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## Distribution of sesamum phyllody infected by phytoplasma in Latur district, (Maharashtra)

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**Abstract**

Sesamum or Til (*Sesamum indicum L.*) is belong to family Pedaliaceae. Sesamum is one of the oldest oilseed crop grown all over the world. Among the various states in India sesamum phyllody much prevalent in Maharashtra state especially Marathwada region. Present investigation carried out in Kharif season during the year 2017 for studying symptoms on farmers field and distribution of sesamum phyllody in Latur district. The incidence of sesamum phyllody in Latur district ranged from 22.60 per cent to 31.20 per cent. Phyllody infected plant produce various types of symptoms mainly flowers converted into leaf like structure, floral virescence, floral proliferation, witches broom, shoot apex fasciations, stunting growth of infected plants, sepal and petals converted into leaf like structure are the most common symptoms are observed on farmers field.

**Keywords:** Sesamum phyllody, distribution, Latur district

**Introduction**

Sesamum is a warm weather crop and is often grown under marginal or stressed conditions. Sesamum is very important crop due to its qualities and nutritive values. Sesamum seeds are rich source of oil and protein. Its oil content generally varies from 46 to 52 per cent and protein about 20 per cent. Sesamum crop seeds used for baking, candy making and other industries. Sesamum seeds are store house of energy and very rich in vit. E, A, B complex and minerals like calcium, phosphorous, iron, copper, magnesium, zinc and potassium. Because of high yield and quality of oil, sesame is often called as the "Queen of oil seeds". (Weiss, 1971)<sup>[7]</sup> Phyllody of sesamum is phytoplasmal disease producing various types of symptoms such as flowers converted into leaf like structure, floral virescence, floral proliferation, witches broom, shoot apex fasciations, stunting growth of infected plants, sepal and petals converted into leaf like structure etc and it is transmitted by leaf hopper, graft and dodder.

Due to sesamum phyllody, various yield losses in sesamum crops is observed. Yield losses up to 34 per cent or even 100 per cent, in case of severe incidence (Sarwar and Haq, 2006)<sup>[5]</sup>. It has been observed that, 1 per cent increase in disease incidence reduced yield by 8.36 kg/ha (Maiti *et al.* 2008)<sup>[4]</sup>.

In Marathwada region of Maharashtra state the incidence of sesamum phyllody are increased day by day with increase in area and reduces more yield losses. Looking the importance of disease following field experiment carried out in Latur district and presented in paper.

**Material and Methodology**

To know the occurrence and distribution of phyllody disease of sesamum, a roving survey of sesamum fields at 50 per cent capsule forming stage in Latur district was undertaken during Kharif, 2017. The survey for sesamum phyllody disease was undertaken in part of five tehsils viz., Latur, Nilanga, Udgir, Ahmedpur and Chakur. The disease diagnosis in the field was based on typical symptoms observed on farmers field. The per cent disease incidence was recorded at a random on different locations in the field by counting total number plants and number of plant showing phyllody disease symptoms using the formula given below.

$$\text{Per cent disease incidence (\%)} = \frac{\text{No. of plants infected}}{\text{No. of plants observed}} \times 100$$

**Result and Discussion**

Results from table 1. Revealed that, sesame phyllody disease was widely distributed in all the five tehsils of Latur district with varting symptoms (plate 1). The incidence of the disease was found varying from location to location in the district and it was ranged from 22.60 to 31.20

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per cent with overall mean of 27.36 per cent. Minimum disease incidence was recorded in Vasangaon village of Latur tehsil. Maximum disease incidence was recorded in Talegaon village of Ahmedpur tehsil. Highest average disease incidence was recorded in Chakur tehsil (31.20 %) and this was followed by Nilanga (29.60 %), Ahmedpur (28.2%), Udgir (25.20%) and Latur (22.60 %). Comparatively minimum average disease incidence of 22.60 per cent was recorded in the Latur tehsil (fig.2)

Various types of symptoms are observed on farmers field (plate 2) for disease diagnosis such as flowers converted into leaf like structure, floral virescence, floral proliferation, witches broom, shoot apex fasciations, stunting growth of infected plants, sepal and petals converted into leaf like structure etc. On the basis of this symptoms disease diagnosis on farmers field are done.

Similar symptoms on sesame phyllody was reported by Khan *et al.* (2007) [3]; Singh *et al.* (2008) [6]; Akhtar *et al.* (2009) [1].

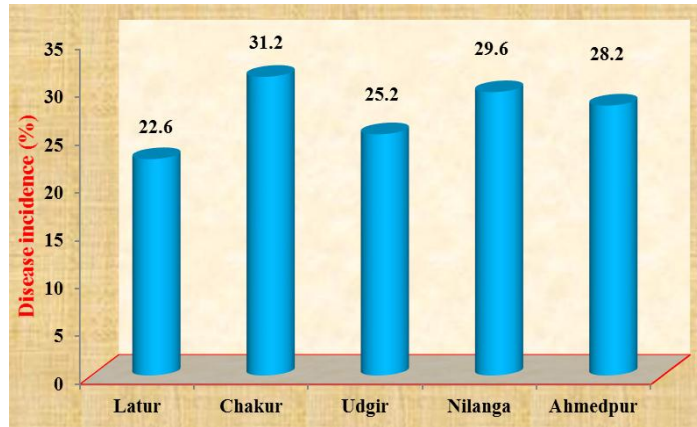
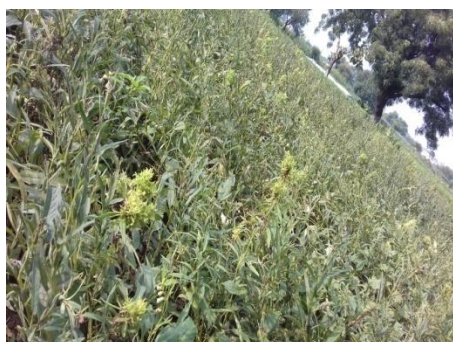


Fig 2: Occurrences of phyllody disease of sesamum in Latur district

Table 1: Sesamum phyllody incidence in Latur district, during Kharif, 2017

S. No.	Tehsils	Villages	Disease Incidence (%)	Avg. Disease Incidence (%)
1	Latur	Murud	23	22.60
		Babalgaon	22	
		Vasangaon	18	
		Chikurdi	29	
		Kolpa	21	
2	Chakur	Latur Road	33	31.20
		Jawalga	29	
		Chakur	34	
		Ghaneri	28	
		Nalegaon	32	
3	Udgir	Malkapur	19	25.20
		Islampur	22	
		Digras	30	
		Kumtha	25	
		Loni	30	
4	Nilanga	Shirur	25	29.60
		Loni	34	
		Nitur	33	
		Masalga	32	
		Kasarsirsi	24	
5	Ahmedpur	Nandur	25	28.20
		Mogha	28	
		Talegaon	37	
		Waligaon	19	
		Shirur tajband	32	



Babalgaon



Malkapur



Kolpa



Latur Road



Digras



Nitur



Talegaon



Nandur

**Plate 1:** Various types of symptoms observed during survey of Latur district



Floral proliferation



Floral virescence



Flower converted into leaf like structure



Drying of affected flower



Stunting growth of Phyllody infected plant

**Plate 2:** Symptoms observed in farmers field during surveying

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