

Crisis Calls, Science Responds

ARS is a problem-solving agency. Most of the time that means our scientists are in the laboratory and the field conducting basic and applied research that helps maintain, enhance, and diversify our agriculture.

But sometimes the problem to be solved is an international predicament or crisis that requires immediate attention, and ARS scientists are called away from their usual research duties.

Why involve ARS scientists in an international crisis?

One reason is that ARS is home to renowned experts on certain agronomic diseases and pests. These experts are part of the excellence in scientific research for which ARS is known around the world.

ARS is also home to important national collections of fungi, nematodes, and insects from all over the world that, in many instances, represent unique resources to deal with international problems.

In addition, an essential part of ARS's mission is to provide scientific research to support regulatory agencies, such as USDA's Animal and Plant Health Inspection Service (APHIS) and Food Safety and Inspection Service, the U.S. Environmental Protection Agency, and many others.

But while ARS often provides the scientific basis for regulation-making, the agency itself is neither a regulatory nor a policy-setting agency.

This separation of research and regulation/action inspires confidence that the scientific information ARS researchers provide is independent.

When you combine the high regard in which ARS expertise is held with this view of independent research, many are willing to accept ARS as an authoritative, objective voice.

This positive perception includes the international trading community as much as groups within the United States.

It is ARS's outstanding, objective scientific voice that allows APHIS and USDA's Foreign Agricultural Service to call on our experts when another country needs to be assured that U.S. agricultural commodities meet a particular phytosanitary standard to protect the importing nation's agriculture.

Often, the one called on to work with the foreign government is the ARS researcher who actually developed the definitive diagnostic test or treatment that sets the standard to ensure that a disease or pest will not be carried by a shipment of a U.S. commodity.

This expert may be called on to visit the country that is concerned about a U.S. export, such as when an ARS mycologist went to Algeria to investigate a potential fungus infection in a wheat shipment. Other times, the ARS researcher may host a team from another country that needs to check out a test or technique, as an ARS zoologist did for a Brazilian team concerned

about wheat seed gall nematode. Both of these missions are detailed in the story beginning on page 4 of this issue.

In these cases and many others, by providing scientific information that another country is willing to accept, ARS scientists have been able to help preserve a U.S. export market, often worth hundreds of millions of dollars every year.

But objective science is not the only reason an ARS scientist may be asked to calm the troubled waters of an international crisis.

ARS researchers also reach out to other countries to help with major global agricultural issues. When Great Britain suffered its terrible outbreak of foot-and-mouth disease in 2001, ARS sent a team to provide assistance. And ARS specialists are currently helping other countries extend their programs to detect and deal with avian influenza.

ARS doesn't wait for international crises before offering assistance. It also steps up to emerging problems that are still outside the United States.

After Ug99, the most virulent new wheat stem rust in 50 years, was found in Africa, ARS began working with the Kenyan Agricultural Research Institute and the International Maize and Wheat Improvement Center—known as "CIMMYT"—to find resistance in U.S. wheat varieties and germplasm. The stem rust threatens wheat worldwide, including cultivars currently grown in developing countries. ARS screened more than 800 U.S. wheat cultivars and genetic resources in Kenya and is sharing the results with researchers in East Africa.

The assistance offered to Kenya certainly may help avoid devastation of their wheat crop and was done first in the spirit of altruism. But the research also offers basic information that ARS may need someday, should Ug99 ever appear in the United States.

Good science meets the challenge of a crisis, but better science prevents crises. ARS works with action agencies and international research partners to prevent agricultural problems from reaching the crisis level.

Caird E. Rexroad, Jr.

ARS Associate Administrator
Beltsville, Maryland