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Title: VARIABILITY IN Rhizoctonia solani THE INCITANT OF BLIGHT IN MUNGBEAN & ITS BIOLOGICAL CONTROL

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Abstract: Web blight of mungbean is one of the major diseases which incur huge loss and holds back the mung bean production. A comprehensive study was made during Kharif 2011-12 on the characterization of *R.solani* on the basis of morphology, virulence, reaction of pathogen on differential host and eco friendly management of the disease. The surveillance made revealed that the blight of mung bean was prevalent in all the places visited. The disease incidence varied from 33.10 per cent to 53.10 per cent in different localities. The maximum disease incidence of 53.10 per cent recorded from experimental plots of R.A.C., Kanke and the least disease incidence was recorded from Bero, Ranchi. The pathogen *R.solani* was isolated from infected plants obtained from different locations and designated as RS 1 to RS 9. In the morphological study, all the isolates of *R.solani* shared typical characters like right angle branching near the distal septum of the young vegetative hyphae, formation of dolipore septum, no clamp connection and no conidium except moniloid cells. All the nine isolates grown on PDA showed differences in mycelial growth. RS 8 isolate showed highest growth rate after 72 hours of observation. Among nine isolates, five exhibited aerial growth of their colonies, four isolates RS 4, RS 6, RS 7 and RS 9 produced sub-aerial colonies. The colony colours of RS 2, RS 6 and RS 8 isolates were brown while that of isolates RS 3, RS 5, RS 7 and RS 9 were white. RS 1, RS 2, RS 3, RS 5, RS 6 and RS 8 isolates grew fast as well as RS 4, RS 7, RS 9 grew moderately. Morphological studies of *R.solani* on four solid and liquid broth medium was taken PDA is the best solid medium for *R.solani* followed by Czapek's medium while in case of Czapek's broth is best for growth of *R.solani*. Sclerotial characters indicated that in 3 isolates sclerotia were located on surface of colony, sub-surface location of sclerotia was observed in RS 6 and RS 9 isolates and in RS 1, RS 3, RS 4, RS 7 sclerotia were embedded inside medium. Sclerotial size was invariably macro except RS 2, RS 6 and RS 9. The maximum sclerotia size 2.960 mm was observed in PDA medium. Out of 15 mungbean varieties, one HUM-1 showed resistant reaction, one PDM 54 showed moderately resistant reaction, six variety showed susceptible reaction and seven variety showed highly susceptible reaction. In poisoned food technique on effect of different fungicides Bavistin and Vitavax @ 100 ppm showed best result with minimum mycelial growth of 11.66 mm for RS 1 and RS 5 isolates. The dual culture experiments on effect of different bioagents ThD was most effective in inhibiting the growth of pathogen. In field condition against blight soil application of precolonized *T.harizianum* + seed treatment with Bavistin @ 5 q/ha+ 2g/kg of seeds showed best result with minimum disease severity 33.31 per cent and maximum yield of 11.86 q/ha. Seed treatment with Bavistin @ 1.0+2.5g/kg seed recorded minimum disease severity (28.03%), maximum disease control (61.04%) and yield (9.52Q/ha) and was at par with chemical treatment. Foliar application of Bavistin @ 2.0g/l recorded highest yield (11.33q/ha) with minimum disease severity (24.99%) and maximum disease control (65.08%). In integration trial, different combination of local isolates as well as Delhi isolates of *T.harizianum* + Bavistin (5q+2g/kg seed treatment) provided 46.63 to 55.91 per cent disease control over check.

Description: VARIABILITY IN *Rhizoctonia solani* THE INCITANT OF BLIGHT IN MUNGBEAN & ITS BIOLOGICAL CONTROL

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