics** to clean up plant materials as requested by industry
- Supporting clean plant **foundations**

Additionally, as the network took shape and advanced, stakeholders further discussed the needs, interests, and boundaries of NCPN. It became evident that other components were crucial for good program management and to ensure for the success, viability, and advancement of this initiative. These included:

- Governance
 - Networking, Communications, Consultations, Meetings, Planning, and Policies
- Research and Methods Development
 - Establishment and of Advancement Means, Methods, and Technologies
- Education
 - Outreach, Extension, Communications, and Economics
- Germplasm Collections
 - Support for Clean-Up of Valuable Collections as Requested by Industry
- Staffing and Facilities Support
 - Personnel, Refurbishment, Equipment, and Supplies
- Regulatory Support
 - Permits, Regulations, Certification, and Quality Management
- Resources Management
 - Grantsmanship, Program Reviews, and Critical and Emerging Issues Management

- External Linkages
 - Connecting NCPN to Related Initiatives or Programs Impacting NCPN such as other Farm Bill 2014 Section 10007 initiatives, including the Safeguarding Nursery Production program and the Enhancing and Strengthening Pest Detection and Identification program

To accomplish its mission, NCPN engages in a series of activities, including the following:

- Creating National and Commodity-Based Clean Plant Network Governing Bodies and Working Groups.
- Developing Consultative and Communications Procedures with stakeholders.
- Pursuing Strategic and Business Plans and other guidances and opinions
- Engaging in needs driven Priority Setting with commodity-based specialty crop partners.
- Supporting a network of Facilities and Expertise for pathogen testing, therapy, and associated research, methods development, risk management, education, and outreach.
- Establishing Foundation Clean Stock plantings and provide material to nurseries and growers within prescribed nursery certification programs.
- Improving the National Plant Germplasm System by testing and cleaning plant material for industry
- Setting Diagnostic Guidelines and National Standards.
- Conducting Research and Methods Development to support clean plant programs.
- Advocating for industry-driven Best Management Practices in support of clean plant networks.
- Organizing and deliver Education, Extension, and Outreach programs.
- Coordinating and share the use of scarce Resources to support commodity-based clean plant networks.

Appendix 1: Farm Bill Management Team Charter

Purpose of the Charter

To establish rules of operation for the Farm Bill Management Team (FBMT) and the Farm Bill Goal Teams.

Mission

APHIS-PPQ is charged with implementing Section 10007 the Farm Bill to prevent the introduction or spread of plant pests and diseases that threaten U.S. agriculture and the environment. Under the Farm Bill, APHIS-PPQ provides funding to strengthen the nation's infrastructure for pest detection and surveillance, identification, and threat mitigation, while working to safeguard the nursery production system and support the establishment of a network of clean plant centers.

The FBMT will provide the strategy for identifying projects of national priority in consultation with the National Plant Board, industry representatives and other concerned parties. The FBMT coordinates review and implementation of project proposals; sets and enforces policy regarding appropriate use of FB funding; annually reviews the policy, strategy, and performance of the FB program; and revises national program guidelines as needed and posts to the public website. For Farm Bill 2014, Section 10007(a) the National Clean Plant Network (NCPN); this program is administered under a Memorandum of Understanding among three USDA agencies; APHIS, ARS, and NIFA. NCPN's mission, vision, goals, objectives, strategies, priorities, and performance measures are established and managed by the programs Governing Board in further consultation with the supporting Governing Bodies and Working Groups.

Membership: Roles and Responsibilities

PPQ has maintained a decision-making process for submitting funding recommendations to support the Department's development of Recommended Spending Plans for Farm Bill Section 10007. This process involves a robust evaluation of current plant protection issues facing PPQ, soliciting recommendations from various external cooperator and stakeholder groups, as well as internal stakeholders, about these issues, and consolidating findings into PPQ's prioritized funding recommendations.

The decision-making processes used to develop PPQ's funding recommendations focus on six goal areas within the Farm Bill. These goal areas are: 1) pest survey and analysis, 2) domestic inspection, 3) pest identification and ID technology, 4) nursery systems, 5) outreach and education, and 6) enhanced mitigation. Additionally, the process by which the National Clean Plant Network (NCPN) goal area uses to arrive at funding recommendation for its specific goal area is determined by the NCPN Governing Board in consultation with the respective network membership as per its established traditions.

This process is managed by the Farm Bill Management Team and Goal Teams. The following positions comprise the membership of the entire Farm Bill Team.

Farm Bill Management Team is the PPQ CFWG consisting of a member from each Core Functional Area (Policy Management, Field Operations, and Science and Technology). The National Clean Plant Network Program Manager is also considered a member of the FBMT.

Representative from ***Policy Management*** coordinates activities of the FBMT and provides overall direction for the FB Section 10007 Program, and is accountable for the administration of the program in Policy Management.

- serves as the principal liaison with the PPQ Deputy Administrator's Office, APHIS Farm Bill Working Group, and Legislative and Public Affairs
- sets meeting agendas and times and coordinates communications among PPQ managers in Field Operations, Policy Management, Science & Technology, and the FB Goal Area Team Leads
- supports the PPQ Fundholders by providing FB related information for decision making
- supports communication and reporting requirements at the USDA, APHIS, and PPQ level, including the annual Congressional report
- participates in annual discussions of FB budget formulation
- ensures FB is included in the planning and implementation of PPQ national programs, including tracking the performance of the FB Section 10007 Program
- ensures other members of Policy Management review and comment on FB suggestions to ensure the highest priority suggestions are identified

Representative from ***Field Operations*** is responsible for coordinating the review of State performance, and is accountable for the administration of the FB Section 10007 Program in PPQ Field Operations.

- communicates FB policy and issues to FO-AEDs, who supervise SPHDs
- communicates programmatic issues to the States through the SPHDs, who fiscally and programmatically are accountable for periodic and final accomplishment reports for FB FO projects in their respective states
- supports Policy Management representative in communication and reporting requirements
- participates in annual discussions of FB budget formulation and ensures stewardship of Field Operations budget
- ensures National Operations Managers (NOMs) in other program areas review and comment on FB suggestions to ensure the highest priority suggestions are identified
- works with Policy Management and Science and Technology representatives to set meeting agendas and times and coordinates communications among PPQ Field Operations, FB Goal Area Team Leads and external stakeholders

Representative from ***Science and Technology*** is responsible for ensuring the Agency's goals and objectives for the science and technology aspects of FB projects are fully integrated into the process and will coordinate the administration of the FB Section 10007 Program in PPQ CPHST.

- communicates FB policy and issues to S&T Management and project ADODRs
- coordinates S&T FB proposal submissions with S&T Management and project ADODRs to ensure work and financial plans are technically sound and address the needs of PPQ National Policy and Operations Managers
- supports Policy Management representative in communication and reporting requirements
- ensures other members of S&T review and comment on FB suggestions to ensure the highest priority suggestions are identified
- participates in annual discussions of FB budget formulation and ensures stewardship of Science and Technology budget
- works with Policy Management and Field Operations representatives to set meeting agendas and times and coordinates communications among PPQ S&T Management, FB Goal Area Team Leads and external stakeholders

National Clean Plant Network (NCPN) Coordinator is responsible for ensuring the Agency's and associated cooperators goals and objectives for the National Clean Plant Network are well coordinated with the FBMT initiatives designed to effectively manage Farm Bill resources related to Section 10007(a) NCPN.

- serves as requested as a member of the FBMT relative to NCPN and other initiatives
- annually reviews and updates the NCPN Goal Area definition, objectives, and implementation strategies to help ensure Goal Area proposals address current and emerging National Clean Plant Network needs
- coordinates with other goal team areas in the review and documenting of comments via the Farm Bill suggestion system (Metastorm) that relates to programs allied to NCPN
- manages the independent NCPN Request for Applications (RFA) process through a separate process using 'Grants.gov' and ensures that applications/proposals submitted to NCPN for consideration are discussed and coordinated as necessary with the FBMT and Goal Area Team Leaders as appropriate

Goal Area Team Leaders are responsible for coordinating annual reviews of FB project submissions that address particular FB Goal Area objectives and ensures projects are aligned with and support agency priorities.

- annually review and update the Goal Area definition, objectives, and implementation strategies to help ensure Goal Area project submissions address current and emerging plant pest prevention, detection, and/or mitigation needs
- coordinate with goal team members and other subject matter experts in the review and documenting of comments via the Farm Bill suggestion system (Metastorm)
- annually review and update the Decision Lens model used to rank FB project submissions
- coordinate Goal Area Team reviews of FB project submissions using established Decision Lens criteria (DL model) and develop recommended Goal Area spending plans, and provide input into adjusting spending as needed

- provide detailed feedback to submitters when requested on the strengths and weaknesses of their proposal submissions
- build, review, and renew team membership as necessary to ensure for comprehensive inclusion of interested parties

Goal Area Team Members include PPQ Program Managers, PPQ State Plant Health Directors (SPHDs), State Plant Regulatory Officials (National Plant Board members), Specialty Crop Farm Bill Alliance (SCFBA), Tribal, academia, other industry representatives, and representatives from other Federal agencies. Goal Area Team Members are responsible for reviewing and rating FB project proposal submissions in Decision Lens.

- participate in the review and documenting of comments via the Farm Bill suggestion system (Metastorm)
- provide input into the annual review of, and development of Decision Lens model criteria used to rank FB Section 10007 project submissions
- review FB project submissions and rank them in Decision Lens using established Goal Area criteria
- identify project suggestions where a conflict of interest may exist and communicate to Goal Area Team Lead that a recusal is necessary

State Plant Health Directors (SPHDs) and State Plant Regulatory Officials (SPROs), in consultation with the FBMT, are responsible for reviewing and evaluating FB Section 10007 project submissions important to and submitted from cooperators within their respective State(s).

- review evaluation criteria to ensure they are aligned with FB Section 10007 Program priorities and that there is consistency in the process
- provide comments on FB Section 10007 project submissions related to their states during the Farm Bill Suggestion System (Metastorm) project submission process to help Goal Area Teams identify the highest priority projects
- ensure the FBMT and team leads are made of aware or requests for feedback so submitters are provided detailed feedback on the strengths and weaknesses of their proposal submissions

SME Reviewers comprise National Policy Managers (NPMs), National Operations Managers (NOMs) and the Subject Matter Experts of S&T and others in consultation with the FBMT are responsible for reviewing and evaluating FB Section 10007 project submissions related to their program area/area of expertise to ensure funded projects are aligned with PPQ program needs and/or are scientifically sound.

- provide comments on FB Section 10007 project submissions related to their program area/area of expertise during the Metastorm application process to help Goal Area Teams identify the highest priority projects and provide detailed feedback to submitters on the strengths and weaknesses of their proposal submissions
- help ensure the detailed work and financial plans are technically sound and aligned with the intent and scope of the original suggestion

Membership: Selection Process and Terms of Service

The Farm Bill Management Team representative from each Core Functional Area will be a permanent member as long as they remain in their position with the Farm Bill Program.

The FBMT values diversity in member representation and will strive to be as inclusive as possible of all cooperating entities interested in participating. The APHIS Farm Bill Goal Teams are responsible for reviewing, rating, and providing feedback on project suggestions that are submitted each year through the Farm Bill process. To ensure broad participation by APHIS and our stakeholders, teams are typically composed of representatives from APHIS and USDA's Agricultural Research Service and the U.S. Forest Service; the National Plant Board; Tribal representatives; and representatives from the Specialty Crop Farm Bill Alliance.

To maintain balance and minimize bias while managing the burden placed on any one participant, APHIS requires that each suggestion reviewer participate on only one Goal Team in a given year. Individuals can, however, provide general comments as a subject matter expert for multiple suggestions in multiple goal areas, as needed or requested. The FBMT aims for continuity and frequent turnover is discouraged; however, adjustments will be allowed to accommodate changes as necessary.

- *Goal Area Team Leaders* will serve a 2 year term and then rotate off the team, or by consensus of the Team Lead Backup and FBMT continue for an additional 2 year term. It is understood the Team Lead Backup would continue as Team Lead Backup and ascend to Goal Team Lead for the next rotation. This rotation schedule will allow for strong continuity of operations while setting a reasonable duration for serving in this leadership capacity. After the current year's Spending Plan is released, Team Leads and Team Lead Backup continue to participate, providing feedback. They should also confirm next year's Goal Area Team Members (GATM) by January of the next year.
- *Goal Team Lead Backups* will serve a 2 year term and then assume the Team Lead Role for an additional 2 year term before rotating off. This rotation schedule will allow for strong continuity of operations while setting a reasonable duration for serving in this leadership capacity. New Goal Team Lead Backups will be identified by the current Team Lead and Goal Team Lead Backup, who will nominate an individual.
- *Goal Area Team Members (GATM)* will serve a 1 year term and can be renewed annually with the recommendation from the Team Lead. The Team Lead and Team Lead Backup in consultation with the FBMT will invite Goal Team Members annually. The National Plant Board representatives serving as Goal Team Members will be appointed by the NPB Board of Directors (BOD) in consultation with the FBMT, and approved by the FBMT. Annually, the NPB BOD will evaluate NPB participation and will make recommendations for rotating members on and off. Tribal members serving as Goal Team Members will be nominated by the APHIS Tribal Liaison or be selected after self-nominating with the approval of the APHIS Tribal Liaison and confirmed by the

FBMT. The Specialty Crop Farm Bill Alliance will representatives serving as Goal Team Members will be appointed by the SCFBA Section 10007 working group in consultation with the FBMT, and approved by the FBMT. Annually, the SCFBA will evaluate SCFBA participation and will make recommendations for rotating members on and off.

- *The State Plant Health Directors* serving as Goal Team Members will be nominated by the Goal Team Lead, FBMT, PPQ leadership, or be selected after self-nominating with supervisory approval and confirmed by the FBMT.
- *SME Reviewers* – NOM, NPM, S&T Scientists and anyone in PPQ with the expertise needed, representatives from other Federal Agencies (FS, ARS), and other experts who may be members of academia or industry will be called upon as needed.
- Term years run a complete Spending Plan cycle from the beginning of the Open Period through the Review Period and until the next Open Period. January 1 through December 31. The term schedule will be maintained by the FBMT.
- If a member is unable to complete their term, a replacement will be selected following the selection procedures above.
- FBMT will notify the NPM, NOM, STM, Goal Team Leader, Regional Plant Board President, Tribal and other serving members by November 1st of the expiration of a member's term.

Farm Bill Program Meetings – The FBMT and various team members will meet face to face semi-annually.

Annual Schedule of Events

The FBMT is striving to establish a set schedule describing an annual timeline of events and key milestones. To meet this goal the FY15 program was announced months earlier than prior years. Looking to FY16 and beyond we hope to further this trend and establish an annual timeline more closely aligned with other PPQ domestic programs like CAPS, where the benefits to cooperators and FB team members and participants alike, would increase through better coordination and predictability of funding for high priority survey activities.

Appendix 2: Cooperative Agreements

All cooperative agreements are administered through PPQ's three (3) Core Functional Areas (CFAs) Policy Management, Science & Technology, and Field Operations, and are the means by which funds are provided to each cooperator. Once an approved spending plan is announced cooperators will be contacted by APHIS personnel who will provide additional guidance and coordination on submitting detailed work and financial plans. The use of a standardized templates for both detailed work and financial plans and periodic accomplishment reports for FB funded projects is required for 2015 agreements and can be found posted on the [Farm Bill page](#) of the [CAPS Resource and Collaboration site](#).

Note that a synopsis of all grants and agreements provided to a cooperator by the Federal government, including APHIS, are now posted on the Internet (www.USAspending.gov). This was a requirement of the Federal Funding Accountability and Transparency Act of 2006 (FFATA). Likewise, APHIS is required to report accomplishments via "performance measures" in FB. Cooperators will be provided guidance on the means to adhere to this level of transparency.

The overall annual process involved with implementation is lengthy. It includes publishing annual guidelines; a 4-6 week open period to receive suggestions; a robust review and evaluation process leading to an approved project list/spending plan, establishing cooperative agreements, conducting the proposed activities as outlined in the detailed work plans; analyzing the data collected; writing periodic/annual reports; and evaluating the accomplishments of program objectives.

The National Clean Plant Network (NCPN) Goal Area Coordinator manages a 'Request for Applications (RFA)' process independent of the other Farm Bill goal areas process for seeking funding suggestions. NCPN issues it's RFA annually through 'Grants.gov' a Federally sponsored grants and agreements website designed to advertise the availability of Federal funding opportunities and to facilitate the application process, including Federal financial assistance application forms and proposal submissions.

The NCPN RFA is issued in Grants.gov and communicated by other means through the network simultaneously to the process used by other Goal Areas of Farm Bill 2014, Section 10007.

Appendix 3: APHIS PPQ Policies

Infrastructure Policy

- Funding is not be used for purchasing vehicles; however, lease and vehicle fuel and routine maintenance is allowed.
- Sec 10007 funding is not be used for any new construction.
- Sec 10007 funds are not to be used to support APHIS PPQ permanent positions; however, seasonal and/or temporary employee salaries can be charged.
- Overtime expenses for permanent employees are acceptable under certain emergency response situations.

Cooperative Agreement Policy

- Section 10007 restricts indirect costs to a maximum of 15 percent of the total Federal funds provided under the cooperative agreement, or, at an indirect cost rate applicable to the recipient as otherwise established by law.
- APHIS has consistently applied a 10 percent cap to non-profit organizations for the Farm Bill Plant Pest and Disease Management and Disaster Prevention Programs and will continue to do so for Section 10007.
- Those submitting suggestions must have prior concurrence from all other cooperators who are listed that would participate in activities if funded.
- Indicate group suggestions. A group suggestion lists cooperators who would work under separate budgets that would require a separate cooperative agreement with APHIS. The separate budgets will be included with the suggestion submission.

Outreach Materials Policy

A cooperator who received funding for a project that includes the production, purchase or distribution of materials is not obligated to put the USDA logo on the materials they produce or purchase under a cooperative agreement. However, APHIS has the option of reviewing all materials to be produced or purchased and request that the USDA name and logo appear on those items if we determine it is in our collective best interest.

Furthermore, there is a White House policy that discourages federal agencies from purchasing giveaways. This does not necessarily apply to our cooperators but we advise them to be aware of the limitations indicated in that policy. They should make their purchases in a manner that upholds the spirit of that policy. Specifically:

- The item is the most cost effective way to carry out the agency's function/mission.
- The item(s) will not be used as gifts and souvenirs.
- The items shall be imprinted with the organization name/logo and contact information (e.g., phone number, email address).

Appendix 4: References

Authorizing Legislation

Agricultural Act of 2014, Section 10007

Sec. 10007. Consolidation of plant pest and disease management and disaster prevention programs.

Full bill found here: <http://www.gpo.gov/fdsys/pkg/PLAW-113publ79/html/PLAW-113publ79.htm>

The Food, Conservation and Energy Act of 2008,

Sec. 10201. Plant pest and disease management and disaster prevention.
Sec. 10202. National Clean Plant Network.

Full bill found here: <http://www.gpo.gov/fdsys/pkg/PLAW-110publ234/html/PLAW-110publ234.htm>

Agricultural Marketing Service List of Specialty Crops

<http://www.ams.usda.gov/AMSV1.0/scbgpdefinitions>

APHIS Farm Bill Plant Pest and Disease Management and Disaster Prevention Programs Web Site

www.aphis.usda.gov/farbill

Cooperative Agricultural Pest Survey Resource and Collaboration Site

<https://caps.ceris.purdue.edu/farbill/2014>