



Research Article

Efficacy of inert dusts as grain protectant against *Rhyzopertha dominica* infesting stored wheat

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ABSTRACT : The different inert dusts viz, fly ash, cow dung cake ash, rice husk ash, diatomaceous earth @ 5g /kg seed alone or in combination with desiccant ($MgSO_4$) 5g/kg seed were compared with deltamethrin 2.5 WP @ 40mg/kg seed and untreated control against major storage insect pest infesting wheat seed. The observation on germination and insect infestation were recorded at interval of three months of storage period. Among different inert dusts and insecticide, seed treatment of deltamethrin 2.5 WP@ 40 mg/kg and diatomaceous earth+ desiccant ($MgSO_4$) each 5 g/kg seed were found most promising in preventing seed damage and maintained higher seed germination than MSCS (85 %) for the storage period of 9 months.

KEY WORDS : Diatomaceous earth, Storage, Wheat, *Rhyzopertha dominica*

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INTRODUCTION

Wheat is one of the most widely used staple foods in the world of agriculture. Among the wheat growing countries of the world, India ranks second both in area and production. Being an important cereal, wheat is stored by the farmers and government agencies for its utilization throughout the year in different parts of the country. Use of quality seed is the most essential basic input in crop protection as this helps in maintaining require plant population per unit area. After harvest, the seed are stored for different period for sowing in next season. Besides production constraints the insect pest problem, improper sanitation and storing methods cause both qualitative and quantitative losses in wheat. In storage the

losses are mainly due to insects, mites and pathogens. The presence of insects in stored products has always posed unique problems. Nearly 10 per cent of the grain stored after each harvest is believed to be lost due to ravages of rats, insects, mites and microbial agents (Walter, 1971). The average loss of food grains in storage due to biotic and abiotic factors accounts for 10 per cent per year, out of which insects are contributing about 2.5 to 5.0 per cent. Survey conducted by Food and Agriculture Organization revealed that lesser grain borer, *R. dominica* is the major pest of wheat, rice and millets in India (Champ and Dye, 1977).

Its attack is normally noticed when considerable damage is already done. Prevention of loss in stored products due to insects is of most important. Insecticides when properly used will continue to play an important role in reducing the storage losses due to insect pests, but the indiscriminate use of insecticides has posed several problems like residual toxicity, resistance development and environmental hazards. There is a need to find the alternatives to the chemicals that can effectively prevent the storage losses, safer to the human beings and least detrimental to environment.

This approach could be achieved by exploiting use of

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