

Research Paper :

Efficacy of botanicals as seed protectant against *Caryedon serratus* (Olivier) in stored groundnut and effect on germination



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SUMMARY

Among the different eight plant materials tested for their efficacy against *Caryedon serratus* adults, rhizome powder of turmeric at 5 per cent (W/W) proved to be the most effective plant material as it recorded the lowest number of *C. serratus* adults emerged after 60 days of seed treatment, followed by neem leaf powder at 5 per cent. None of the plant materials tested at doses had hampered the germination of groundnut kernels during the storage periods up to 180 days.

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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 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. A good post harvest pest management based on good storage practices is the most vital solution. The need for alternatives to chemical measures for the protection of stored products is also strongly felt. Though approach like application of botanicals has come up into vogue. Keeping in view the above facts, the present study was undertaken to find out the best botanical.

MATERIALS AND METHODS

Eight different plant materials, namely citrus, *Eucalyptus*, jatropha, mint, neem, nerium, papaya, rhizome powder of turmeric were collected and dried under shade and powdered in electric grinder. All the botanicals were used as leaf powder except turmeric which was used as rhizome powder. Known quantity (750g) of kernels were kept in plastic

container of 1 kg capacity in which known quantity (all the plant materials @ 1, 3 and 5 g except mint @ 1, 1.5 and 2.5 g) of plant materials were added. Plastic containers were shaken manually to obtain uniform layer of powder on kernels. The plastic containers were covered with lid and stored in laboratory up to 6 months for experimental purpose. A control was also run simultaneously. Three samples, each of 50 g kernels were drawn from each dose of botanical materials as well as control (untreated kernels) and were kept separately in wide mouth cylindrical glass jar (7.00 × 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 for 60 days.

Observations were recorded for the emergence of first generation beetles at 60 days after release of adults. The effectiveness of each treatment was determined by comparing the number of F1 progeny with those observed in untreated control during the same period. Also observations on adult emergence were recorded at 120 and 180 days after the seed treatment. The germination test of groundnut kernels was carried out 60, 120 and 180 days

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