

Control of stored product insect pests by using smoke generated from paddy husk combustion.

Wijayarathne.,L.K.W., Upul Kumara.,M.A.S., Fernando.,M.D., Palipane.,K.B., Kumarasinghe., N.C., 2004, Behavioural change of Sitophilus oryzae L.(Coleoptera:Curculionidae)upon its exposure to smoke generated from paddy husk combustion. Proceedings of twenty fourth Annual Sessions, Institute of biology, Sri Lanka

Wijerathna, L.K.W. Subasinghe, P.J.Fernando, M.D.Plipane, K.B. (2005) Control of Sitophilus oryzae (Coleoptera:Curculionidae)L. Rhyzopertha dominica(Coleoptera: Bosteichidae) F. and Tribolium castaneum (Coleoptera:Tenebrionidae) Herbst by modified atmosphere created by paddy husk combustion.

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Laboratory studies were conducted to determine the toxicity of smoke generated from paddy husk combustion against adults of rice weevil (*sitophilus oryzae*) lesser grain borer and red flour beetle. Adults of these species were placed in cloth sacks hung in bottles and subjected to smoke generated from paddy husk combustion. After different period of smoke, mortality was counted. Results revealed that there is a considerable controlling effect in exposing all three species of insects tested to smoke for 13 hours, as compared to the untreated control.

Rice weevil *Sitophilus oryzae* L. (Coleoptera:Curculionidae)was tested for its behavioural change upon exposure to the smoke generated from paddy husk combustion under laboratory conditions. Adult rice weevils,20 in number, were put into cloth sacks hung in sealed bottles later filled completely with smoke generated from combustion of paddy husk. Insects prepared in the same manner were kept inside sealed bottles as the control without being exposed to smoke. after different periods of exposure to smoke, response of rice weevils was evaluated in terms of their survival/ behavioural change. Three distinct forms of adults were observed in terms of their response upon exposure to flue gas viz. dead, moribound(not act5ivre)and live(active)forms. Certain moribund forms were found to be dead on the subsequent count made 24 hrs later. More strikingly, some other moribund forms recovered to live forms at the second insect count. Possible reasons of this peculiar behavior of *Sitophilus oryzae* L have to be addressed well, before the flue gas generated by the combustion of paddy husks is recommended for commercial usage.