

Research Paper :

Effect of seed treatments on *Caryedon serratus* (Olivier) in stored groundnut and on germination



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SUMMARY

In evaluation of different five pesticide chemicals as seed protectant, seed treatment with thiram @ 3 and 5 g and imidacloprid @ 3 g/kg seeds were found the most effective against *Caryedon serratus* adults as it achieved 90.40, 97.50 and 93.00 per cent mortality, respectively after first day of seed treatment. None of these chemicals tested at doses, hampered the germination of groundnut kernels during the storage of 180 days.

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Key words :

Seed treatment,
Caryedon serratus,
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The Saurashtra region of the Gujarat state of India is one of the most important zones of groundnut production and export contributing and about 40 per cent of the total production in the country. In Gujarat the only primary pest, *C. serratus* of stored pods has become a major problem in 1990s. Now, due to bruchid, farmers are unable to store their produce. In particular, the discovery of insect resistance to methyl bromide and phosphine, the most common fumigants, has intensified the pressure to minimize the use of conventional insecticides against post-harvest pests. Though approach like seed treatment with insecticides and fungicides has come up into vogue. Keeping in view the above facts, the present study was undertaken to find out the best chemical pesticide.

MATERIALS AND METHODS

Three insecticides and two fungicides viz., Carbendazim, Imidacloprid, Tebuconazole, Thiamethoxam and Thiram were tested as kernel protectant against *C. serratus* @ 2 and 4, 2 and 3, 1.25 and 2.50, 1 and 1.50, 3 and 5 g/kg of seeds. Known quantity (750 g) of kernels were kept in plastic container of 1.5 kg capacity and treated with respective treatments. Plastic

containers were shaken manually to maintain the uniformity. The plastic containers were covered with lid and stored in laboratory for experimental purpose. A control was run simultaneously. Three samples, each of 50 g kernels were drawn from each treatment as well as control (untreated seeds) and kept separately in wide mouth cylindrical glass jar (7.0 cm × 5.5 cm). Five pairs of 1 to 2 days old adults were released in each glass jar. These were then kept in BOD incubator at 30 ± 1°C temperature. Observations on mortality of adults, eggs laid by females and hatching of eggs were recorded at 1, 3, 7, 15 days after treatment in first set. In second set, 30 days after treatment observations on formation of pupa and adult emergence were recorded. In third set, 60 days after treatment observations on adult emergence, eggs laid by second generation females and hatching of eggs were recorded. The germination test of groundnut kernels was carried out 30, 60, 120 and 180 days after treatment under laboratory as well as under field conditions.

RESULTS AND DISCUSSION

The results obtained from the present

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