Occurrence of *Fusarium* roots and secondary roots rots of almond trees due to humidity stress in different parts of central Iran

A. Heidarian[1],D. Ershad[2]

1- Plant Pests and Diseases Research Department, Agricultural Research Center of Shahre-e-Kord

2- Department of Botany Plant Pests and Diseases Research Institute, Tehran

During 1996-99 some damaging and destructing symptoms in the newly stablished almond orchard in the three state of Chaharmahal-Va-Bakhtiari, Isfahan and Yazd provinces were observed . Investigation showed that in most of these orchards soil was relatively rich in respect of food elements and furrow crown methods of irrigation were used , as tree foots were being located in the center of furrow crown and/or plots.As irrigation shows, electrical conduction and reaction of irrigating water as well as soil are not limiting factors and irrigation period of the orchard seldom changes from 9,12,14 to 16 days. In some cases during the peak hot summer days , the irrigation intervals may get delayed to even 20 days. In such orchard which usually have a light and sandy soil, due to the irregularities in the irrigation period, the humidity stresses are more probable and secondary roots are being rotten in the depth of 10-20 cm of the soil, turning to brownish in color which in acute situation may be seen on main roots as well. In orchards where vegetables and legumes (such as peas, lentil etc.)are grown the situation is further more critical. Sample collection and secondary root culturing with rotting symptoms of *Fusarium solani, F.oxysporum* and *F. compactum* with 41,32, and 27 abundance state respectively, shown that pathogenicity of selected isolates from the above mentioned species with culturing them in the liquid czapex medium and preparation of a suspension with 10^6 spore/ml concentration with 5 repeating on 6 months old seedlings after 3 humidity