Fungal Diseases


Garden cress, Lepidium sativum L., is an important winter green crop grown in Iraq. The green leaves of this cruciferous plant are commonly used as salad, a component of packaged salad products and as a garnish for foods. This crop is cultivated in all governorates of Iraq for its nutritional qualities, health benefits and compatibility in planting rotations (1). Surveys conducted earlier on garden cress in Iraq showed that white rust and Fusarium wilt were the common fungal diseases on this crop (2). During early spring/March of 2007, a new foliar disease of garden cress was observed in several farms in the Diwaniya region of Iraq. There are some other green crops, such as celery, lettuce and 5 crucifers i.e. cauliflower, cabbage, radish, rape and turnip cultivated around the garden cress fields. Symptoms appeared as small, irregular, yellow to light brown spots on the lower leaves, which sometimes expand into larger spots. Infection and disease development were favored by cool, wet weather and the fungus attacks garden cress plants at all growth stages. Many studies showed that downy mildew disease is favored by cool temperatures, with an optimum range of 16-25°C, and high relative humidity of 75-85%. The downy mildew can be recognized initially by the presence of a white, downy type of mold on the underside of lower leaves. Later, a slight yellowing occurs on the corresponding upper surfaces of the leaves. These symptoms were followed by the appearance of sporangiophores and sporangia, usually on lower surface of the leaves. Sporangiophores were dichotomously branched at acute angle with taper curved pointed tips on which sporangia were borne. Sporangia were ovoid, measuring 19–27 μm long and 16–25 μm wide. The causal agent of the disease was examined in the Mycology and Microbiology labs, Colleges of Sciences and Medicine, University of Al-Qadisiya and identified as Peronospora parasitica (Pers.) Fr. (3). Results revealed that disease incidence in different fields ranged between 14–29% (average 21.5%) and the rate of infected leaves/plant ranged between 44–75% (average 59.5%) which led to 27% yield loss. Pathogenicity has been tested by inoculating 25 cress plants (3 weeks old) with sporangia suspension 2 x 10^3 sporangia/ml (Sporangia in this species behave as a conidia because in germination it give a germ tubes, whereas in the other species of this fungus it give zoospores). Twenty five non-inoculated plants were maintained under the same conditions served as the control.

أمراض فطرية


مجلة وقائية النباتات العربية, 25: 181-182.

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Plants were maintained in a plastic house at air temperatures ranging between 15–26 ºC and 80–90% relative humidity (4). The fungus was highly virulent on cress plants and following inoculation with two humid nights, symptoms developed within two weeks and the fungus was observed on inoculated plants only. Downy mildew, caused by *P. parasitica*, has previously been reported in Iraq on other cruciferous crops i.e. cabbage, radish, rape and turnip (2) and also on some crucifers in many other countries over the world. According to the available surveys and literature, this is the first report of *P. parasitica* on garden cress in Iraq and probably in the world. This finding calls for more information about disease distribution in this region, and for further work to find the most effective way to control the disease.

References
