

The U.S. phytosanitary system currently relies largely on inspection. When USDA APHIS becomes aware of a sufficient risk, it conducts a pest risk assessment of one or a few genera from a particular country.

Both approaches have significant weaknesses. Regarding inspection, APHIS, NAPPO, and IUFRO agree that current trade volumes overwhelm inspection capacity. The NAPPO Concept Paper notes that inspectors experience great difficulty in detecting pathogens, small pests, pests at low densities, pests living inside the plant, or if symptoms are masked by pesticides.

Pest risk analysis has several problems. First, it is resource intensive. APHIS has admitted that the agency has insufficient funds to complete risk assessments and amend regulations in a timely response to newly perceived threats.

Second, and more troubling, risk assessments are severely limited in identifying threats. As the NAPPO and IUFRO papers have pointed out, risk assessments based on lists of known quarantine pests do not address uncertainties arising from

- Organisms not known to science
- An organism's behavior in its native environment is a poor predictor of its behavior when introduced to a new environment
- Increased risk when the pest or pathogen hybridizes

An effective exclusion program must prevent introductions of pests that are unknown or insufficiently understood, and it must be implemented **quickly** to curb the current, unacceptable rate of introductions.

The NAPPO and IUFRO papers both noted the importance of preventing introductions of organisms that have not been thoroughly studied. The history of introductions supports the concern: at least six of the most damaging forest pathogens that entered the country on imported plants were unknown to science when they were introduced. These were *Cryphonectria parasitica*, *Phytophthora lateralis*, *Discula destructive*, *Phytophthora cinnamomi*, *Phytophthora ramorum*, and *Sirococcus clavigignenti-juglandacearum*.

International trade rules adopted under the auspices of the World Trade Organization (WTO) and the International Plant Protection Convention (IPPC) require that phytosanitary regulations be applied **only** to pests that have been evaluated by pest risk assessments. The only exception is provisional regulations. These risk assessments must evaluate risks with great specificity. Even “pathway” risk assessments must evaluate each pest using the pathway as to its specific likelihood of entry, establishment, or spread. These rules appear to impede effective exclusion policies by tying regulatory action to the time-consuming and scientifically limited risk assessment process.

There is widespread agreement on the structure of a long-term solution to the challenge of preventing introductions of organisms that are too poorly known to be evaluated in a risk assessment. That solution is to institutionalize clean stock or best management practices programs that will minimize the presence not just of quarantine pests (those identified through risk assessment) but also most insects, pathogens, and other potential pests that have not been evaluated. The IUFRO panel suggests that adoption by

Table 2. USDA APHIS chart showing changes in plant import conditions since the “Q-37” regulations were first adoptedd

Trading Partners	Europe	Worldwide
# of Items Allowed Import	Limited (< 100 items) germplasm of clonal material only	Unlimited
Fumigation	Mandatory on all imported stock	Only when quarantine pest found
Likely Purpose of Importation	Nursery propagation program “starter” material Slow distribution	Direct field/homeowner planting Immediate distribution

the IPPC parties of an international standard (modeled after the international standard on wood packaging) would allow clean stock programs to apply to the full range of pests, not just quarantine pests. As its rationale, the IUFRO panel notes that the living plant pathway has been the means by which many pests have been introduced—just as wood packaging has been. This parallel situation justifies a similar response: reliance on a pathway approach that departs from the usual blacklist approach.

This proposal has great promise—particularly because an IPPC expert group is already exploring whether to recommend an international standard for living plant movement. However, it is not certain that the IPPC parties will accept such a broad standard.

In any case, negotiating and implementing effective clean stock programs will require several years. We need stringent measures to curtail introductions **now** to protect our forests until IPPC parties can negotiate and implement a comprehensive program.

USDA APHIS has proposed the solution: placing plants suspected of carrying pests **temporarily** into a limbo category pending further evaluation and development of effective phytosanitary barriers. APHIS could do this quickly. Because plants are placed in limbo on an interim or “provisional” basis, APHIS would not be required to complete a pest risk analysis on each plant/origin combination before acting.

Unfortunately, APHIS intends to phase in the limbo category. Initially, only the few plant host/origin combinations that transport known quarantine pests would be included and even then only when the plants in question have not previously been imported into the U.S. Only after several years might APHIS expand the category to address pests whose existence is unknown or whose ecological role in their native and introduced ranges has not been adequately assessed.

The Nature Conservancy believes that APHIS should apply its conception of a limbo category more aggressively, given the recent rush of introductions. The Conservancy proposes that APHIS take the following steps:

(1) Publicly adopt a goal of providing a much higher level of protection. APHIS should state its intention of cutting the rate of introduction via this pathway to one-tenth of its apparent current level—from 10 species over 30 years to only 1.

(2) By the end of 2007, establish a strong NAPPPRA category and put into that category nearly all whole plants and cuttings. APHIS could allow imports of these plant taxa under any of the following conditions:

- plants imported in the form of tissue culture or seed
- plants imported into a secure containment facility and held for a sufficiently long period to ensure they are pest- and disease-free
- plants imported from a third-party certified clean stock program.

(3) Apply a transparent process to determine which taxa/type/origin combinations are sufficiently unlikely to transport pests that they can be removed safely from NAPPPRA.

(4) Focus its risk assessments on the most likely introductory pathways, which would be defined, such as bare-rooted plants from East Asia.

(5) APHIS and its stakeholders should work together to secure substantially more staff and funding to enable the agency to undertake risk analyses and amendments to its regulations in a timely manner.

Sources of further information:

APHIS Whitepaper (December 2005) http://www.aphis.usda.gov/import_export/plants/plant_imports/downloads/q37_whitepaper.pdf

(If the link doesn't work, try using your favorite search engine to search for “Addressing the Risks Associated with the Importation of Plants for Planting”)

NAPPO Plants for Planting Concept Paper--attached to RSPM 24 at <http://www.napppro.org/Standards/NEW/RSPMNo24-e.pdf>

IUFRO Working Party on Alien Pest Movement in International Trade

Accessible on www.forestresearch.gov.uk/iufroinvasives

The Nature Conservancy. An Ounce of Prevention: How to Stop Invasive Insects and Diseases from Destroying U.S. Forests, fcampbell@tnc.org