

## **Risk analysis to safeguard agriculture and natural biological systems**

**Robert L Griffin**, *Plant Epidemiology and Risk Analysis Laboratory, USDA-APHIS, Plant Protection and Quarantine, Center for Plant Health Science and Technology*

The fundamentals of risk analysis are well-known and have a long history of practice in many disciplines; however the systematic application of risk analysis in agricultural and environmental health is relatively new and evolving as a public decision-making tool. Challenges exist at many levels, including in particular the need for policy makers and stakeholders to have confidence in the products resulting from diverse and sometimes complex methodologies often fraught with high levels of uncertainty and political pressure. The issue is complicated by conceptual inconsistencies across related scientific disciplines, jargon that is peculiar to certain sectors, and underdeveloped processes within methodologies. Harmonization efforts driven by international trade obligations have promoted some level of consistency and increased the rate of evolution for risk analysis in the disciplines of plant and animal health and food safety without bridging these to environmental applications. The result is a growing perception that the application of risk analysis to environmental health issues is somehow different. This problem is exacerbated by the fractured nature of national government organizations with responsibility for agricultural and environmental issues and frequently demonstrated by ineffective and conflicting regulatory programs. Some governments have formed cross-agency councils to encourage the harmonization of regulatory strategies, although the ambit of these mechanisms has not typically reached to risk analysis. A more focused strategy could be to centralize risk analysis functions, but examples of this in practice are lacking. Whatever the strategy, the national and international struggle for consistency must take account of the need for risk analysis to continue evolving and emphasize the importance of transparency, honesty, and communication for external understanding and acceptance.