



2016 XXV International
Congress of Entomology
Orlando, Florida, USA | September 25-30

1808: Role of Bt cotton in global IPM

Tuesday, September 27, 2016

02:15 PM - 02:30 PM

📍 *Convention Center - Room W414 A*

Bt cottons containing Cry proteins from *Bacillus thuringiensis* have been released for commercial cultivation since the early 1990's, and are now grown in many countries. Bt cotton was introduced to reduce insecticide applications against primary Lepidopteran pests, especially the *Helicoverpa/Heliothis* complex and pink bollworm, *Pectinophora gossypiella*, in response to escalating insecticide resistance and costs and environmental and health concerns. We review the impact of Bt cotton in Australia, China, USA, Brazil and India, all large cotton producers. In all countries, Bt cotton reduced the number of insecticide applications against the Lepidopteran pests, increased yield and farm income (where control of Lepidopteran pests was previously poor), reduced regional pest Lepidopteran abundance and improved resource use efficiency. However, benefits for improved integrated pest management (IPM) have varied between and within countries. Reasons include: (i) the emergence of pests not susceptible to Bt cotton and no longer controlled by sprays against Lepidopteran pests, (ii) interaction with control strategies for other pests (e.g. boll weevil, leafhoppers and mealy bugs), (iii) interaction with other crops in the production areas (including different crops expressing similar toxins) and (iv) changes in the proportion of crops which may be hosts for emergent pests. Development of resistance remains a persistent threat. These issues have required ongoing adaptation of existing IPM and IRM systems. Nevertheless, Bt cotton provides a strong foundation on which to improve existing IPM systems with careful management and integration with other technologies (HPR, selective insecticides, RNAi), and this trend will continue.

doi: 10.1603/ICE.2016.93254

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