



Effect of Organics on Incidence of Tobacco Mosaic Virus in Bidi Tobacco

Key words : Bidi tobacco, Panchgavya, Quality parameters, Viroson.

In field management studies during 2006 at ARS, Nipani, application of viroson at 2 ml per lit was found effective in reducing the TMV incidence. Indigenous products panchagavya, cow urine and butter milk were on par. Among plant extracts, bougainvillea leaf extract recorded minimum incidence. In host plant resistance studies, none was found resistant to TMV.

India occupies second place in area and third place in production accounting for 10 per cent of world area and about 9 per cent of tobacco production by using just 0.3 per cent arable land. Bidi tobacco is grown as a rainfed crop mainly on heavy to medium soils of Nipani tract of Belgaum district. Tobacco is a source of medicine, pesticide and organic acids. Bidi tobacco suffers from many abnormalities caused by a wide range of pathogens viz., fungi, nematodes, bacteria, viruses, flowering plant parasites and phytoplasma (Lucas, 1975). The losses due to these diseases are estimated to be in the range of 5 to 15 per cent depending on their intensity. Among all virus diseases, tobacco mosaic caused by *Tobacco mosaic virus* (TMV) causes leaf mosaic and severe crop losses in every tobacco tract of India. Identification of resistant sources for cultivation is a long term programme. Hence, in order to cater the immediate needs of the farmer, it has necessary to identify ecofriendly strategies for the management. Therefore the present study was conducted under natural epiphytotics of TMV to identify the eco-friendly and cheap management option for TMV in Nipani area.

A field experiment was laid out at the Agricultural Research Station (ARS), Nipani, University of Agricultural Sciences, Dharwad the efficacy of different organics were evaluated. The experiment was conducted in a randomized block design with 11 treatments and three replications with

cultivar A-119. Plot size of 4 × 7.5 m was maintained per treatment. The disease incidence was measured by no of plants affected to total no of plants. First spray was taken up at 25th and second spray at 40th day after planting.

Ten treatments were evaluated against tobacco mosaic (Table 1). At 45 days after planting, spraying viroson resulted in least disease incidence (22.1%) which was significantly superior over control (38.11%). However, this treatment was on par with the treatments involving Bougainvillea leaf extract, NPK + micronutrient butter milk and *Madhuca indica*, which recorded disease incidence of 22.8, 26.6 and 28.1 and 29.5 per cent respectively. Treatment vermin wash (36.4%) was least effective. At (80 DAP) the lowest disease incidence of 23.46 per cent was recorded in treatment comprising Bougainvillea leaf extract which was significantly superior over control. However, this treatment was on par with the treatments involving viroson and NPK+ micronutrient per cent incidence of 25.3 and 25.39 respectively. Spraying neem, recorded 32.04 % per cent disease incidence and was on par with neem leaf extract, cow urine, *Madhuca indica*, vermivash and panchagavya. Influence of organics on cured leaf yield showed no significant difference among different treatments (Table 1). Similarly, use of some plant extracts in management of *Tobacco mosaic virus* has been reported by Patel *et al.* (2000) and Simons *et al.* (1963). Use of bougainvillea leaf extract as virus inhibiting agent was reported by Verma and Dwivedi (1984).

Hence, the study clearly identified use of natural products such as viroson @ 2ml/lit or bougainvillea leaf extract and NPK+ micronutrient as better options for managing the TMV infections and also to produce quality bidi tobacco.

Table 1. Management of *Tobacco mosaic virus* through organics.

Tr. No.	Treatment	Incidence (%)	
		45 DAP	80 DAP
T ₁	Vermiwash(10%)	35.18	33.98
T ₂	Panchagavya(5%)	36.49	35.59
T ₃	Neem(0.3%)	32.87	32.04
T ₄	Cow urine (10%)	32.26	32.66
T ₅	Butter milk (5%)	28.14	33.71
T ₆	Neemleaf extract(5%)	30.95	32.45
T ₇	Bougainvillea leaf extract(5%)	22.82	23.46
T ₈	<i>Madhuca indica</i> (5%)	29.50	33.40
T ₉	Viroson(0.2%)	22.10	25.30
T ₁₀	NPK + Micronutrient	26.63	25.39
T ₁₁	Control	38.11	46.10
	SEm±	2.81	2.02
	CD @ 5%	8.29	6.51

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Department of Plant Pathology
College of Agriculture, Dharwad
University of Agricultural Sciences,
Dharwad- 580 005

B Sivaprasad
S Jahgirdar
A S Byadgi
S Kulakarni

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