

Damage by Pests and Phyllody to *Sesamum indicum* in Relation to the Time of Sowing

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Shoot webber and gallfly incidence and phyllody infection were assessed in 12 monthly sowings in gingelly during 1974-75. February, March and April sowings showed shoot webber infestation ranging from 10.4 to 16.9 per cent followed by a sharp decline in pest activity in May to August sowings. The infestation increased in September to November sowings; the highest damage of 23.0 per cent was observed in October sown crop. Gallfly infestation was high in December and January sowings (23.3 and 21.3 per cent pod damage) while damage by this pest was absent in sowings from February to April. There was 63.6 per cent incidence in June sowing and the same ranged from 24.5 to 38.2 per cent in July, August, September and November sowings. The phyllody incidence was least in January, February and September sowings ranging from 0.21 to 0.83 per cent and the highest incidence of 33.9 per cent was observed in November sowing.

The shoot webber, *Antigastra catalaunalis* Duponchal and the gallfly, *Asphondylia sesami* Felt. are the most important pests of sesame. The phyllody disease also seriously damages the crop. With a view to find out the relationship of these three to the time of sowing, monthly sowing trial commencing from the first week of December, 1974 was conducted at the Tamil Nadu Agricultural University, Coimbatore. The observations made in twelve monthly sowings are furnished in this paper.

MATERIALS AND METHODS

The variety TMV. 3 was sown during first week of every month in plots of size 3 M² replicated thrice. The extent of damage by the shoot webber, gallfly

and phyllody was assessed in each sowing after the full expression of the damage. In the case of shoot webber, total plant population and the number of attacked plants in each plot was recorded 40 to 50 days after sowing. For gallfly infestation, the total number of pods and the number of pods attacked by the pest on the central shoot of ten random plants per plot were recorded 60 to 70 days after sowing. For phyllody, the number of infected plants and the total plant population were recorded about two weeks prior to harvest. The percentage of attack was worked out in each case and furnished in Table I.

RESULTS AND DISCUSSIONS

The data gathered are furnished in Table I. The sowings in February,

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TABLE I. Percent infestation by shoot webber and gallfly and infection by phyllody in *Sesamum* planted in different months.

Month of sowing	Shoot webber (plants)	Gallfly (pads)	Phyllody (plants)
Dec. 1974	6.6 (14.94)	23.3 (28.85)	9.8 (18.24)
Jan. 1975	4.5 (12.23)	21.3 (27.52)	0.21 (2.64)
Feb. 1975	16.9 (24.30)	0	0.83 (5.22)
Mar. 1975	10.4 (18.80)	0	10.70 (19.11)
April. 1975	12.9 (21.05)	0	4.80 (12.64)
May 1975	0.6 (4.44)	4.5 (12.27)	10.20 (18.59)
June 1975	0	63.6 (52.86)	10.60 (18.99)
July 1975	0	38.2 (38.16)	10.20 (18.65)
Aug. 1975	0	35.1 (35.30)	19.20 (25.96)
Sep. 1975	19.5 (26.21)	24.5 (29.69)	0.65 (4.61)
Oct. 1975	23.0 (28.63)	10.2 (18.62)	8.50 (16.92)
Nov. 1975	16.0 (23.58)	31.7 (34.28)	33.90 (35.60)
S. E.	(3.120)	(2.340)	(2.73)
C. D. (P=0.05)	(9.150)	(6.863)	(8.01)

(Figures in parentheses are the transformed values - Sine values).

March and April showed a fairly high degree of damage (10.4 to 16.9 per cent) of plants by the shoot webber. The prevalence of the pest in the field was evident by the middle of March and it continued to be active till the middle of May. The activity of parasites (*Bracon* spp.) was observed in May. There was a decline in infestation in the sowing in May (0.6 per cent) and the sowings in June to August did not have any infestation, these four sowings being significantly superior to other sowings

in respect of freedom from the pest. A spurt in the activity of the pest was noticed on the crop sown in September, October and November with 19.5, 23.0 and 16.0 per cent infestation respectively. The webbing activity of the pest was more by the end of October and continued to be high till the end of December. As seen from the weather data, rainfall was fairly well distributed during June to September and this rainy weather appeared to be detrimental to the multiplication of

the pest. Menon *et al.* (1960) had observed that the attack of the pest was much less in June to August when it was rainy than in September to November when the weather was comparatively dry. Highest infestation was observed by them in May and September-October. Chadha (1974) recorded a higher incidence of the pest in dry sunny weather than in wet weather and a positive correlation between sunshine and pest activity. The observations made by the authors in this study go to corroborate the above findings.

Infestation by the gallfly was fairly high in the sowings in December and January affecting 23.3 and 21.3 per cent pods respectively, the activity of the pest having been evident from the middle of February to the middle of March. The sowings in February to April did not show any infestation by the pest and in the sowing in May, the attack was low. This was followed by a spurt in the activity of the pest in the sowings from June (63.6 per cent) to September and in November during which period, the attack ranged from 24.5 to 38.2 per cent. The activity of the pest was observed in the field by the middle of June and found to increase thereafter and did not abate until October which was followed by a lower infestation rate only to be intensified again in January. The high temperature prevalent in March, April and May seemed to arrest the population of the gallfly and the monsoon conditions seemed to favour the multiplication of the pest. Khan (1964) had mentioned the gallfly appearing in the field during

September and continuing to be active from October to November. In the current observations, the activity of the pest was seen to have commenced much earlier. While the sowings in June to August were free from the shoot webber, the crop experienced the highest damage by the gallfly then.

The incidence of phyllody was least in the sowings in January, February and September with 0.21 to 0.83 per cent of plants only affected, it being significantly less than in other sowings. A higher infection was experienced in the sowings in December (9.8 per cent), March (10.7 per cent) and May to August (10.2 to 19.2 per cent), the incidence reaching a peak in the sowing in November on the vector, *Orosius albicinctus* Dist. was observed in very meagre numbers only in the field in all the sowings. Sellammal *et al.* (1973) found the incidence of the phyllody to be the highest during the second fortnight of December and a fairly high rate of incidence in the plots sown from the second fortnight of October to March. They have further reported that the leaf hopper population recorded within the field had no significant influence on the incidence of phyllody disease. In the present observations too, the crop sown in November showed the highest infection. In another field where sowing was done by the end of October, upto 63.95 per cent infection was observed even though the presence of the vector was very meagre in the field throughout the period of crop growth.

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