

Rajnigandha a new host of *Fusarium* sp. from Bahraich-A New Report

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Abstract

Polianthes tuberosa L.(Rajigandha) is an important medicinal plant possessing diuretic emetic and anticonorrhoeic properties.Plants of *P.tuberosa* growing in pots were found suffering from a leaf spot disease.Oval to elongated spots were produced throughout the leaf blade.The spots remained broader in the center and pointed at the ends.Light brown spots are surrounded by dark brown spots. Spots may also coalesce to form large irregular spots.Isolation from the disease tissue yield a species of *Fusarium*.Pathogenicity test was proved to be positive when carried out by spray inoculation on healthy potted plants of *P. tuberosa*, positive. On the bases of cultural characters and morphology of vegetative and reproductive bodies,the isolated species from *P.tuberosa* was identified as *Fusarium solani*.Search of the available literature revealed that *P. tuberosa* is a new host for *F. solani* which is being first reported from Bahraich district (U.P.)

Introduction

Rajnigandha (*Polianthes tuberosa* L.,Eng. -Tuberosa;Hindi -Rajnigandha,Gulshaba,Family-Agavaceae) is a herb native to Mexico grown as an ornamental for its white ,fragment flowers.It is an important ethnomedicinal plant possessing diuretic emetic and anticonorrhoeic properties.The plant is grown in pots in family gardens,parks,nurseries and government gardens.In Nov.2006 during our routine gardening activities in morning we observed that some plants were suffering from some foliar spots.The no. of spots and size per leaf was gradually increasing significantly.The observation resulted a curiosity to know about the microbe responsible for the leaf spot.The disease on Rajnigandha was a foliar spot disease so it generate a curiosity as the leaves are known for suitable habitat which provide ample surface area and nutritional supply to the fungal pathogen for its overall growth.Keeping this view in our mind,authors surveyed the gardens of housing colonies,parks,nurseries and government gardens and infected specimens were collected and gone through for the detailed study for the disease symptom.

Material and Methods

The collected specimens were pressed and dried by routine herbarium technique as described by Jain and Rao(1978).The fresh infected leaves were collected ,hand cut section and scrap mount were prepared of infected parts in lactophenol and cotton blue as described by Kamal *et.al.*(2003).

For pathogenicity test the isolated fungus was cultured on PDA and its pathogenicity test was done on healthy potted plants by spray inoculation of sporulating mass in aqueous solution as described by McCallum and Tekauz (2002).

Results and Discussion

The infected plants showed oval to elongated spots produced throughout the leaf blade.The spots were remained broader in the centre and pointed at the ends.Light brown spots are surrounded by dark border.Spots merge to form a large irregular patch.The microscopic examination of slides prepared showed that the causal organism of the leaf spot is a fungus having microconidia 2.5-5 micron;macroconidia 5-14 micron in size.The consultation of monographs showed that the tested fungus is *Fusarium*

solani(Mart.)Sacc. The pathogenicity test by spray method was positive.Latter the fungus was confirmed by Prof.Kamal, Emeretus Professor in Botany,D.D.U. Univ. of Gorakhpur,Gorakhpur(U.P.)

During pathogenicity test the first spot appeared after 10 days of spray which latter covered about 60% area of leaf blade within 15 days in form of irregular patches.This system is latter followed by infection on leaf sheath and spike.

The severity of spot causes defoliation.Leaf spots are numerous,large and irregular which cause a considerable reduction in the photosynthetic area of leaf.The inhabiting fungi interfere with the physiology of the host and host as well as pathogen produces toxins which may degrade the ethnomedicinal quality of the plant.The fungal pathogen reduces the productivity of host. Ahir *et.al.*(2006) has also reported *F.solani* on Rajnigandha leaf blades only causing less damage.

So some important strategies must be adopted for the conservation of *Polianthes tuberosa* from plant pathogen considering its importance in garden as well as its use in green herbal medicine system.The plants are still under observation and further study will be done to save the plant from loss.

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