EFFECT OF PADDY VARIETY, AERATION AND COMMODITY TYPE ON THE PROGENY PRODUCTION OF RICE WEEVIL

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The type and degree of losses of stored paddy/rice depend on several factors. The insects cause 80% of storage losses of grains. Rice weevil *Sitophilus oryzae* (Coleoptera: Curculionidae) is a destructive insect pest of stored paddy/rice. Due to concerns on the recommended control methods based on synthetic chemicals, alternatives need to be sought. Objectives of this study were to determine the effect of paddy variety, aeration and commodity type on the progeny production of *S. oryzae*. The experimental design was a three-factor factorial, Completely Randomized Design (CRD). Ten *S. oryzae* adults aged 14 days were introduced to 35 g of paddy/rice, maintained for 14 days and removed. Paddy or polished (30%) rice of varieties Bg 358, Bg 300, Bg 352, Bg 450, Bg 94-1, *Sudu Heenati*, *Kalu Heenati*, *Pachchaperumal*, *Pokkali* and *Suwandel* were maintained in open or airtight condition under ambient room temperature, and the number of progeny adults in each sample was determined twice, at five-week intervals, following the removal of parental adults. Poisson regression analysis was done and the differences in the variety, aeration and commodity type were determined by Genmod procedure of Statistical Analysis Software. Progeny production was significantly lower in paddy than in rice. Airtight storage had lower progeny compared to that in the aerated samples. Bg 300 was the most resistant to infestation by *S. oryzae* on both occasions. The varieties Bg 94-1 and *Kalu Heenati* were resistant to infestation by *S. oryzae* only in the second month. Colour (red or white) and length (long or short) of rice affected the progeny production by *S. oryzae*. Also there was a significant difference between traditional and improved varieties. This study revealed that storage as paddy under airtight condition reduces insect infestation/progeny production, and resistance to infestation occurs in certain paddy varieties.

Keywords: Aeration, Paddy varieties, Progeny, Rice, *Sitophilus oryzae*