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Impact of IPM on Bt-cotton

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Cotton (*Gossypium spp.*) is the most important commercial crop in India and plays a vital role in agricultural, industrial, social and monetary affairs of the country. The insect pests are one of the major constraints in achieving optimum yield potential. The insect pest complex of cotton crop has undergone a tremendous change owing to many reasons, *viz.*, adoption of Bt cotton, change of ecological scenario, use of unrecommended insecticides, excessive use of inputs at over/under dosages etc. Therefore, integrated pest management strategies were implemented at farmers field during 2012 to 2013 in 20 cotton growing villages of Perambalur district to control insect pests of Bt cotton under rainfed condition. In each village we have selected 6 cotton fields which were growing RCH 2 BG II Bt cotton hybrid. The IPM technologies like inter cropping, border cropping, setting up of yellow sticky traps, use of 5% NSKE and pest repellent, release of parasitoids for papaya mealybug management, use of recommended insecticides on economic threshold basis etc., were implemented in five cotton fields. One non IPM cotton field was maintained as a control field in each village. The pest and natural enemies' populations were recorded in each IPM and non IPM cotton field at weekly intervals. The population of natural enemies per plant (coccinellids, *Chrysoperla*, spiders, *Acerophagus* papayae) was higher in IPM fields (0.35 0.18, 0.31 and 15.4). The spray cost ($\overline{\ast}$ /ha) and cost of cultivation ($\overline{\ast}$ /ha) were higher in non IPM farmers field (9,062, 53,830). The seed cotton yield (q/ha), Benefit cost ratio and Net profit ($\overline{\ast}$ /ha) were higher in IPM farmers (23.18, 1:2.17 and 62,142) as compared to (18.25, 1:1.57 and 38,512) in non IPM farmers.

Biography

Palanisamy Saravanan has completed his M.Sc. in Zoology during 2006 from Bharathidasan University, Trichy, Tamil nadu and MPhil studies from Periyar University, Salem, Tamil Nadu during 2007. He has worked as a Project Assistant in National Research Centre for Banana (ICAR), at Trichy, Tamil Nadu, India from September 2006 to July 2009. He is working as a District Project Officer under the project "National Information System for Pest Management in Bt cotton" in Krishi Vigyan Kendra, Perambalur, Tamil Nadu from 2009 onwards. He has published 3 research papers in reputed journals, 1 book, 6 pamphlets and 8 popular articles from 2009 till date.

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Enhancement of genetic variability through chemical mutagenesis in broad bean

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Plant breeding for improving productivity is impossible without adequate genetic variation. Chemical mutagenesis is a coherent tool used in mutation breeding programme for creating new alleles. Therefore, an investigation was carried out with an objective of inducing cyto-morphological variations using maleic hydrazide (MH) and methylmethane sulphonate (MMS) in broad bean (*Vicia faba* L.) var. Nepal Selection genotype (2n=12) which is homozygous because of often self-pollination. The dry and healthy seeds of uniform size were treated with four concentrations *viz*, 0.01%, 0.02%, 0.03%, 0.04% of the mutagens (MH and MMS) independently which led to significant variations and their effects were compared with the control in the M2 generation. Different economically important mutant were observed namely dwarf, bushy, high yielding and early maturing mutant at intermediate doses of mutagens. The combined analysis of the different parameters showed that MH was most effective in inducing a wider spectrum and maximum frequency of mutation in *Vicia faba* L. Scope for improvement of new genetic variability in broad bean seems promising following chemical mutagenesis.

Biography

Rafiul Amin Laskar obtained his M.Sc. in Botany (specialization Genetics and Plant Breeding) from Aligarh Muslim University. He has also obtained Post M.Sc. Diploma in Plant Tissue Culture and Micropropagation from Aligarh Muslim University. He is pursuing his Ph.D. degree from Aligarh Muslim University and is actively engaged in the research of pulse crops for screening their nutritional, medicinal and yield attributes in response to mutagenic treatments.

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