Etiology and Management of Corm Rot of Saffron in Kishtwar District of Jammu and Kashmir, India

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Abstract

Saffron (Crocus sativus L.) is an important low volume, high value perennial crop known for its medicinal value. Several biotic and abiotic factors are known for their adverse affect on the saffron cultivation. Among the biotic causes, corm rot is the most destructive disease of saffron world over. It is severely damaging saffron fields of Kishtwar District of Jammu and Kashmir, India which is a major saffron growing area of Jammu province. An integrated disease management strategy for corm rot using fungicides and biological control agent Trichoderma viride, was evaluated. To record the status of crom rot, extensive survey was conducted during 2006 - 2007 in 23-major saffron growing areas of Kishtwar district. Maximum disease incidence was recorded in Upper Pochhal (33.7%) whereas the lowest was recorded in Naghani (6.6%). Four fungal pathogens viz., Fusarium oxysporum f. sp. gladioli, Fusarium solani, Penicillium corymbiferum and Sclerotium rolfsii (new report) were found associated with corm rot. It was observed that T. viride reduced the growth of F. oxysporum f. sp. gladioli, Fusarium solani, S. rolfsii and P. corymbiferum by 88%, 76%, 63% and 74%, respectively. Out of nine chemicals tested, carbendazim 50 WP proved highly effective in checking the mycelial growth of F. oxysporum f. sp. gladioli even at 5 ppm. In field experiment, the soil application of talc based formulation of T. viride @ 2.5 kg/ha and corm treatment with carbendazim @ 0.2% were found effective in reducing the disease incidence and simultaneously ensured more germination as compared to control.

Key words: Saffron, corm rot, disease incidence, integrated disease management