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Studies on fungal diseases of *Chlorophytum borivilanum*. Baker (Safed musli)

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Safed musli (*Chlorophytum borivilanum*) is an important medicinal plant of family Liliaceae. Dry roots are known as safed musli which contain a drug. It is used against diuretic, nutritive, urinary tract infection, general debility, impotency etc. It is considered as wonder drug in Indian systems of medicines due to its aphrodisiac and natural sex tonic properties. It is also used to cure weakness and male sterility. It is a supplementary therapy for blood purification, nervous disorders and some gynecological problems. Such commercially important plant is infected by fungal diseases *viz.*, responsible for decrease in yield; hence survey of fungal diseases was undertaken, which illustrates the different diseases of Safed musli.

Key words : Safed musli, *Chlorophytum borivilanum*, roots, fungal diseases

INTRODUCTION

Chlorophytum borivilanum (safed musli) is an important medicinal plant growing in forests of Madhya Pradesh, Gujarat, Rajasthan and Maharashtra. It is a rhizomatous herb (Singh and Chauhan, 2003). Leaves are sub erect and lanceolate. Flowers are star like. The roots are fleshy in bunches and measures upto 7-12 cm. in length. It is 3-4 months crop. It is cultivated in June-July. A well developed plant bears an average 2-5 inflorensce. Each inflorensce contains 20-25 flowers. Seeds have a dormancy period of about 10 months and very low germination due to which cultivation is mostly carried out by tubers (Oudhia, 2000).

MATERIALS AND METHODS

The infected leaves were collected from fields of Parbhani and Nanded districts in Marathwada region. Disease severity index was calculated by using 5-point scale as given by Mayee (1984).

Isolation and purification:

The isolation and purification was carried as per methods given by (Aneja, 1993). The fungi were isolated by using Potato-Dextrose agar medium. The infected leaves with spots are cut into pieces and inoculated on PDA medium under sterilized condition (Verma, Upadhyay, *et al.*, 2007). These plates were incubated for 2-4 days at 27 ± 3^0C temperature for growth of fungal pathogens.

Identification of isolated fungi:

The different fungi were identified on the basis of culture characters, fungal reproductive structures *i.e.* observed under microscope for the morphological characters. Fungal pathogens were identified by using standard literature (Alexopoulous, 1996 and Barnett and Lilly, 1951).

After identification the slants (Zapek-Dox-Agar) medium was made and these pathogens were grown on slants and used when required.

Pathogenicity:

Pathogenicity test was proved by Simple Detached Leaf (SDL) technique as described by Mayee (1984). Two sterilized Petridish were taken and filter papers of that size were kept in it. Two glass rods were kept in Petridish. Leaves were inoculated with fungal cultures and kept in Petri dish in such a way that petiole/midrib touches the blotter paper and incubated at room temperature. To maintain moisture for disease development water was added in the plates time to time. After 2-3 days disease symptoms were initiated and develop in 15 days.

Disease Severity Index (DSI):

Disease severity Index was calculated by using 5-point scale (Mayee *et al.*, 1984). For this 100 leaves were collected from the field. On the basis of infection percentage the leaves were categorized as given below:

Grade	-	Per cent Infection
0	-	Healthy leaves
I	-	1-25% Infection
II	-	26-50% Infection
III	-	51-75% Infection