

A survey on incidence of root diseases of mulberry

Mulberry (*Morus alba* L.) is mostly grown as monocrop to produce leaf for conducting silkworm rearing. Due to repeated harvesting of leaf the soil nutrients gets depleted and makes the plant vulnerable to soil borne diseases. Among them, root rot and root knot diseases caused by *Meloidogyne incognita* and *Fusarium oxysporum* respectively are the major root diseases. The extent of damage in terms of leaf yield loss is 10-12 %. The present survey was taken up in Chamarajanagar district to assess the incidence of root diseases.

The study was conducted in 262 mulberry gardens covering 45 villages during the year 2007-09 in four taluks of Chamarajanagar district (Chamarajanagar = 80, Gundulpet = 67, Yelandur = 24 and Kollegal = 91) by adopting random sampling method.

The details of information obtained from survey are presented in Table 1. The survey indicated that 4 gardens in Chamarajanagar and 7 gardens in Gundulpet were affected by root rot disease and the disease incidence works out to be 5 % and 10.45 % respectively. All the mulberry varieties available with the sericulturists (Local, K₂, S₁₃ and V₁) were affected by root rot disease. Similarly both the types of garden (rainfed and irrigated) and spacing followed by farmers (90 cm x 90 cm, (150 cm + 90 cm) x 60 cm) was affected by root rot disease. It was also found that none of the garden in the district was affected by root knot disease. The present observation confirms the earlier survey works of Hirata, 1971; Govindaiah, *et al.*, 1994; Philip *et al.*, 1997 and Sharma and Sarkar, 1998.

A demonstration was conducted at Hanamanapura of

Table 1. Details of survey on root rot and root knot disease

Criteria	Chamarajanagar (n = 80)			Gundulpet (n = 67)		
	No. of gardens affected	Root rot (%)	Root knot (%)	No. of gardens affected	Root rot (%)	Root knot (%)
I Type of soil						
a. Red soil	2	2.5	-	7	10.45	-
b. Black soil	2	2.5	-	-	-	-
II Variety						
a. Local	-	-	-	1	1.49	-
b. K ₂	1	1.25	-	4	5.97	-
c. S ₁₃	-	-	-	1	1.49	-
d. V ₁	3	3.75	-	1	1.49	-
III Type of farm						
a. Rainfed	1	1.25	-	5	7.46	-
b. Irrigated	3	3.75	-	2	2.99	-
IV Spacing						
a. 90 cm x 90 cm	1	1.25	-	7	10.45	-
b. (150 cm + 90 cm) x 60 cm	3	3.75	-	-	-	-

Chamarajanagar taluk to create awareness about the root diseases and control measure recommended by Central Sericultural Research and Training Institute, Mysore. The technology component includes a) removal of soil from the pits, uprooting of dead plants along with roots and burning. b) application of mixture of Chetak (biocontrol), lime and bleaching powder (1:1:0.5 ratio) @ 50 g / pit followed by irrigation c) planting of new saplings dipped in 0.5 % solution of mixture for one hour with fresh soil followed by irrigation d) application of mixture to neighboring two-three rows and e) application of mixture for three times / year. Some farmers have taken up control measures and found that the technology is effective in combating the disease.

On the basis of number of gardens, number of plants in the garden and plants affected, the incidence of root rot was

Table 2. Incidence of root diseases

Taluk	No. of garden affected	Total area (Ac)	Total no. of plants	No. of plants affected	%
Chamarajanagar	4	9.75	51966	820	1.58
Gundulpet	7	5.00	23739	488	2.01

1.58 % and 2.01 % in Chamarajanagar and Gundulpet taluk respectively.

From the survey it can be inferred that the root diseases is not a serious problem in the study area. However to avoid any further spread and damage, regular interaction with field functionaries of Department of Sericulture, distribution of extension pamphlet and to include as one of the important topic in the farmers training programme conducted at sericulture training school of department of sericulture are considered as important activities in the follow up action.

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References

- Hirata, A., 1971, Distribution and seasonal fluctuation of nematode in mulberry fields. Japanese J. Nematol. 2, 20-22.
- Govindaiah, Dandin, S.B., Giridhar, K and Datta, R.K., 1994, Efficacy of different doses of neem oil cake on *Meloidogyne incognita* infesting mulberry. Sericologia, 34; 717721.
- Philip, T., Govindaiah, Bajpai, A.K., Nagabhushanam, G. and Naidu,
- N.R. 1997, A preliminary survey on mulberry diseases in South India. Indian J. Seric., 34; 137-139.
- Sharma, D.D. and Sarkar, A., 1998, Incidence and intensity of species/ races of root knot nematode associated with mulberry under different farming systems and soil types in Mysore region, Karnataka State, India. Indian J. Seric., 37, 137-141.