Management of Rhizoctonia Root Rot of Cauliflower Through IDM Practices

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SUMMARY

Rhizoctonia root rot due to *Rhizoctonia solani* causes much damage to the crop in curd production of cauliflower. To manage the disease through IDM practice, an experiment was conducted with six treatments of chemicals and biocontrol agents for seed treatment, seedling treatment, nursery treatment and soil treatment with four replications. The seed treatment with carbendazim @ 2g/kg seed, raising seedling in solarized beds, crop raising in green manure field + neem cake 25kg/ha with soil treatment by *Trichoderma viride* @ 2 kg/ha gave the lowest disease intensity of 11..27% with maximum curd yield 299.58q/ha and highest per cent disease control (51.00) over control treatment.

Key words : Flusilazole, Validamycin, *Trichoderma viride*, Cauliflower, Rhizoctonia root rot, *Rhizoctonia solani*

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Cauliflower (*Brassica oleracea* L. *var. botrytis*) is an important and popular vegetable in India. India is the largest producer of cauliflower in the world and apart from India, the other major producers of cauliflower in the world are China, France, Italy, U.K, U.S.A., Spain, Poland, Germany and Pakistan. It is a major vegetable crop grown mainly in states like Bihar, Uttar Pradesh, Orissa, West Bengal, Assam, Haryana and Maharashtra.

Severe lasses to the cauliflower are caused by different fungal pathogens such as *Pythium, Peronospora parasitica, Alternaria brassicae, Sclerotinia sclerotiorum*. But *Rhizoctonia solani*, is responsible for reduction and uncertain yield of cauliflower. The pathogen is soil borne in nature. Most of the cauliflower varieties are highly susceptible to Rhizoctonia root rot and to minimize the infection of the fungus, the present investigation was laid out.

MATERIALS AND METHODS

The experiment was laid out at the research farm of Department of Vegetable Science, Chandra Shekhar Azad University of Agriculture and Technology, Kanpur. The experiment was conducted in Randomized Block Design (RBD) with six treatments along with four replications. The cauliflower variety Snowball-16 was taken for transplanting to know the control measures for disease. Crop was planted after thorough mixing of organic manure 150q/ha, phosphatic fertilizer (50kg P_2O_5/ha), potassic fertilizers (50 kg MOP/ha) and half nitrogenous fertilizer (62.5 kg/ha) in the soil. Remaining dose of nitrogen was applied as broad cast at 30 days and 60 days after transplanting. The soil of experimental plot was sandy loam in nature, well drained with low CN ratio. The experiment was conducted in sick plot in both the years (2006-07 and 2007-08). Seed, seedling and soil treatment by chemicals and biopesticides were done as described by Lifschitz *et al*. (1985). Solarization of beds was done as described by Pullman *et al.* (1981). Two foliar sprays of chemicals and bioagent was done at 45 and 60 days after transplanting. Observations on disease intensity was recorded in both the crop seasons. The treatments *viz*., seed treatment by carboxin @ 2g/kg of seed+2 need based sprays of Flusilazole (0.1%); seed treatment by carbendazim (0.25%) + seedling dip in carbendazim solution (0.1%)+2 need based sprays of validamycin (0.1%), seed treatment by carbendazim (0.1%) + removal of infected seedling +2 sprays of cow dung (5%) + cow urine (5%), seed treatment by carbendazim (0.25%)+ raising of seedling in solarized beds+crop rasing in green manure + neem cake 25 kg/ha applied in plot + soil treatment by *Trichoderma viride* 2 kg/ha and seed treatment by *Trichoderma viride* (0.5%)+ soil treatment by *Trichoderma viride*, 10g/kg FYM/ m^2 area+ 2 sprays of cow urine (5%) at 15 days interval from 7 days after transplanting were used.

RESULTS AND DISCUSSION

Disease intensity :

Perusal of results depicted in Table 1, revealed that significantly ($P<0.05$) lower disease intensity was recorded in seed