Risk-Based Sampling

Last Modified:



Every day in ports around the world, the fate of thousands of agricultural shipments is decided based on inspection. Countries rely on these inspections to protect their agriculture and natural resources against the introduction of invasive pests and disease.

Today, APHIS Plant Protection and Quarantine (PPQ), along with many other national plant protection organizations, is developing a data-driven strategy to maximize the

effectiveness of its port inspections. The goal of this strategy is to better target and prioritize inspection activities based on risk.

Risk-Based Sampling at Ports of Entry and Current Commodities

APHIS and U.S. Customs and Border Protection (CBP) work together to carry out Risk-Based Sampling at Ports of Entry (RBS POE). This program is a data-driven way to sample fresh fruits, vegetables, and other imported commodities for inspection at U.S. ports of entry. Commodities with demonstrably lower pest interceptions are eligible for reduced inspection rates, which means they can move more efficiently through ports and into consumer markets. This, in turn, provides an incentive for traders to avoid shipping infested or noncompliant commodities.

Selected commodities at major air, maritime, and land border ports nationwide are currently included in the program. We continue to add new pathways, commodities, and ports of entry. For the latest information, visit our program landing page at the link below and sign up for email updates.

Learn More About Risk-Based Sampling at Ports of Entry

Inspections of Plants, Seeds, and Other Propagative Materials

Most imported plant material intended for propagation such as live plants, plant cuttings, and seeds must transit through 1 of 16 APHIS plant inspection stations. In these facilities, PPQ uses a hypergeometric sampling method to calculate a statistically appropriate number of boxes to inspect from each incoming shipment. These calculations are based on the shipment's size, the number of sample units, and the number of plant taxa it contains. We are developing a risk-based sampling framework that will also take into account pest interception and action rates for incoming commodities. Risk-based sampling will allow us to systematically reduce inspections of low-risk shipments and proportionally increase inspections of higher-risk consignments based on evidence of risk.

Related Resources

Evaluating a Risk-Based Sampling Inspection Program

In this study, APHIS and CBP conducted a real-world evaluation of a risk-based sampling inspection program for Mexican produce imports. View our findings.

International Symposium for Risk-Based Sampling

View information and resources from the June 2017 symposium hosted by PPQ and the North American Plant Protection Organization (NAPPO).

Risk-Based Sampling Online Learning Tool

This training module helps interested NAPPO stakeholders further their understanding of risk-based sampling as a method to conduct agricultural inspections that are technically justified (defensible) to trading partners.

For More Information

APHIS Risk-Based Sampling Team

Contact us for more information about the development and use of risk-based sampling strategies at U.S. ports.

Barney Caton

Pest Exclusion Analysis Coordinator

Email: barney.p.caton@usda.gov

Darlene D. Judd

National Policy Manager—Risk-Based Sampling at Ports of Entry

Email: darlene.d.judd@usda.gov

Marla Cazier

Senior Regulatory Policy Specialist—Plants for Planting

Email: marla.j.cazier@usda.gov

Risk-Based Sampling Contacts
Print