

A. Identification of disease complexes

Establishment of role of *Phytophthora* damping off and seedling blight in wilt complex

Damping off and seedling blight caused by *Phytophthora* has been one of the important factors for safflower mortality and loss of crop in seedling stage under high moisture. Disease samples showing early seedling damping off and leaf blight were used for pathogen isolation and identification. A total of 9 isolates of *Phytophthora* from different geographical areas were isolated. All the isolates were pathogenic and able to cause damping off and leaf blight on safflower seedlings. Morphological characterization (fig.2) and ITS sequencing revealed that the species associated is *Phytophthora nicotianae* but not the species *P. drechsleri* or *P. palmivora* as reported earlier.



Fig.1. *Phytophthora* affected safflower seedlings

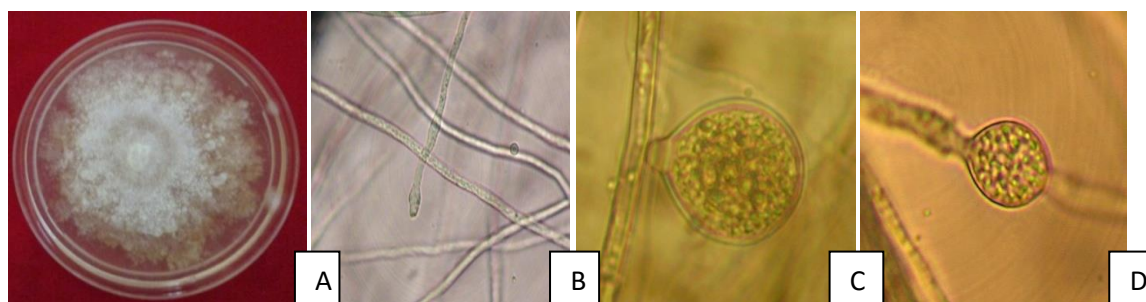


Fig.2: Morphological characters of *Phytophthora nicotianae*, A. Dense rosette spreading aerial mycelium, B. coenocytic hyphae, C. ovoid terminal sporangia with prominent papilla, D intercalary sporangium