

Study on quantitative changes of total phenol and protein in assessment of resistant muskmelon varieties in soil borne fungi in Sistan

Melon is one of the most important vegetable crops in the country that planting it is common in most parts of the country. Plant diseases every year in this sector are bringing considerable economic damage. The most important of this disease, is Damping off the that can be considered as a limiting factor in production of this crops. The reaction of 12 varieties of melon, including Gandah, Sfidak khatdar, Sfidak bekhat, Mollamosi, Nabijani, Shadegan, Zard evanaki, Moshi, Suski, Jajrood, Hajmolashahi and khaghani to the three soilborne pathogen fungi *Rhizoctonia solani*, *Macrophomina phaseolina* and *Monosporascus cannonballus*, has been evaluated in greenhouse conditions. In stage of assessment of resistance, this varieties to the *Rhizoctonia solani*, on the based Michereff *et al*, about *Macrophomina phaseolina* on the based of Pahlavani and Razavi and about of *Monosporascus cannabulus* on the base of Crossby has been resistance evaluated. This experiments was design in completely Randomized. In the resistance evaluation varieties to the fungus *Rhizoctonia solani* results showed that varieties Sfidak khatdar and Ghandak were highly resistant while cultivars Sfidak bekhat, Mollamosai and Hajmashallahi were moderately resistant, cultivars Nabijani, Zard evanaki, Shadgan, Suski and Jajrood were susceptible and varieties Moshi and khaghani were highly susceptible. In the resistance evaluation varieties to the fungus *Macrophomina phaseolina* varieties Sfidak khatdar and Sfidak bekhat were moderately resistant, while varieties Nabijani, Ghandak, Mollamosai, Moshi, khaghani and Zard evanaki were susceptible and varieties Hajmashallahi, Shadgan, Suski and Jajrood were highly susceptible. And in the resistance evaluation varieties to the fungus *Monosporascus cannonballus*, varieties Sfidak khatdar, Sfidak bekhat, Nabijani, Ghandak, Mollamosai and Hajmashallahi were moderately resistant, while varieties Moshi, Shadgan, Suski and Jajrood were susceptible and varieties Zardevanaki and khaghani were highly susceptible. In the next phase of this study for measure of quantitative changes of protein, using of Bradford method, about total phenol on the base of Salari *et al*, Mohammadi and Kazemi, Etebarian and Sahebani, and about of peroxidase on the method of Salari *et al* and Ghanati *et al* in all the varieties to the fungus in times of 0,24,48 and 72 hour after inoculation was performed. This experiments was design in completely Randomized The results of this stage show that in relative to each three fungi in the amount activity of peroxidase enzyme and production of phenolic compounds and increase protein in varieties resistant to sensitive and semi-sensitive varieties, significant differences were seen. Also significant differences between increase of activity of these compounds with occurrence of resistance phenomena in varieties are observed. About of *Rhizoctonia solani* results of the quantitative change in protein, phenol compounds and peroxidase showed that synthesis of these compounds in the most susceptible varieties (Moshi) in any time to their control have not the increase significant, but, these compounds produced significant increase in the most resistant varieties (Sfidak khatdar) to their control was in time 24,72 and 24 hour after inoculation that respectively is located in the groups of ab and lmno and ab. About of *Macrophomina phaseolina* results of the quantitative change in protein, phenol compounds and peroxidase showed that synthesis of this compounds in most susceptible varieties (Jajrood) in any time to their control have not the increase significant, but, these compounds produced significant increase in the most resistant varieties (Sfidak khatdar) to their control was in time 24,72 and 72 hour after inoculation that respectively is located in the groups of s and hij and rst. And about of *Monosporascus cannabulus* results of the quantitative change in protein, phenol compounds and peroxidase showed that synthesis of these compounds in the most susceptible varieties (khaghani) in any time to their control have not the increase significant, but, these compounds produced significant increase in the most resistant varieties (Nabijani) to their control was in time 24,72 and 24 hour after inoculation that respectively is located in the groups of x, fgh and a.

Key word: Protein, Phenol, Peroxidase, Soilborne fungi



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