

Donahaye, E.J., Navarro, S., Bell, C., Jayas, D., Noyes, R., Phillips, T.W. [Eds.] (2007) Proc. Int. Conf. Controlled Atmosphere and Fumigation in Stored Products, Gold-Coast Australia. 8-13th August 2004. FTIC Ltd. Publishing. Israel pp. xxx-xx

GRAIN PROTECTANTS AND PHOSPHINE RESISTANCE OF STORED INSECT PEST IN VIETNAM

BUI THI TUYET NHUNG, ~~AND~~ DUONG MINH TU

~~et al.~~

*Plant Protection Department
Ministry of Agriculture and ~~rural~~ Rural Development
Hanoi — Vietnam*

ABSTRACT

Chemicals such as grain protectants and fumigants have been used to control stored insect pests ~~from~~ since the 1960s in Vietnam. However, ~~for~~ over the last 15 years, many cases have been recorded of insect surviving ~~after treatments~~ have been recorded and the possibility considered as of resistance ~~of by~~ stored insect pests has been considered.

Since 1990, ~~r~~Research ~~on~~ into the resistance of some major stored insect pests to grain protectants (included Sumithion and Dichlorovos-DDVP) and the fumigant phosphine ~~fumigant~~ has been ~~done~~ undertaken since 1990 using the FAO methods (numbers 15 and 16).

The Lesser ~~lesser~~ grain borer (*~~Rhizopertha~~ Rhizopertha dominica* Fab.) had the highest tolerance, not only to phosphine but also to Sumithion and DDVP. Almost Most of the local strains of this species were highly resistant to both of the grain protectants and Phosphine phosphine. Rice ~~The rice~~ weevil (*Sitophilus oryzae* L.) was susceptible to all ~~those~~ these pesticides. Tolerance of Red ~~red~~ flour beetle (*Tribolium castaneum* Herbst.) to ~~those~~ these chemicals was found to be increased, but the resistant resistance levels of some local strains of this species were not high.

~~Continuing~~Further research s on the resistance of other stored insect pests such as *Cryptolestes* spp. and *Liposcelis* spp to the above chemicals ~~resistance of other stored insect pests such as *Cryptolestes* spp. and *Liposcelis* spp. are~~ is necessary in Vietnam ~~to carry out~~ in order to enable improvement in Phosphine-phosphine fumigation practices and ~~the application~~ procedures for applying grain protectants ~~in Vietnam.~~