

**National Center for Plant Biosecurity
Where Do We Stand In Spring 2006?
(An Addendum to the National Center Proposal of March 2005)**

**American Phytopathological Society
American Society of Agronomy
Crop Science Society of America
Entomological Society of America
Society of Nematologists
Soil Science Society of America
Council for Agricultural Science and Technology (CAST)**

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In the past four years, many Federal agencies have reexamined their roles and priorities related to the Nation's vulnerability to, and preparedness for, an assault with criminal intent on our agricultural and natural resources. Securing our crop production systems, forests, and rangelands requires a multi-faceted, multi-agency, and highly coordinated effort. Many initiatives on the part of Federal agencies, academic institutions, and the private sector have significantly improved our understanding of these issues and our ability to address them. The APS applauds and supports recent initiatives within USDA such as the establishment of the National Plant Diagnostic Network, the response to Homeland Security Presidential Directive 9 to develop a National Plant Recovery System, the appointment of a USDA Office of Homeland Security, and the recent and proposed improvements in the APHIS pathogen permitting system.

Strategic planning and long-term, visionary coordination are essential to maximize efficiency and effectiveness in our national plant biosecurity system. Within the current USDA infrastructure, specific responsibilities are assigned to each agency: regulatory issues to APHIS, agricultural research to ARS, and research, extension, and educational issues at colleges and universities to CSREES. Each agency's strategic planning is, by necessity, focused on its own individual responsibilities. Because APHIS is responsible for managing regulatory activities related to pathogen introductions, it is obliged to direct most of its intellectual and financial resources to immediate emergency management. This traditional agency organization, while supportive of each group's function, is not designed for integrated strategic planning and system-wide coordination, nor does it provide a forum for the focused future-thinking necessary to achieve plant biosecurity in the U.S. in the broadest sense. It is unlikely that any regulatory agency working alone would be able to gain the trust and confidence necessary to engage industry and other regulated stakeholders in the frank, confidential discussions that are necessary for developing well thought out strategic plans. It is also unrealistic to expect that ARS or CSREES would be able to set aside their own missions and take on a new, strategic role.

Four key components of an effective approach to mitigate acts of crop terrorism and maintain safe and productive crop systems are **anticipation** of potential threats, **prevention** of a bioterrorist attack, **preparedness** to respond to an attack, and **strategic planning and coordination** of these strategies. Although many aspects of these requirements are currently and capably being addressed by the USDA, its agencies have focused primarily on non-intentional plant disease events and the real or perceived impact on commerce. New demands related to the threat of intentional events have placed significant strains on their existing infrastructure and human and financial resources.

We need a new paradigm to achieve coordination of these functions. This must include, among other things:

- A new structure in which to develop new concepts using a multi-agency approach;
- Consideration of new issues and development of new strategies;

- Extension of planning to include microbial threats that are currently unknown, or that might be intentionally altered;
- Development of trust and a spirit of cooperation among all relevant agencies and stakeholders that will be facilitated by an overarching leadership that is above existing agencies; and
- A new era of partnerships among government, industry, and academia.

To receive appropriate attention, resources, and coordination among USDA agencies, appropriate colleges and universities, and the private sector, strategic anticipation must be the primary responsibility and focus of a specific group of individuals that includes both scientists and policy experts and sit at the highest level of the USDA. This focus would be a major responsibility of the staff of the National Center for Plant Biosecurity (NCPB). For reasons discussed below, we remain convinced that USDA's NCPB should operate as an overarching entity at the highest level of USDA, but in collaboration with existing agencies of USDA, and report directly to the Secretary of Agriculture.

As we move into 2006, what elements of a strong plant biosecurity initiative are still lacking that would be addressed by the NCPB?

1. Strategic analysis and planning related to plant resource security (the “Big Picture”).

The foundations of plant security include not only the identification of potential threats to natural and agricultural plant systems, but also the recovery capacity of those systems after the introduction and establishment of high consequence pests and pathogens. By necessity, most of our efforts revolve around putting out fires – dealing with the latest and greatest crisis. The NCPB would move beyond fire-fighting to ensure that the system has the educational programs necessary for training the “firefighters”, the research necessary to ensure rapid recovery with minimum impact, and the coordination of response functions that would include industry, government, academia, and the public. Biosecurity is a state of preparedness, not for specific threats but for all threats. It must encompass the development of resilient plant systems that can weather these significant challenges.

New pests and pathogens are encountered frequently and pests and pathogens naturally adapt to new niches. Predicting which exotic or endemic pests or pathogens pose the greatest risk and preparing for their arrival or intentional deployment are not trivial tasks. Historical analyses of the last one hundred years indicate that our predictive ability for which pests and pathogens will become established and the severity of impact after introduction is very limited. It is appropriate for existing agencies and institutions to focus on specific threats or specific aspects of managing introductions. Currently missing is a coordinated effort to identify the commonalities among all introductions and response strategies being employed by all relevant agencies within the government and external parties. The NCPB would ensure that such commonalities are explored to identify fundamental principles that transcend all outbreaks. This will allow for the development of sustainable and resilient plant systems and ensure synergy among research and education programs.

2. Prioritization of research needs and coordination of research activity.

Institutional insularity may preclude optimal coordination and interaction. This is true in public and private organizations, in governmental agencies, and in academic institutions. The NCPB would facilitate communication among all partners and contributors to plant biosecurity research programs. This communication would involve clarification of research roles and enhanced synergy among USDA agencies, as well as between federal and private entities. It also would minimize unnecessary competition and promote cooperation. Most specifically, by operating at the highest level of the USDA and with staff who are intimately aware of the research programs of each of the relevant agencies within the department, the NCPB would be able to develop a strategic research priority list without regard to which agency would receive the funding. In this respect, the focus on the development of priority research needs would be focused on the real needs and not organizational funding needs.

3. Identity as the initial entrée, or point source, for outside entities. Representatives from major agricultural companies, commodity groups and scientific societies, and university researchers and administrators, have indicated confusion over whom to contact if they need assistance or information, wish to be heard on a biosecurity-related need, or have information or insights to offer. The NCPB would be a nexus of communication, assuring that the flow of information is rapid, multidirectional, and appropriate in nature.

Scientists from all sectors (industry and academia) have indicated concern about approaching USDA APHIS for information about new regulations (including changes in permitting), fearing repercussions for lack of compliance; thus, a credible neutral source of information is needed to assist everyone in achieving compliance.

4. Clarification of agency roles in disease and pest anticipation and response.

Multiple recent events have demonstrated some uncertainty about which agency is responsible for what actions; thus, the present situation could result in unnecessary gaps in our prevention and preparedness strategies.

As an example, the arrival of the highly anticipated soybean rust in the U.S. was preceded by a number of training exercises, surveillance activities, and scenario testing that involved several federal agencies. Soybean rust had even been chosen by the new Department of Homeland Security's Office of Science and Technology for "scenario-testing" because of its inclusion on the APHIS Threat Agent List and its potential high-impact. However, another major exotic plant disease, sudden oak death, had been (and still is) an issue of great concern for USDA in the year prior to the soybean rust introduction. As a consequence of these two overlapping emergencies, training for soybean rust was delayed and APHIS resources were already strained when, in the fall of 2004, the rust pathogen arrived. If the NCPB had been operating fully, it could have coordinated the activities of the various agencies within the USDA and with other agencies. This could have reduced the strain on scarce APHIS resources so that when soybean rust arrived, sufficient resources could have been directed to dealing with the issues surrounding its arrival.

Continuing with the soybean rust example, the initial disease report in Louisiana triggered an immediate response by APHIS. The listing of *Phakopsora pachyrhizi* on the APHIS Threat Agent List required PPQ personnel to follow specific, resource-intensive steps related to confirmation, immediate action, and to follow-up surveys and surveillance. However, within six months, because the fungus was deemed to be established in the U.S., it was removed from the Threat Agent List to facilitate much-needed research and to reduce the resource drain associated with managing threat agents. Therefore, although APHIS had been engaged in prediction, detection, confirmation, and communication regarding soybean rust in 2005, the delisting of this fungus absolved APHIS of its specific responsibility for the pathogen. Soybean growers and others wonder who is responsible now for soybean rust. Which agency is responsible for developing the long-term strategic plans for this disease? The seriousness of this question was magnified by the reaction of the Department of Homeland Security (DHS), which reacted to the delisting in two significant ways. First, when soybean rust was delisted, DHS felt its mission no longer included this pathogen. More broadly and importantly, DHS officials expressed that if the USDA policy was to delist plant pathogens after their arrival in the U.S. then the mission of DHS probably would not include plant pathogens.

It remains critical, then, to define clearly the responsibility of each of the agencies related to plant pathogens and pests.

5. Support and assurance of connectedness of major plant security initiatives.

Clearly defined responsibilities and coordinated actions are needed specifically in cases where coordination and communication are crucial to achieve the most cost-effective, efficient strategies. This is the case especially among agencies and entities that are not administered under a single umbrella, such as between APHIS and ARS or APHIS, ARS, & DHS. The NCPB

would be charged to ensure that the necessary linkages are made among all relevant parties. These activities would include, among other things:

- Ensuring that the NPDN works closely with APHIS, state departments of agriculture, land-grant universities, and industry. Connections to industry, which are essential to national awareness of emerging threats and responses to those threats, require a connection point that would be viewed by industry as non-threatening (i.e., by an entity that is not a “regulator”). The NPDN’s current association with APHIS is very valuable, but due to APHIS’s regulatory role, the association may affect the NPDN’s ability to work effectively and directly with industry.
- Ensuring that the National Plant Recovery Program is supported and linked with all appropriate agencies to ensure that the breadth of activities necessary for preparedness (e.g. detection technology), effective response (e.g. fungicide/pesticide registration), and recovery (e.g., media and materials) are available or under development.
- Developing appropriate linkages between the various Centers of Excellence and other university plant biosecurity initiatives with all relevant federal agencies and the private sector.
- Ensuring coordination among all federal agencies related to the regulation of research, pathogen/pest permitting, and other regulatory activities. This would include coordination in the development of threat lists and pathogen- and pest-handling regulations. For example, current APHIS threat lists do not match those of the Department of Commerce or the Environmental Protection Agency and such discrepancies lead to confusion and, as a result, potential non-compliance.

6. A clear and focused communication conduit between industry and government.

Industry representatives currently express uncertainty with respect to “where to go” to provide or to obtain critical information and to be sure that their input reaches the appropriate targets. Industry has important information, on a global scale, related to plant disease incidence and location, and about the locations of susceptible and resistant germplasm. They would like to be more connected; for example to be included in national working groups and panels. They do have concerns related to privacy and intellectual property (where the information is going, who will use it, and whether it might be used to their detriment). The NCPB could facilitate industry involvement because it is not the “regulator” of industry and it could work with other agencies that have designed programs to guarantee that confidential business information remains secure.

7. Attention to the use of pests and plant pathogens as trade barriers.

Efforts are already being made by both APHIS and industry to address issues related to the use of plant pathogen and pest regulation as a rationale for international trade barriers. The NCPB would provide a mechanism to achieve a proper balance between protecting trade and achieving biosecurity. We cannot let our concern for potential impact preclude our ability to develop preparedness. We need a process to facilitate research and education without compromising security and trade. An entity, such as the NCPB, that sits at the highest level at the USDA would be best positioned to assess these issues and recommend an appropriate course of action that balances the needs of trade with the needs for plant biosecurity.

8. Accountability.

Despite the significant progress that has been made over the past few years, there remains a need for a mechanism for objective, independent assessment of progress toward program goals. While self assessment within any agency or institution can be helpful, an outside, objective, nonbiased review of the overall system and the activities of each component of that system will enhance credibility at each level by corroborating progress toward program goals and providing a mechanism for independent input into the establishment of new goals. This becomes important, particularly, when petitioning for support and in communicating to stakeholders and customers the value of the programs undertaken. A basic principle of quality assurance and quality control is that assessment should be administered from outside of the entity being monitored. The NCPB would be a logical entity to oversee all of the accountability issues related to plant biosecurity.

9. Central voice.

Plant biosecurity needs one entity, such as the NCPB, within the government that is charged with having an awareness and understanding of plant biosecurity and all of its needs for resources. In this regard, the NCPB would be able to answer or obtain the answer to all questions related to plant biosecurity issues that may be posed by the Congress, the White House, and the public. The NCPB, as the central voice for all plant biosecurity issues, would be able to make recommendations as to the appropriate needs for plant-related issues in major national biosecurity programs. Additionally, the NCPB, by developing visionary strategic plans, would be able to make objective recommendations for plant related priority research and educational funding needs. As an independent unit, the NCPB would be able to provide these recommendations in a more objective, science-based manner than any particular entity that is in need of additional funding.

Conclusion

Considerable effort and financial resources have been directed, over the past several years, into initiatives related to securing our Nation's crops and plant resources from deliberate introduction of pathogens or pests. Existing and newly formed federal agencies alike have taken on responsibilities related to three of the four key components of an effective biosecurity strategy: **anticipation** of potential threats, **prevention** of a bioterrorist attack, and **preparedness** to respond to an attack. **Strategic planning and coordination** of these strategies, which together comprise the fourth critical area, occur to some extent within each of these agencies but currently lack the overarching leadership and vision that will be essential for maximum effectiveness. The National Center for Plant Biosecurity would serve in this essential capacity. Thus, we believe strongly that the NCPB should be established within the USDA.