

Screening of currently available insecticides in Sri Lanka for their efficacy & toxicity against insects for stored paddy

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Institute of Post harvest Technology, Research and Development Centre Jayanthi Mawatha, Anuradhapura

Storage losses in paddy alone have been estimated to be 4-6% and it had been estimated that 80% of this loss is due to insect attack. Out of several insect control measures, mostly contact insecticides have been used to control most common and major storage insects; *Rhyzopertha dominica* (Lesser grain borer) and *Sitophilus oryzae* (Rice Weevil).

Even though a wide range of contact insecticides is commercially available in Sri Lanka, Actellic (Active ingredient, Pirimi-phosmethyl) had been widely used and become popular among farm level as well as commercial level grain collectors till recently. However, currently due to high cost and unavailability of this popular insecticide, problems have risen to use that as an effective insecticide. So, in order to find an alternative effective insecticide, which can replace Actellic currently available and registered samples of insecticides were screened for their efficacy and toxicity against Rice Weevil *Sitophilus oryzae* L. (Coleoptera: Curculionidae) and Lesser grain borer *Rhyzopertha dominica* F. (Coleoptera: Bostrichidae) under laboratory conditions. Freshly emerged one week old adult insects of both species were kept on filter papers and recommended dosages of each insecticide were sprayed and mortality % of each species was recorded after three, eighteen and twenty four hours.

When consider toxicity levels, Solfac (*Cyfluthrin*), Tracer (*Spinosad*) & Actara (*Thiamethoxan*) showed higher results according to the descending order. However, comparison of mammalian toxicity (LD₅₀) of chemicals showed that Solfac (*Cyfluthrin*) falls into the category of highly hazardous insecticides and all the other insecticides fall into the moderately hazardous category hence, insecticide Solfac (*Cyfluthrin*) cannot be recommended as an insecticide for stored paddy since paddy are for human consumption. So, in selecting a suitable insecticide from those which performed favorably, when consider mammalian toxicity (LD₅₀), residue effectiveness as well as

cost benefits, can recommend Tracer (*Spinosad*) & Actara (*Thiamethoxan*) as a suitable insecticide for application against insects of stored paddy.