Issues and Concerns of Invasive Species

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Public Sector Invasive Species Issue and Concern

An invasive plant pest cannot be detected in a timely manner if no one is looking for it. The first step in a proactive detection strategy is identification of potential invasive plant pests associated with high risk pathways into the U.S. Biological data can be collected and used in the development of tools, trapping protocols and effective traps and lures, which are necessary to look for the invasive plant pest. An excellent example of a proactive APHIS-PPQ program is the Pink Hibiscus Mealy bug in the Caribbean.

Reactive safeguarding efforts are related to emergency situations and eradication programs which are more costly. Historically, exclusion efforts have been reactive and focused on inspection at first point of entry. If a pest organism was found infesting a commodity on arrival, measures were taken to destroy the shipment, re-export or disinfest it. As the potential harm from invasive plant pests became better understood, more preventative exclusion measures were developed and evolved into the comprehensive plant safeguarding system that is in place today.

Some of the reactive program efforts and associated costs include: Asian Longhorned Beetle 6 years $79 million; Citrus Canker 7 years $258 million; Karnal Bunt 7 years $70 million; Plum Pox Virus 3 years $18 million. A recent example of a proactive effort was Mexican Fruit Fly Quarantine lasting 10 months (Infestation was discovered Nov. 18, 2002. A quarantine area of over 117 square miles was imposed Dec. 5, and later expanded to 130 sq miles. The

quarantine ended Sept. 23, 2003.) During the quarantine, host material was not allowed to leave the regulated area unless certified. If left untreated, the infestation would have threatened fruit crops worth more than $75 million annually. The cost of Mexican Fruit Fly Quarantine in FY03 was $10.6 million.

Public investment in pest detection and management in the United States has traditionally been under-funded and ill-equipped to overcome the economic impact from pests that threaten plant resources. A major concern exists in the area of resource allocation among the strategies and activities in the safeguarding continuum. The need to determine the appropriate level of investment in pest detection for effective and efficient use of resources for pest management is needed. Products of such research efforts should yield strategic priorities and the development of general rules both of which should evolve from the knowledge of needed follow-up activities. The level of investment needs to be compared to the benefit, and the allocation of the investment evaluated by such factors as commodity(s), geographic location, etc.

An effort to evaluate the appropriate level of investment for pest detection in its earliest phases would have several important advantages. These advantages include: shorter pest eradication programs, less expensive programs, more time to utilize strategies and tools for management, and greater probability of success. Some examples that appear to support this belief include plum pox virus, Asian long horned beetle, and spotted knapweed. These are all costly programs that might have benefited from early detection activities.

Existing efforts to provide early warning of plant pest threats include activities within PPQ including the New Pest Advisory Group (NPAG), and plant pest lists. NPAG evaluates plant pests occurring elsewhere in the world and determines the U.S. plant resources that may be vulnerable. PPQ also established several plant pest lists for various purposes and has supported

documentation from several national professional scientific societies and other sources. These lists include:

- Regulated Plant Pest List
- Offshore Pest Information System Target Pest List
- National Cooperative Agricultural Pest Survey Target Pest List
- Select Agent List
- Global Pest and Disease Database

A description of these various pest lists is provided at the following website:

http://www.aphis.usda.gov/ppq/pestlist

Annual Cooperative Agricultural Pest Detection Surveys

Every year PPQ and cooperators conduct the Cooperative Agricultural Pest Survey (CAPS) in each state to detect potentially threatening exotic pests. The CAPS is a plant pest program that is directed by the early detection facet of the safeguarding continuum. Because the number of potential plant pests is so great, annual selection of the limited list of the most important national CAPS target pests becomes very difficult.

Recently the CPHST convened a Working Group to design a robust, transparent process for prioritizing the most threatening pests. This group developed a list of criteria to be used in categorizing national pest threats. Then the group compiled the criteria into a 22 point questionnaire divided into three parts: (1) biological/epidemiological; (2) economics; and (3) agriculture inspection/quarantine.

The Working Group then enlisted subject matter experts to apply the questionnaire to a long list of highly significant pests. The experts, 60 scientists, economists, and operational staff

from government, academia, and beyond, volunteered their time and talent to ensure high quality results and provided over 2000 total answers.

Not all criteria are equally important. The CAPS National Committee met on December 5, immediately following the 2003 Annual CAPS Meeting in Las Vegas, to determine appropriate criteria weights. To do this, a contractor was hired and introduced the Analytical Hierarchy Process. The members used this mechanism to work through pair-wise comparisons for all criteria.

The questionnaire results were then combined for each pest along with the criteria weightings. The end result was an ordered ranking of all pests considered. The National CAPS Committee assessed the results and made necessary adjustments based upon operational considerations. A base has now been prepared and established by experts from the scientific disciplines, economics, and PPQ operations. This process will be used again next year and into the future.

Resources for Early Pest Detection

Any effort to address problems associated with invasive species requires resources to acquire the needed technology and provide for its efficient deployment. As with any public program, past performance is always considered for future increases in resources.

The issue of what management strategy to implement in the safeguarding management system is related to the biology of the pest and the value of the plant resources at risk and the costs of implementing the strategy. PPQ's current paradigm we now have is described below:

“While port of entry inspection must continue to play an important role in the exclusion of invasive plant pests, the historic view that this activity can function as the focal point for exclusion must be abandoned. A new risk based management strategy that requires

compliance and mitigation of pest risk at origin can reduce risk and enable expedited entry." (Safeguarding American Plant Resources - http://www.aphis.usda.gov/ppq/safeguarding/index.html)