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Research Note

Control of sesame phyllody caused by plo's

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ABSTRACT : Sesame or Til (*Sesamum indicum* L.) belongs to family Pedaliaceae is one of the principal oilseeds in common use in India. Among the several diseases infecting sesame, phyllody seems much prevalent in Gujarat and especially in Saurashtra region. To manage disease by check the vector population through systemic insecticide is only way to control this disease.

KEY WORDS : *Sesamum indicum*, Phyllody, Vector control, Insecticide

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Among the edible annual group of oilseed crops, sesame plays an important role in the oilseed economy through out the world. It is considered as "queen of oilseeds". In Gujarat, there are five districts *viz*., Amreli, Junagadh, Bhavnagar, Mehsana and Kaira under low runoff and medium yield gap region and three districts *viz*. Ahmedabad, Rajkot and Surendra Nagar under low runoff and high yield gap region accounts 3.72 lakh hectares area with an annual production of 1.70 lakh tonnes. Major factors that limit its productivity besides narrow genetic base are extreme susceptibility to biotic and abiotic stresses. The phyllody an important disease of sesame is caused by mycoplasma – like organism (Phytoplasma) and transmitted by leaf hopper (Vasudeva and Sahambi 1955).

In Saurashtra region of Gujarat state now a days phyllody become alarming problem especially in summer. So looking to the importance of disease resulting in major loss, attempts were made to manage this disease by vector control and this paper reports the results of such experiments.

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Management through vector control:

A field trial was laid out during *Kharif* 2008-09 and summer 2008-09 to evaluate efficacy of different insecticides separately for the control of vector(*Orosius albicinctus* Dist.) of phyllody on sesame cv Guj Til-2. The insecticides were applied at 35 and 50 days after sowing. Observation on vector population was recorded 1 day before spraying and at 1 and 7 days after spraying. The trial was laid out in the field of university farm. The field was ploughed well and fertilizers were applied as per recommendation. Weeding was done regularly and irrigation was given as and when necessary. The trial included the following 6 treatments replicated thrice in a randomized block design with accommodating 150 plants of plot size 4.5 m x 2.25 m.

1.	Control	No treatment
2.	Dimethoate	0.025% a.i. sprayed fortnightly
3.	Methyle-o-demeton	0.025% a.i. sprayed fortnightly
4.	Phosphamidon	0.03% a.i. sprayed fortnightly
5.	Imidacloprid	0.009% a.i. sprayed fortnightly
6.	Monocrotophos	0.05% a.i. sprayed fortnightly

Table 1 : Effect of systemic insecticides on vector population and incidence of phyllody (*Kharif*)

Treatments	Vector population (per sweep)*		Incidence of phyllody (%)	Seed yield (kg/he)
	1(DAS)	7(DAS)		
Methyl-o-demeton	0.0	1.3	1.2	380
Dimethoate	0.8	2.2	2.1	340
Phosphamidon	0.5	1.2	2.2	350
Imidacloprid	0.8	1.3	1.6	360
Monocrotophos	1.2	2.2	2.2	350
Control	3.6	4.2	2.6	330

* Average of five sweep

Table 2: Effect of systemic insecticides on vector population and incidence of phyllody (Summer)

Treatments	Vector population (per sweep) *		Incidence of phyllody (%)	Seed yield (kg/ha)
	1(DAS)	7(DAS)		
Methyl-o-demeton	0.0	1.6	1.6	210
Dimethoate	1.2	2.5	2.3	180
Phosphamidon	1.5	2.2	2.1	200
Imidacloprid	1.8	2.3	1.9	205
Monocrotophos	1.6	2.5	2.5	190
Control	4.3	6.2	2.9	180

* Average of five sweep

The spray fluid was adjusted according to crop stage between 300 to 500 litres per hectare and same trial was repeated during summer season.

Since it is persistent type of relationship, protection against insect vectors during the growth of the crop is one of the important strategies to manage the disease. Result of field trial indicated that out of five insecticides, application of methyle-o-demeton @ 0.025 % significantly reduced the vector population in both the seasons. The percentage of phyllody was lower in methyle-o-demeton treated plants (1.2 and 1.6 %) than in the control (2.6 and 2.9 %) during *Kharif* and summer season, respectively. Same treatments also checked the phyllody incidence for further spread in both the seasons. Application of methyle-o-demeton also increased seed yield (380 and 330 kg/ha) as compared to check(210 and 180 kg/ha) during *Kharif* and summer season, respectively (Table 1 and 2).

Despite wide interest in chemotheraphy of plant phytoplasma disease, no effective mycoplasmacical agent that can cure the disease completely has yet been found (Raychaudhuri *et al.*, 1988). In practice, control of the disease is by prophylactic treatments rather than cure of affected plants. Also, a schedule needs to be worked out in relation to the appearance of vectors along with timely application of systemic insecticides for keeping the plants free from the disease. Under these circumstance development of resistant or tolerant variety would be best. But no any cultivars found 100 per cent resist or tolerant to phyllody.

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