

AN IMPROVED TECHNIQUE FOR REARING THE TROPICAL WARE-
HOUSE MOTH *EPHESTIA CAUTELLA*
(Walker) (Lepidoptera ; Phycitidae).

M. Gonen and E. Donahay

Institute for the Technology and Storage
of Agricultural Products. Stored Products Division.
Ministry of Agriculture.
P.O.Box 15030, Tel-Aviv, Israel.

The ability to mass-rear an insect is a prerequisite for experimentation or application of certain control measures, such as the sterile male release technique. One of the more important factors that determine the feasibility of the rearing method, apart from the cost of culture medium ingredients, is the yield of insects per culture medium unit.

Glass jars of 1 or 2 l., used until recently as rearing containers for the tropical warehouse moth *Ephestia cautella* (Walker) (Navarro and Gonen, 1970)⁽¹⁾, were inadequate for obtaining large numbers of the insect. Moth larvae usually do not penetrate deeper than 4-5 cm into the culture medium, and therefore utilize only about half the culture medium, when reared in such jars.

Flat plastic containers (31x23x6 cm) were tried to overcome this limiting factor. Eight hundred gr. of culture medium were spread evenly to form a layer about 3 cm deep. Facilities to collect fully developed larvae were provided by attaching inverted funnels to holes in the lids of the containers. The fully developed larvae aggregate in two plastic cups attached to the inverted funnels (see Fig. 1).

(1) Navarro, S. and Gonen, M. 1970 - Some techniques for laboratory rearing and experimentation with *Ephestia cautella* (Wlk.) (Lep. Phycitidae). *J. stored Prod. Res.* 6: 187-189.

To compare the rearing efficiency of the glass jars with that of the plastic containers, two egg densities per gram culture medium were used with 7-10 replicates in each group. Larvae counts from both containers and jars are presented in Table 1.

TABLE 1: Comparison of rearing efficiency of *E. cautella* between glass jars and flat containers.

Container type	Gr. medium per container	No. eggs per container	Mean No. larvae per container	No. larvae per gr. medium
2 l. jars	400	2,250	499	1.2
	400	3,000	313	0.7
Flat plastic containers	800	4,500	1,399	1.7
	800	6,000	1,680	2.1

Utilization of the medium was lower in the glass jars than in the plastic containers at the two densities tested. At the higher density utilization efficiency of the medium in the glass jars was only about one third of that in the plastic containers.

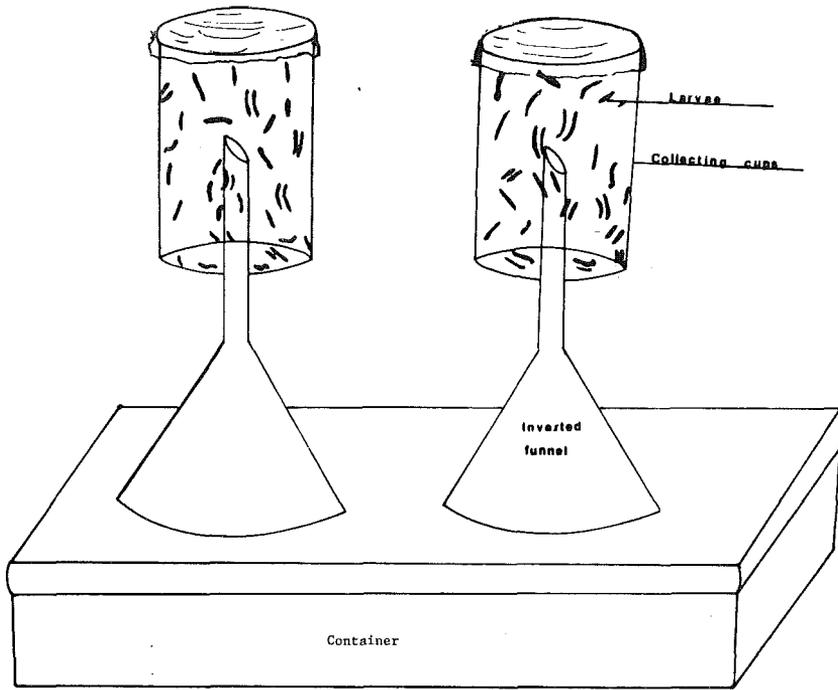


Fig 1: Rearing container with attached plastic cups for collection of larvae.