The National Plant Diagnostic Network

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Since its inception in 2002, the National Plant Diagnostic Network (NPDN) has become an important program in U.S. efforts to protect crop agriculture from invasive or introduced pests. The Agricultural Bioterrorism Protection Act of 2002 directed the USDA to develop a network of diagnostic facilities to help address the threat posed by high consequence plant pests and diseases. The NPDN operates with support from the USDA-NIFA (National Institute for Food and Agriculture) and through the collective efforts of many individuals representing land grant universities, federal agencies, state departments of agriculture, and other stakeholders. It links all these agencies into a cohesive network designed to quickly detect and diagnose plant pests and diseases and disseminate information concerning plant pathogens, insects, and invasive weeds. The specific purpose of the NPDN is to provide a nationwide network of public agricultural institutions with a distributed system to quickly detect pests and pathogens that have been introduced into agricultural and natural ecosystems, identify them, and immediately report them to appropriate responders and decision makers. To accomplish this mission, the NPDN has invested in plant diagnostic laboratory infrastructure and training, developed an extensive network of first detectors through education and outreach, and enhanced communication among agencies and stakeholders responsible for responding to and mitigating new outbreaks. NPDN allows land grant university diagnosticians, state and federal regulatory personnel, and first detectors to efficiently communicate information, images, and detection methods in a timely manner. The NPDN has grown into an internationally respected consortium of plant diagnostic laboratories.

The NPDN does not implement quarantines or other response actions, and thus has no formal regulatory authority. The NPDN helps guide response and mitigation efforts by providing rapid and accurate diagnoses, and the most up-to-date scientific information concerning outbreaks of biological pests. Regulatory actions are coordinated by state departments of agriculture and the federal Animal and Plant Health Inspection Service (APHIS). Additionally, pest control recommendations or programs are generally implemented through regional Integrated Pest Management (IPM) Centers, state IPM coordinators, or Cooperative Extension.

Dr. Richard Brown demonstrates dissection at an NPDN Adult Lepidoptera ID Workshop at UC Davis, March 2009.

The NPDN is divided into five regions, each with a lead university that coordinates regional activities. Regional centers are located at Cornell University (Northeast region, NEPDN), Michigan State University (North Central region, NCPDN), Kansas State University (Great Plains region, GPDN), University of Florida at Gainesville (Southern region, SPDN), and University of California at Davis (Western region, WPDN). Regional centers ensure all participating land grant university and state diagnostic laboratories are alerted to possible outbreaks and/or introductions and are technologically equipped to rapidly detect and identify pests and pathogens. The Center for Environmental Regulatory Information Systems (CERIS) at Purdue University serves as the central repository for archiving diagnostic data collected from each region.

Our First Detector training and education programs have trained over 9,000 first detectors nationally, with over 3,900 registered in the western region (WPDN). Our expanded awareness programs have reached several thousand more. Connection with this registry is maintained through regional and national newsletters (see *www.npdn.org* and *www.wpdn.org*), and listservs that can rapidly alert all or selected groups of first detectors and diagnosticians to a new outbreak. Recent initiatives include development of eight on-line first detector training modules and advanced entomology and plant pathology workshops for diagnosticians and specialists.

The NPDN Exercise program works with officials from federal, state and regional departments of agriculture to practice and perfect a chain of communication, of sample custody and the National Incident Management System (NIMS) in case of an actual occurrence. These exercise scenario programs provide valuable training opportunities for participants at every level. The exercises thoroughly test interagency communications to help find policy and procedural weaknesses within the national network as well as provide a training environment for first detectors. The NPDN has completed at least one exercise training in every state and territory. There have been several exercises with the border governors of the U.S. and Mexico.

Explore our website *www.npdn.org* to learn more about the NPDN and our programs.