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Effect of some plant extracts on growth of *Alternaria alternata* f.sp. *lycopersici,* the cause of alternaria blight of tomato

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Abstract

Aqueous extracts at different doses obtained from Datura, Neem, Tulsi, Madar, and Bel were tested in-vitro, for their effects on growth of Alternaria alternata f. sp. lcopersici. Extracts of Datura leaves was most effective followed by Neem, Tulsi, Madar, and Bel.

Key words- Aqueous extracts, *Alternaria alternata* f. spp. *Lycopersici* and Tomato blight

Introduction

Tomato (*Lycopersicon esculentum* Mill.) is the most important vegetable crop in India, suffers from several diseases. Alternaria alternata f. sp. lycopersici is very important disease of this crop. Under certain condition it has been observed to causes severe loss in yield. In an era of sustainable agriculture, it is obligatory to avoid the use of chemical. Rather bio-control technique needs to be evaluated and therefore, this study was taken for investigation.

Materials and Methods

Healthy fresh leaves of *Neem, Tulsi, Madar, Bel* and *Dhatura* were collected from the near by localities. The leaves were thoroughly washed before crushing them. Weighted amount of leaves were placed in pestle and crushed with mortar. The amount was adjusted by w/v. After crushing them thoroughly, the crude extract was filtered through muslin cloth. This was 100% crude extracts. It was heated at 40^0C for 10 minutes to reduce contamination (Jaganathan and Narasimhan, 1988).This crude extract further diluted to 20% concentration using sterilized distilled water. Different amounts (1-10 ml) were mixed in sterilized cooled PDA 20 Ml of this cocktail was placed in each Petri dish and allowed to solidify. There after 5mm disc of the actively growing fungus (7 days old) cut by sterilized cork borer was placed at the center of each plate. Every treatment had 3 replications. Medium mixed with sterilized water saved as check. The plate was incubated at 25-28 ^{O}C for 7 days and thereafter colony diameter measured.

Results and Discussion

The observation recorded in Table 1 revealed that extracts obtained from all the five plants at different doses used caused significant reduction in redial growth of the fungus while *Dhatura* leaves extract caused 32.5 to 38.5% inhibitions; the extract from *Neem* leaves caused 19 to 34% inhibition over check.

Extracts of *Tulsi* caused 8.5 to 21.75% reduction therefore, least effective. Almost similar observation has been made by Sharma (1992), Ali *et al*. (1992) and Lovang *et al*. (1998).

Table 1. Effect of different plant extracts on radial growth of *Alternaria alternata* f. sp. *lycopersici in vitro*.

S.N.	Plant extracts	Dose (ml.)	Average diameter of fungal colony (mm)	Inhibition over control (%)
1.	*Dhatura* leaves extract	10	22.8(28.52)	54.2
		5	23.1(28.72)	53.8
		2	23.9(29.26)	52.2
		1	24.2(29.46)	51.1
2.	*Neem* leaves extract	10	24.6 (29.73)*	50.8
		5	24.8 (29.86)	50.4
		2	25.0 (30.0)	50.0
		1	27.0 (31.30)	46.0
3.	*Tulsi* leaves extract	10	26.4(30.91)	47.2
		5	28.2(32.07)	43.6
		2	30.4(33.46)	39.2
		1	32.2(34.57)	35.6
4.	*Madar* leaves extract	10	31.5 (34.14)	37.0
		5	31.8 (34.32)	36.4
		2	32.6 (34.81)	34.8
		1	36.6 (37.22)	26.8
5.	*Bel* leaves extract	10	36.1 (36.92)	27.8
		5	37.0(37.46)	26.0
		2	38.2(38.17)	23.6
		1	39.2(38.76)	21.6
6.	Control		50	

C.D. at 5% level SE=0.43, C.D.- 0.91, Transferred values indicated in parenthesis

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