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Title: VARIABILITY IN *Fusarium oxysporum* f. sp. *ciceri* AND MANAGEMENT OF CHICKPEA WILT

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**Abstract:** Chickpea (*Cicer arietinum* L.) is an important pulse crop grown in Jharkhand state. Wilt of chickpea caused by *Fusarium oxysporum* f. sp. *ciceri* is responsible for heavy reduction in plant stand and yield across the state. Survey was carried out at different location of Jharkhand during, 2005-06 and 2006-07 and the disease was noticed in all locations with severity varying from 39.90-54.04 %. The disease appeared at all growth stages. Drooping and yellowing of lower leaves were the first symptom of the disease. Root and stem of the wilted plants clearly show internal discoloration of the pith and xylem when they were split vertically. Vascular bundles were choked with the hyphae of the fungus. Mycelium of the fungus was aerial variable in colour, brown, dark brown and reddish brown. Micro, macro and intermediate conidia were found in all the test isolates. Chlamydospores were either terminal and/or intercalary in all the isolates. Based on cultural and morphological characters Ranchi, Dumka and Darisai isolates had more or less similar characters and can be kept in same group while Chatra isolate can be kept in other group. Based on disease reaction on international set of differentials isolates from Ranchi, Dumka and Darisai resemble Race 7 while isolate from Chatra falls into Race 4. When the plants were affected by pathogen at an early stage, it resulted in more wilting and caused heavy losses in yield in comparison to infection at later stages. Several resistant genotypes were identified in varietal screening of 81 and 141 genotypes/varieties during 2005-06 and 2006-07 respectively. Several resistant genotypes were found out which can be further used by plant breeder to evolve disease resistant variety of chickpea. Date of sowing influenced disease incidence and minimum disease incidence was observed when sowing was done in first week of November. Spacing could not reduce the wilt incidence of chickpea. Different oil cakes viz., Neem cake, Karanj cake, Mustard cake and FYM were used for management of chickpea wilt and application of Neem + Karanj cake @ 5+5 q/ha (1:1) gave best result. Among botanicals used as seed treatment Achook was found superior in reducing the disease incidence and increase in yield. Among the bio agents tested *Trichoderma harzianum* was found most effective in controlling the disease. In the trial on the use of chemical fungicides, Carbendazim and Carbendazim+ Mancozeb were found effective.

**Description:** VARIABILITY IN *Fusarium oxysporum* f. sp. *ciceri* AND MANAGEMENT OF CHICKPEA WILT

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