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A SIMPLE TRAP FOR MONITORING SORGHUM SHOOT FLY.

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Shoot fly, *Atherigona soccata* Rondani is an important seedling pest of sorghum in Asia, Africa and Mediterranean Europe. To monitor the adult shoot fly populations a square pan galvanised metal (SPGM) trap was recommended by Seshu Reddy *et al.* (1981), but this is bulky and renders removing and counting of flies time consuming. In addition, water and fish meal have to be replaced frequently. Therefore a simple and effective trap was developed for use in routine monitoring of the shoot fly populations, taking into consideration the disadvanatages of SPGM trap.

The principle is based on the fruit fly trap designed by Steiner (1957) and the plastic shoot fly water trap used by Meksongsee et al (1981). The main part of the trap is a 1 liter capacity plastic jar with three rows of small hole (4 mm dia) near the open end to allow the entry of the shoot flies (Fig. 1a). The number of holes that gave best catches were determined after a preliminary trial where three rows of holes in the lower part of the container were found to give the best catch results. The base of the jar has two holes, the bigger one for the insertion of the fish meal dispenser and the smaller one for the insecticide tube. The fish meal dispenser is perforated around the upper part while the lower unperforated part contains the fish meal. The insectide tube is also perforated in the same way and contains cotton soaked with insecticide (dichlorvos). The inner part of the plastic jar lid is cut in such a way that only a small rim is left on which the edge of the inserted funnel can rest. The jar lid ring is screwed on to the plastic jar such that the funnel and lid fit tightly. The collection jar is mounted on to the funnel outlet by means of a hole in its plastic lid to collect the dead flies. The dispenser is filled with 25 g fish meal saturated with water. After 24 in fermentation of the fish meal, the dispenser is inserted into the trap.

The newly developed 'plastic' trap was compared with the conventional SPGM trap at six locations distributed over the ICRISAT farm during 1982-83. At each location both types of traps were placed 30 cm above ground level and 100 m apart. The test was run for 3 months (mid January-mid April). Water was changed in the SPGM trap every sixth day and fish meal every third day whereas in the plastic traps fish meal and insecticide were replaced every seventh day.

There were no significant differences in the total number of shoot flies caught in the plastic compared to SPGM traps at six locations at ICRISAT research farm. During the 3-month period the SPGM traps captured 9,407 flies as compared to 9,555 flies in plastic traps. Thus the plastic trap was found to be as effective in catching shoot flies as the conventionally used metal trap. Fig. 2 presents the weekly mean catch of the two trap types, and the general trend in shoot fly catch is similar in both types. However, more variation from one week to the next was observed in the SPGM traps (S.D=677.9) than in the plastic trap (S.D=510.1). The reason may be that fish meal was changed after every 3 days

TABLE 1. Shootfly catches in plastic traps.

Month	Standard week	No. shootflies captured/trap/week	
		with insecticide	without insecticide
December	51	350	900
	52	1803	2434
January	1	880	1851
	2	950	3163
	3	1468	3082
TOTAL		5451	11432
't' test		(significant)	

in the SPGM trap against 7 days in plastic trap. The fish meal in the SPGM trap was in direct contact with the "catching" water 20 l) which may have led to faster fermentation, breakdown or dilution of the attractive fermented products.

With some modification this trap can be converted into a live fly catching type (non-insecticide type) as shown in Fig. 1b. A preliminary field experiment was set up during December 1982 to January 1983 to compare the trap that utilizes insecticide to collect dead flies with the live fly trap. The experiment was run with one trap of each type only in a young sorghum field for 5 weeks. The traps were placed 100 m apart at 30 cm above ground level. Fish meal and insecticide were replaced every seventh day.

The live catching type (non-insecticide) captured significantly higher number of flies Table 2). This indicates that either the insecticide might have a repellent effect on the shoot flies or it might have masked the attractiveness of fish meal. This needs to be investigated in detail.

From the data recorded in these experiments it became clear that the new plastic trap can catch shoot flies successfully and may be used for population monitoring. The advantages over the SPGM trap are:

1. It is simple, light, handy and can easily be used outside research stations.

2. It does not require water and as frequent change of fish meal as the metal trap and therefore, reduces the operational costs of shoot fly monitoring.

3. It can be used to catch live shoot flies for various purposes.

REFERENCES

Meksongsee, B., M. Chawanapong, U. Sangkasuwan, and P. Poonyathaworn. 1981. The biology and control of the sorghum shoot fly, *Atherigona soccata* Rondani, in Thailand. *Insect Sci. Applications* 2(1/2):111-116.

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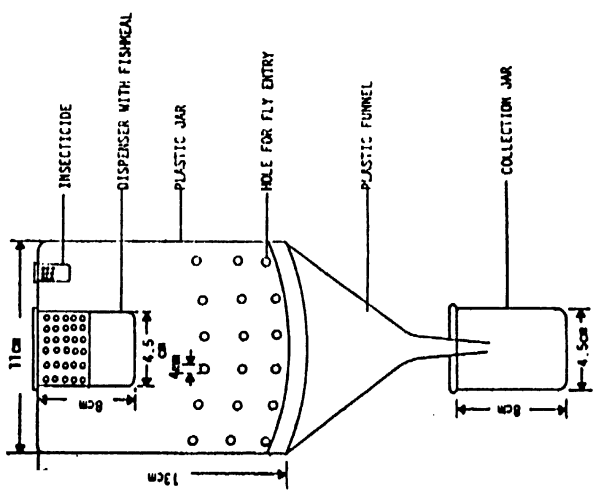

FIG. 1a SHOOTFLY TRAP

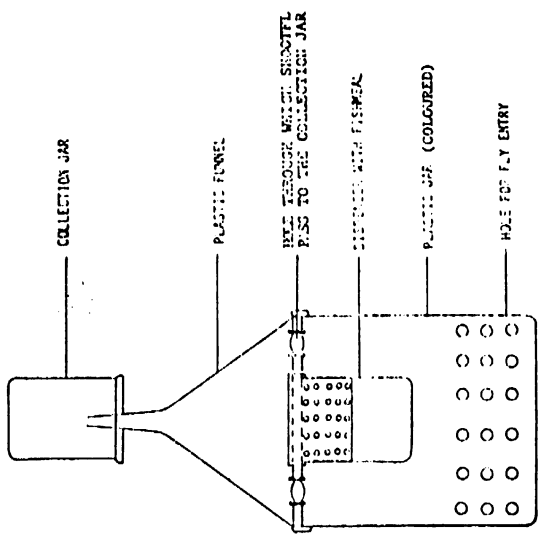

FIG.1b SHOOTFLY TRAP (NON-INSECTICIDE TYPE)

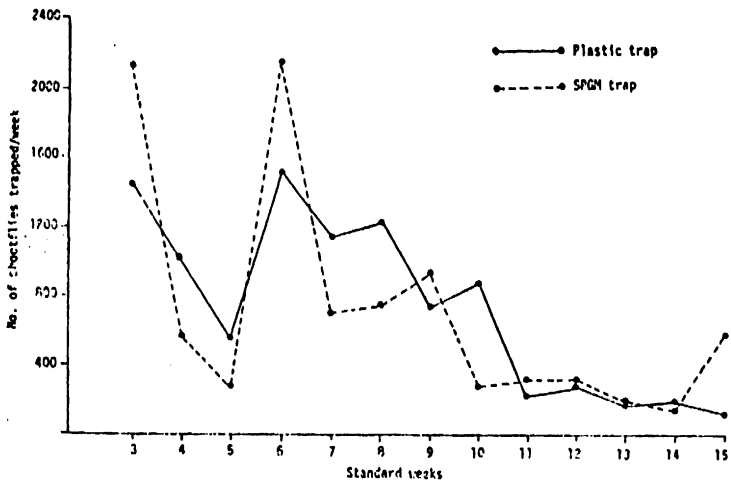

Fig.2 Mean shootfly catches in SPGM and plastic trap at 6 locations at ICRISAT Center

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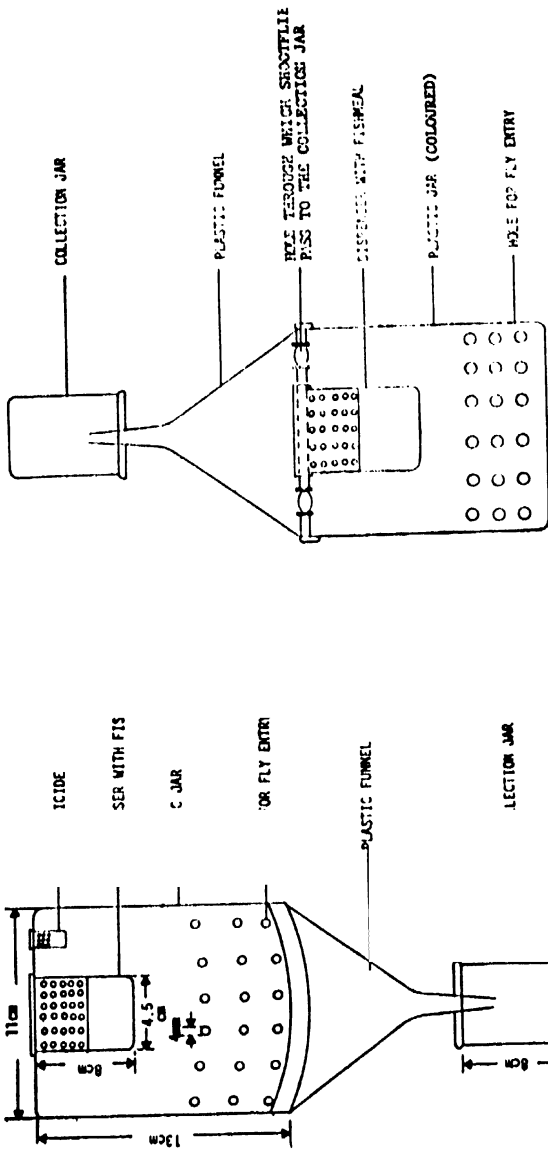

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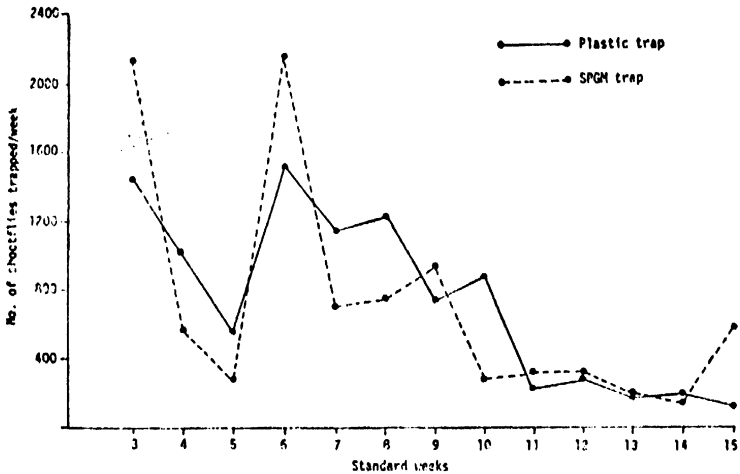

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