

STORED GRAINS**WHEAT****EFFECT OF DIFFERENT STORAGE RECEPTACLES ON THE INCIDENCE
Trogoderma granarium EVERTS IN STORED GRAINS OF WHEAT**

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ABSTRACT

Effect of different storage containers on the incidence of *Trogoderma granarium* Everts in stored wheat. The significant differences were noticed in dry mass loss and grain damage stored in different containers under artificial and natural conditions. Higher dry mass loss (5.85%) and damaged grains (31.05%) were noticed in mud pot stored grains. The number of adults emerged varied from 9.33 in metal drum to 14.66 in mud pot. Under natural condition, low dry mass loss and damaged grains were observed in mud pot followed by urea bag, cloth bag, polythene bag, gunny bag and metal drum.

KEY WORDS: *Trogoderma granarium*, Wheat, Storage Receptacles.

Introduction

WHEAT is one of the most widely used staple food in the world of agriculture. Among the Wheat growing countries of the world, India rank second both in area and production (Anonymous, 1998). It is attacked by a number of different insect pests under storage condition in which, the khapra, *Trogoderma granarium* Everts (Coleoptera: Dermestidae) is a major pest of stored grain reported from India (Cotton, 1952). It is very serious pest of wheat, but also found feeding on bajra, jowar, rice, gram, maize and pulses in storage. Only larval stage is destructive, adult being harmless. The larvae start feeding on the germ portion of the grains and feed deep into them. This cause great economic loss both in quantity and quality. The germination of seed is also affected. The present investigation has been undertaken to find out an effective and economical storage receptacle mainly confined to the uses of different types of container, which could profitably be employed by the villagers.

Material and Methods

Different storage receptacles commonly used at village level, used for storing the grains included

polythene bag (200 gauge), urea bag, gunny bag, cloth bag, mud pot and metal drum. The experiment was carried out under both artificial and natural conditions in completely randomized design (CRD) with three replications. Twenty five newly hatched larvae were allowed for feeding on weighed and counted grains kept in different storage containers under artificial conditions. The grains were also kept without the inoculation of larvae under natural condition. Observations on adult emergence were recorded until all the larvae became adults, while per cent dry mass loss and damage grains were obtained after 60 days of inoculation of larvae in each treatment.

Results and Discussion

The results presented in the *Table* revealed that the significant differences were noticed in dry mass loss and grain damage stored in different containers under artificial and natural conditions. Under artificial condition, maximum dry mass loss (5.85%) was recorded in mud pot followed by urea bag (4.95%), polythene bag (4.81%) and cloth bag (4.69%) stored grains. The minimum dry mass loss (3.95%) was noticed in grains stored in metal drum, which was at par with gunny bag (4.30%). As regards the damaged grains, maximum damage was also observed in mud pot (31.05%), which

Table
Effect of the different storage containers on the incidence of *T. granarium* in stored grains of Wheat

Treatment	Under artificial condition			Under natural condition	
	Dry mass loss (%)	Damaged grains (%)	Adult emerged (No./25)	Dry mass loss (%)	Damaged grains (%)
Polythene bag	4.81 (12.67)*	24.05 (29.37)	12.0	0.48 (0.98)**	1.33 (1.35)**
Urea bag	4.95 (12.79)	24.59 (29.71)	10.66	0.51 (1.02)	1.85 (1.55)
Gunny bag	4.30 (11.83)	23.31 (28.87)	8.00	0.43 (0.96)	1.22 (1.31)
Mud pot	5.85 (13.99)	31.05 (33.85)	14.66	0.55 (1.02)	1.95 (1.56)
Cloth bag	4.69 (12.50)	27.34 (31.52)	13.33	0.51 (1.00)	1.73 (1.49)
Metal drum	3.95 (11.40)	21.80 (27.83)	9.33	0.33 (0.91)	1.15 (1.28)
Sem±	0.14	0.34	0.70	0.02	0.05
C.D. at 5%	0.45	1.03	NS	0.08	0.15
C.V. %	2.85	2.91	6.08	3.55	5.10

*Percentage transformed to angles; outside values are its back transformation to percentage. ** $\sqrt{x+0.5}$ transformation. NS: Non-significant.

differed significantly from other receptacles. The minimum grain damage (27.83%) was recorded in grains stored in metal drum. The number of adults emerged varied from 9.33 in metal drum to 14.66 in mud pot.

Under natural condition, minimum dry mass loss (0.33%) and damaged grains (1.15%) were observed in metal drum followed by gunny bag (0.43 and 1.22%), polythene bag (0.48 and 1.33%), cloth bag (0.51 and 1.73%), urea bag (0.51 and 1.85) and mud pot (0.55 and 1.95). The present findings are thus in conformity with Awaknavar *et al.* (1989) who reported that gunny bag was better storage structure compared to earthen pot with reference of *C. chinensis* infestation in pulses. Senguttuvan *et al.* (1993) claimed significantly low dry mass loss and damaged kernel in gunny bag due to *C. cephalonica* under artificial condition followed by polythene bag and urea bag.

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US may plant record soya crop

US farmers will sow a near-record 74.8 million acres of soybeans this spring, the Government said recently, preventing a soya shortage but curtailing the corn crop when ethanol production is booming. Corn plantings are forecast for 86 million acres, down 8 per cent from 2007.