Mali
Integrated Pest Management Innovation Lab country profile

Population: 16 M
GDP per capita: $1,100
Feed the Future country? Yes
Involvement in this country since: 1998

Challenges:
- Diseases and insect pests of many crop plants.
- Lack of availability of new technologies for agriculture
- Misuse of pesticides
- Barriers to women’s participation
- Lack of trained professionals in IPM and related fields

Related project name: Development of IPM Packages for Key Vegetable Crops in West Africa

Project overview: IPM Innovation Lab work in Mali is dedicated to ecologically-based IPM research on selected horticultural crops. It is part of a research project working to improve food security in West Africa by focusing on “packages” of integrated pest management techniques optimized for a given crop.

Accomplishments:
1. Disseminating pest management technologies: Researchers developed green bean and tomato IPM packages and transferred them to farmers. The tomato package has helped the production of this important cash crop recover from the devastating whitefly-transmitted geminiviruses. Packages have also been developed for cabbage and potato.
2. Identification of diseases: Together with the International Plant Virus Disease Network and using new technologies, key viral diseases of vegetable crops in Mali were identified.
3. Improved diagnostic capacities of scientists: Together with the International Plant Diagnostic Laboratory, new technologies for the detection and identification of pests and diseases were demonstrated and transferred to local scientists.
4. Pesticide safety training and residue analysis capacities developed and implemented in Mali: Pesticide safety training classes and information were developed, as well as technologies for pesticide residue testing.
5. Enhancing women’s participation in IPM: When researchers observed that men were the only participants in farmer field schools, they established a program in which men and women could participate in equal numbers.
Developing IPM packages to allow farmers to increase yield and reduce use of pesticides

An IPM program for the production of green beans was developed and transferred to growers; it resulted in substantial reduction in pesticide use, and has helped in the development of this important export vegetable crop. A tomato IPM package was developed that involved planting resistant hybrids and open-pollinated varieties. Together with the implementation of a host-free period and a sanitation program, this package allowed the recovery of tomato production in areas where whitefly-transmitted geminiviruses had completely eliminated crop production. This allowed for recovery of the tomato industry in Baguineda and other locales.

New technologies were introduced and applied to identify diseases and pests in Mali. This was accomplished through workshops and projects with host country scientists. In collaboration with the International Plant Virus Disease Network, the whitefly-transmitted geminiviruses were characterized, and vector-independent inoculation methods were developed for screening for resistance. Also, the aphid-transmitted Zucchini yellow mosaic virus and whitefly-transmitted Cucurbit yellow stunting disorder virus as well as the aphid-transmitted Cucumber mosaic virus and Tomato vein mottling virus of pepper were identified. Scientists also identified a viroid as the cause of an unknown wasting disease of tomato. These detection technologies have been transferred to local scientists. Nonetheless, there are still challenges in capacity building and having adequately trained scientists. IPM strategies to control the viruses were identified and passed on to farmers.

To address the misuse of pesticides, training modules, and flyers were created. The training sessions were presented in local villages and other locations, and then local trainees presented courses to others (the “train the trainer” model). Many of the courses emphasized the participation of women. Technology for pesticide residue testing was introduced and made available in Mali through the construction of a pesticide residue laboratory. This allows for enhanced capacity to export fruit and vegetables to the European market.

Relevant website

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Regions/provinces
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