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Repellent activity of Cinnamomum aromaticum against three major storage insect pests

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Food grain production in India is 250 million tones during 2012-13, out of this about 20-25% food grains are damaged by storage pests. The most common method of store pest control followed at present is the application of chemicals. Though, these chemicals offer efficient protection against pests cause certain undesirable side effects like residual toxicity, application hazards, environmental pollution, etc. Consumers are afraid to use such food grains with toxic effects and residual chemicals. To avert these problems, there is need to develop control measures which are most effective, cheap and easier to adopt. In this context use of botanicals, having efficient insecticidal properties was followed by age old Indian farmers, most of which exist today as indigenous practices are being realized as safe tool in the stored pest management. Use of natural compounds, such as essential oils that result from secondary metabolism in plants is the alternative method to chemical control. The toxicity of large number of essential oils and their constituents have been evaluated against number of stored-product insects. Essential oils are commercially used in four primary aspects, as aromas in fragrances and perfumes, as flavouring food additives, as pharmaceuticals, and as insecticides. Ethanolic extract of powdered spice Cinnamon, *Cinnamonum aromaticum* was studied for its repellency, against three major stored- product insect pests viz., Rust red flour beetle- Tribolium castaneum, Rice weevil - Sitophilus oryzae, Lesser grain borer - Rhyzopertha dominica. The filter paper bioassay technique was used to determine the response of insects to potential repellents by measuring their movement. At the longest time interval (24 hrs), filter paper treated with C. aromaticum was effective repellent to adults of T. castaneum (14%), S. oryzae (54%) and R. dominica (58%).

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