

India

Integrated Pest Management Innovation Lab country profile



Map courtesy CIA World Factbook

Population: 1.2 billion
GDP per capita: \$4,000
Feed the Future country? Yes
Involvement in this country since: 2004

Challenges:

- Severe population density
- Pesticide overuse
- Value chain issues
- Loss of Biodiversity
- Bacterial wilt in the soil

Related project name: Regional IPM Research and Education for South Asia

Project overview: IPM Innovation Lab work in India focuses on improving food security by supporting new techniques that aid smallholder farmers in growing pesticide-free vegetables while still combating pests and diseases. The IPM IL has developed IPM packages for tomato, eggplant, okra, onion, pepper, cucurbit, and cruciferous crops. It has organized international workshops on biocontrol and enhanced the sustainability of these technologies by forming partnerships in the private sector.

Accomplishments:

1. **Formed private sector partnerships:** Private sector firms like Biological Control Research Lab and The Energy and Resources Institute carry out the technology transfer of IPM packages.
2. **Implemented disease-control technology:** IPM researchers worked to implement a new use for coconut dust as disease-free potting soil for seedlings in India.
3. **Improved yield with new methods:** Use of IPM packages for vegetables in India was shown to significantly decrease the incidence of pests.
4. **Controlled the invasive papaya mealybug:** By implementing classical biological control, IPM researchers thwarted the onslaught of this pest, saved the livelihoods of thousands of farmers, helped create small businesses, and generated over millions of dollars in benefits.
5. **Managed *Peanut bud necrosis virus* in tomato:** The IPM project in India encouraged farmers to adopt a technique called roguing, which allowed them to control a destructive virus.



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An Indian grower sells her produce (left) and a farmer (right) stands in her field.

Integrating pest management proves a boon to farmers and the Indian economy

The IPM Innovation Lab has been very active in India, and it has developed IPM packages for tomato, eggplant, okra, onion, pepper, and cucurbit and cruciferous crops. Major components developed and incorporated in the IPM packages include neem cake for nematode control; *Trichoderma* and *Pseudomonas* for soil fungi and nematodes; yellow sticky traps for aphid and whitefly control; pheromone traps for monitoring pest populations; roguing for virus disease control; grafting for bacterial wilt control; and applying biopesticides for control of different insect and mite pests.

The IPM IL team at Tamil Nadu Agricultural University (TNAU) organized an international workshop on *Trichoderma* and *Pseudomonas*, training participants from Bangladesh, Indonesia, Kenya, Ghana, Honduras, Guatemala, Kyrgyzstan, Senegal, and Uzbekistan on production. The same team also organized an international workshop on plant virus diseases. In collaboration with the IPM IL management entity, the USAID mission, USDA/APHIS, and the National Institute of Agriculturally Important Insects (NIAII) in India, TNAU actively participated in the classical biological control of papaya mealybug in India, resulting in a benefit of about \$500 million.

Relevant websites

<http://www.oired.vt.edu/ipmcrsp/our-work/projects/south-asia/>

Local Implementers

Tamil Nadu Agricultural University (TNAU), Coimbatore
The Energy and Resources Institute (TERI), New Delhi
Biological Control Research Laboratories, Bangalore

Regions/provinces

Coimbatore, Trichi, Karnataka, Andhra Pradesh, Utter Pradesh, Maharastra

Principal Investigator:

Edwin Rajotte, Penn State University

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