



National Center for Crop Biosecurity

A Proposal
The American Phytopathological Society
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The **American Phytopathological Society** (APS) includes among its 5000 members the scientific leadership and expertise, not only of the U.S. but also international, for protection of agriculture against crop diseases regardless of the source or means of introduction of the threat agent. Since September 11, 2001, APS has been providing leadership within the scientific community as well as helping to provide information to the U.S. government on areas of vulnerability and needs for assurance of crop biosecurity in the face of the potential for a bioterrorist attack

In a white paper published the fall of 2001, APS made specific proposals for government investments in infrastructure as critical to reducing a highly vulnerable U.S. agriculture to crop bioterrorism. Each of these proposals would, if implemented, strengthen the U.S. capacity and ability to more quickly detect, respond to and recover from crop bioterrorism. For example, APS recommended that the USDA invest in a distributed system of diagnostic labs as first responders to a bioterrorist threat. APS is supportive of the decision of Agriculture Secretary Anne Venneman to release funds for the establishment of five regional diagnostic labs (Northeast; Southern; Great Lakes; Great Plains; Western) for plant pests, now known as the National Plant Diagnostics Network (NPDN). APS also supports the decision that the funds for this network of plant diagnostic labs be administered through the Cooperative State Research, Extension, and Education Service (CSREES) in cooperation with the land grant universities.

APS also proposed in 2001 that the United States establish a national center for crop biosecurity, to provide the kind of services and national leadership currently provided for human diseases by the HHS Centers for Disease Control and Prevention. Such a center is needed both for national leadership and to complement and help coordinate the developing USDA-funded NPDN. Moreover, while justified in the face of U.S. vulnerability to bioterrorism, like the CDC in Atlanta, this center would provide leadership of a 21st century national infrastructure for documenting, monitoring, and protecting American agriculture against new or emerging plant diseases and pests regardless of whether the threat is the result of bioterrorism or one of the naturally occurring, emerging, or reemerging plant diseases or pests that farmers and scientists must respond to each year.

Leadership responsibilities for a National Center for Crop Biosecurity (NCCB)

Areas of leadership responsibility envisioned for this proposed NCCB are listed below.

- Establish a real-time database on new and emerging plant diseases and pests, including naturally occurring migrations, accidental introductions, and new or emerging biothreats to crops in response to changes in agriculture, primarily as background or baseline information on crop biosecurity. A survey of departments of plant pathology about 5 years ago revealed an estimated 100 new and emerging plant diseases in the United States at that time. There is still no current and single source of this kind of information.
- Establish “gold standards” for diagnostic tests and tools for plant diseases for use by the NPDN, and, where needed, develop and provide training for use of new plant disease diagnostic tests and tools.
- Establish and maintain a database on culture collections of plant pathogens held by investigators within and outside the United States, to assure the protection of these culture collections, including for reference purposes, and to provide taxonomic information on the global diversity of plant pathogens.
- Establish and maintain a database of national and international expertise and their laboratories available as a resource in the event of a bioterrorist attack with a known or unknown pathogen.
- Develop priorities and coordinate support for research needs related to crop biosecurity.
- Develop and coordinate the use of educational materials for training of potential first-line responders.
- Complement and help coordinate functions of the NPDN, including, provide the same functions of a NPDN, as appropriate, such as in response to needs of multinational seed and other agribusinesses and international agricultural research centers with no natural link to any one of the five NPDN regional centers.
- Provide and coordinate public relations in cases of national emergencies concerning crop biosecurity.

Infrastructure Considerations

Staffing of the proposed NCCB would need to include, in addition to a Center Director, scientists with the latest training in molecular diagnostics and genomics as well as in pathogen and pest biology. Scientists would also be needed with training in computer sciences and bioinformatics, because of the responsibilities of the Center in database development and management. Some staffing of the Center could be accomplished with appointments of university faculty as collaborators or fellows, thereby making the Center partly “without walls”.

Deciding on the administrative "home" of the proposed NCCB will be an important step in determining how the NCCB will relate to existing and soon-to-be-developed agencies and entities. Ideally, the proposed NCCB would be located in the Washington D.C. area, possibly linked with facilities already located at Fort Detrick. In addition to physical location with facilities at Fort Detrick, the Center would need computer/internet linkages with the USDA NPDN laboratories and the National Agriculture Pest Information System at Purdue University.