Research required urgently to control planthopper pests

June 23 2008

June 23-25 conference to address major threat to Asian rice production
A small insect that has devastated millions of hectares of rice in southern China and Vietnam over the past few years—causing the loss of thousands of tons of the grain at a crucial time for global production—is the focus of a critical and timely conference this week in the Philippines.

Problems caused by planthoppers, a major type of rice pest that can destroy one-fifth of a harvest, have intensified across Asia in recent years. Major outbreaks in Vietnam in 2007 contributed to recent dramatic rises in the cost of rice, which have threatened to push millions of people deeper into poverty. If not effectively controlled, these pests could hamper rice production and help keep prices high.

Sustained increases in productivity are needed to ensure affordable, plentiful rice for the 3 billion people who depend on it. However, a steady dwindling of funding for public rice research over the past 15 years has stifled research to develop sustainable management practices that help farmers control pests.

A report on the front page of the 18 May New York Times revealed that scientists at the International Rice Research Institute (IRRI) have the know-how to develop rice that can withstand several strains of the devastating pest and integrate resistant varieties with ecological control methods. But, with resources drying up, the research efforts are on hold.

Planthoppers are normally kept in check by naturally occurring biological phenomena, such as other animals that prey on the pest. In the 1970s and 1980s, planthoppers threatened rice intensification programs in Indonesia, Thailand, India, the Solomon Islands, and the Philippines.

IRRI organized the first brown planthopper (BPH) international conference in 1977, bringing together scientists from all rice-producing countries. Activities triggered by this meeting—including integrated pest management (IPM), reducing unnecessary insecticide use, and breeding BPH-resistant rice varieties—helped keep BPH under control for the next 20 years. However, in the last 5 years, planthopper problems have worsened in several countries, including China, Korea, Japan, and Vietnam. Increasing insecticide resistance is also a concern.

"One of the key problems is overuse of pesticide," said IRRI entomologist and conference organizer K.L. Heong. "As well as destroying the natural predators of planthopper, this also allows the pests to become resistant to pesticides."

Since the first BPH conference, genetics, ecology, and pest management have advanced considerably. Planthoppers are now known to be secondary pests induced by ecological disturbances such as pesticide overuse. To ensure sustainable rice production, research must be directed toward not only pest-resistant rice varieties but also healthy rice-farming ecosystems that provide the natural biological services that control planthoppers.

In the last 30 years, scientific advances have coincided with the development of ecosystem-services frameworks and lessons from breeding resistance, understanding farmer decisions, implementing IPM, and improving communication campaigns. The new knowledge can allow novel approaches and research for more sustainable management. The conference at IRRI, which will bring together leading regional

experts—including representatives from the United Nations Food and Agriculture Organization, the Association of Southeast Asian Nations, Australia, China, Japan, India, and Bangladesh—and policymakers, will be an important starting point.

Source: International Rice Research Institute