

Special Issue on
New Tools and Strategies for Integrated Pest Management on Transgenic (Bt) and Nontransgenic (Conventional) Cotton Crops

CALL FOR PAPERS

Cotton crops worldwide are attacked by a wide range of insect pests and these pests inflict enormous loss to cotton production. Since the 1960s, the control of cotton pests (particularly, *Helicoverpa* spp., sucking pests, and boll weevils) in most cotton growing countries has relied exclusively on the use of synthetic insecticides. However, it is difficult to build long term self-sustaining integrated pest management (IPM) systems based solely around use of synthetic insecticides. This is because pests may develop resistance to the pesticides; the pesticides often disrupt natural enemy communities leading to pest resurgence or secondary pest outbreaks. The recent advent of GM cotton with multiple toxins targeting key Lepidopteran pests was presented to be a strong foundation for IPM due to the selective toxicity of the Bt proteins. However, even these systems are challenged by potential for target pest resistance to the Bt proteins, which is still essentially a toxin based approach and, ironically, altered pest complex due to reduced insecticide use. In many GM cotton systems the sucking bugs have emerged as important pests requiring targeted control and risking the problems described above. Sustainable IPM systems in both conventional and GM cotton systems require a broader array of tools to manage pests and reduce primary reliance on synthetic insecticides. This special issue is focusing on new approaches to achieve this including innovative biocontrol technologies, bio rational pesticides, new and safer molecular pest control alternatives, use of refuge crops as a source of natural enemies, the use of selective insecticides, sampling regimes, and decision support tools such as use of beneficial insects to pest ratio treatment thresholds which incorporate the action of existing natural enemies. Biocontrol technologies and biorational pesticides integrated with the conservation and utilization of beneficial insects in cotton agroecosystem have potential to be a self-perpetuating solution to pest problems.

Since the 1960s, the control of cotton pests (particularly, *Helicoverpa* spp., sucking pests, and boll weevils) in most cotton growing countries has relied exclusively on the use of synthetic insecticides. Overreliance on insecticides has resulted in resistance to the pesticides and disruption of natural enemy communities leading to pest resurgence or secondary pest outbreaks. The recent advent of GM cotton with multiple toxins targeting key Lepidopteran pests was presented to be a strong foundation for IPM. However, the GM cotton systems are challenged by potential for target pest resistance to the Bt proteins. In many GM cotton systems the sucking bugs have emerged as important pests requiring targeted control and risking the problems described above. Sustainable IPM systems in both conventional and GM cotton systems require a broader array of tools to manage pests and reduce primary reliance on synthetic insecticides. The journal wish to invite scientists and IPM researchers working in this specialist fields to present papers for the special issue.

Potential topics include but are not limited to the following:

- ▶ New approaches to achieve this including innovative biocontrol technologies
- ▶ Bio rational pesticides
- ▶ New and safer molecular pest control alternatives
- ▶ Use of refuge crops as a source of natural enemies
- ▶ Use of selective insecticides
- ▶ Sampling regimes
- ▶ Decision support tools such as use of beneficial insects to pest ratio treatment thresholds which incorporate the action of existing natural enemies
- ▶ The next generation of genetically modified cotton and how such new GMO would influence the development of future IPM strategies for cotton

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/ija/nts/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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