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Maize seed yield and seed quality response to sowing date during spring in Andhra Pradesh

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Studies on “Maize seed yield and seed quality response to sowing date during spring in Andhra Pradesh” were carried out under field conditions at SRTC, Rajendranagar, Hyderabad during 2012-13. Female (BML 6) and male (BML 7) parents of DHM 117 were sown at fortnightly intervals (from second fortnight of September to second fortnight of December) in 4:1 row ratio in RBD with three replications. Sowing in September second fortnight and October first fortnight recorded significantly more rows cob-1 (16.2 and 15.9), more seeds row-1 (33.1 and 30.7), cob yield plant-1 (120.01 g and 113.36 g), high seed yield plant-1 (92.98 g and 87.09 g) and bold seeds (30.40 g and 29.08 g). At the same time, high germination (96 %) along with long roots (17.1 cm), shoots (12.6 cm), seedling dry weight (0.39 g) and seedling length (29.6 cm) coupled with higher seedling vigor index (SVI I - 2842 and SVI II - 37.5) and field emergence (85 %) was observed during September second fortnight. From the above results, it was concluded that September second fortnight and October first fortnight sowings were better for achieving high seed yield besides realising quality seed.

Biography

V Sandeep Varma has completed his M.Sc. (Ag) in the discipline of Seed Science and Technology at the age of 23 years from ANGRAU. He has published more than 8 papers in reputed international and national journals and 10 popular articles in Telugu language. His research work was presented in two international, three national level seminars. At present he is working as Teaching Associate in Ratnapuri Agricultural Polytechnic College, Medak.

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Biochemical mechanism of insecticide resistance in field populations of diamondback moth, *Plutella xylostella* from India

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Diamondback moth (DBM), *Plutella xylostella* (Linnaeus) is a very serious pest of *Brassica* family in India and other parts of the world and developed resistance to wide range of insecticides. The toxic effect of commonly used insecticides on pests of cabbage was studied on eleven field populations of DBM from India. Early instar larvae were subjected to LC50 bioassay for cypermethrin, chlorpyrifos and spinosad by leaf dip method. The bioassay results revealed the differential susceptibility of four populations of *P. xylostella* (PX-1, PX-2, PX-3 & PX-4) and lab reared susceptible population (PX-L). Resistance ratio (RR) for the above selected strains increased to 29.4, 62.7, 108.6 and 24.3-fold compared to susceptible strain for cypermethrin; 59.9, 137.8, 275.6 and 139.5-fold for chlorpyrifos; 25.7, 17.0, 6.7 and 38.7-fold for spinosad, respectively. The biochemical mechanism of insecticide resistance was investigated by quantifying carboxylesterase and glutathione-S-transferase (GST). The esterase activity was 5.04-12.54-fold high compared to susceptible (PX-L). Qualitative analysis of the esterase's using native PAGE showed there were variation in number of bands with more intense staining in resistant strain. Resistant strains (PX-1 & PX-3) found to have 1.5 fold high GST activities as compared to susceptible. The study revealed that the mechanism of insecticide resistance in DBM is could be due to carboxylesterase and possibly, other non-metabolic mechanisms may also exist which needs further investigation.

Biography

Ramya S L has completed her M.Sc. (Biotechnology) from Mangalore University, Mangalore. At present doing Ph.D. in Biotechnology at Division of Molecular Entomology, National Bureau of Agriculturally Important Insects (NBAIL), Bangalore affiliated to University of Mysore, Mysore.

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