




IAPPS NEWSLETTER

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SP-IPM RESEARCH BRIEF NO 4: BIOLOGICAL ALTERNATIVES TO HARMFUL CHEMICAL PESTICIDES

 The IPM Research Brief Series is part of the Systemwide Program on Integrated Pest Management (SP-IPM) strategy for promoting information exchange among stakeholders. Its purpose is to build public awareness and understanding of the benefits of integrated pest management (IPM) and to encourage the full integration of this approach into mainstream agriculture. The briefs are primarily intended for agricultural research managers, policy makers and the development partners with whom governments plan IPM inputs into agricultural and rural development activities. The briefs analyze the biological and ecological bases of IPM-related food security issues across different agroecosystems and regions. They also synthesize research results and advise on opportunities for scaling up the benefits achieved in pilot studies.

This brief addresses one of the fundamental issues in agriculture and development: the use of chemical pesticides. While the benefits to crop production are clear, the costs - to health and environment - are often hidden. In particular, the group of chemicals known as persistent organic pollutants (POPs), which includes pesticides such as DDT, have unacceptable negative impacts.

Many biological alternatives exist and can be useful to farmers within an integrated pest management approach. This brief provides an overview of biological alternatives and examines some examples of their current use. It also looks at ways to promote the availability of these options for farmers in developing countries.

This brief was prepared by the SP-IPM Secretariat in collaboration with Green Ink Publishing Services Ltd (UK). It is based on discussions and outputs from a workshop held by the United Nations Industrial Development Organization (UNIDO) and the SP-IPM in Benin in 2004, entitled 'The search for alternatives to banned/restricted POPs in Africa'. The brief expands the focus beyond Africa to developing countries generally. We would also like to acknowledge the help of scientists and development workers from the International Institute of Tropical Agriculture (IITA), Centro Internacional de Agricultura Tropical (CIAT), International Centre of Insect Physiology and Ecology (ICIPE), Pesticide Action Network UK (PAN-UK) and Valent BioSciences Corporation.

More information about this brief and the SP-IPM can be found on www.spipm.cgiar.org

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IPM CRSP REGIONAL INTEGRATED PEST MANAGEMENT RESEARCH AND EDUCATION FOR SOUTH ASIA

The USAID-funded Integrated Pest Management Collaborative Research Support Program (IPM CRSP), managed by Virginia Tech (USAID/EGAT/LRM- Leader with Associate Cooperative Agreement EPP-A-00-04-00016-00) has funded 13 sub-awards to researchers at eight U.S. universities. Projects are organized according to two schemes: (1) global theme projects that deal with worldwide pest management challenges and (2) regional IPM based on geographically delimited interventions. Except for the regional project, "**Regional Integrated Pest Management Research and Education for South Asia**" all projects have previously been described in detail in IAPPS Newsletter No. 1 (January 2006).

The South Asia regional project is managed by Dr. Ed Rajotte, Pennsylvania State University entomologist and state IPM Coordinator (egrajotte@psu.edu). This project not only builds on previous investment in Bangladesh, but expands efforts in Bangladesh and India, extends and replicates the participatory IPM approach in Nepal, strengthens the network of linkages in IPM knowledge and expertise across all of South Asia, and undertakes significant and innovative graduate education.

Participatory appraisals, baseline surveys, and crop pest monitoring will be conducted to help prioritize fruit and vegetable crops and pests. Research activities include pest and beneficial surveys in priority crops, laboratory,

greenhouse, and on-farm field experiments on pest management components, assessment of socioeconomic constraints to adoption of IPM,

Objectives and activities:

Regional network establishment: Expansion of the successful IPM CRSP collaborative model in South Asia by continuing the collaboration with Bangladesh, and expanding the relationship with Nepalese and Indian institutions, including scientists from IARCs, NARS and NGOs. Particular attention will be devoted to vegetable and fruit systems, identified from the stakeholders meetings, subject to confirmation during participatory appraisals, baseline surveys, and crop-pest monitoring. The program will advance IPM science; develop IPM technologies, information and systems; and will work to develop and integrate sustainable, resource-based local enterprises into domestic and international markets. To facilitate development of IPM systems, communication, education, and technology transfer within and across countries we will establish a regional network of IPM expertise. In addition to scientists in the principal geographic sites in Bangladesh, India and Nepal, the network will include expertise from National and International Agricultural Research Centers and universities. The network will facilitate development of IPM systems, communication, education, and technology transfer within and across countries.

Promote Regional and International Communication: A Web site initially maintained at Penn State University, and linked to the Virginia Tech IPM CRSP Web site, will provide an information center for regional IPM activities. Components of this web site will include results of participatory appraisals, trip reports, research reports, reproductions of technology transfer literature (fact sheets, manuals, radio drama mp3s, etc.), an 'ask the expert' section, a listing of IPM experts in each country, among other features.

Collaborate with Global Theme projects and Regional Centers: The objective is to develop, for synergistic purposes, collaboration with Global Themes including (1) impact assessment, (2) insect transmitted viruses, (3) regional diagnostic laboratories and (4) information technology and databases.

Develop baseline information: The participatory approach will be evident in all phases of the proposed project from establishing the priority of local pest problems through forming research and technology transfer teams with scientists, educators and NGO personnel to conducting on-farm research, to soliciting feedback from farmers and others about technology transfer methods. The approach includes a (1) mini- participatory appraisal, (2) benchmark survey and (3) a pest and beneficials survey.

IPM Technology development: The goal is to develop IPM packages for okra, eggplant and tomatoes. Research activities are, by nature, ecologically-based, realizing that a crop contains several interacting physical and biological elements. As research progresses from a component orientation through the development of IPM packages, ecological interactions and biodiversity impacts will be considered. All tactics from the simplest hand removal of insects through biotechnological applications will be considered for their economic, environmental and social value.

Training, education, and institutional capacity building: We will address institution building on several fronts. The first will be to assess the IPM research and technology transfer abilities present in a given country during our participatory appraisals. When shortcomings are found, we will plan to strengthen that area through short-term training, enhancement of local graduate education, online distance education courses targeted toward specific needs, graduate training in the United States, or a sandwich program that involves a combination of local and U.S. or regional training. We will also assess physical assets available for IPM research and budget for their improvement (as much as the budget allows).

Technology transfer: Technology transfer is approached in several ways. The first is using government-based technology transfer pathways including extension. Since our research plots are primarily in farmers' fields, the IPM researchers do some technology transfer in the communities where the research takes place. A second way is interacting with various non-governmental organizations that, in many cases, have substantial technology transfer efforts already in place. The technology transfer plan will be take advantage of technology transfer mechanisms already in place and take into consideration of a diverse array of approaches in order apply those most effective and efficient.

Monitoring and evaluation: The South Asia regional site will hold annual review and planning meetings in the region during which progress from the previous year will be reviewed and planning for the coming year completed. An annual report prepared for the region will be an accounting of progress toward several key indicators. The key indicators of impact are: (a) Wide-spread adoption of IPM technologies, (b) Reduced pest-induced losses, (c) Reduced pesticide use, (d) Changes in farmers' perceptions of pests and natural enemies, (e) Increased farm income and economic growth, (f) Increased exports of products produced with IPM with minimal pesticide residues, (g) IPM programs institutionalized, (h) Scientists and graduate students trained in the host countries and the U.S., (i) Regional collaborative network formed among U.S. and HC universities, IARCs, and other public and private institutions, (j) IPM

training programs or events completed for trainers and (k) Increases in exports from host countries of products produced with IPM.

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IAPPS Mission: to provide a global forum for the purpose of identifying, evaluating, integrating, and promoting plant protection concepts, technologies, and policies that are economically, environmentally, and socially acceptable.

It seeks to provide a global umbrella for the plant protection sciences to facilitate and promote the application of the Integrated Pest Management (IPM) approach to a the world's crop and forest ecosystems.

Membership Information: IAPPS has four classes of membership (individual, affiliate, associate, and corporate) which are described [here](#).

The *IAPPS Newsletter* welcomes news, letters, and other items of interest from individuals and organizations. Address correspondence and information to:

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