

NEW DISEASE REPORT

First report of cercospora leaf spot on Swiss chard caused by *Cercospora beticola* in Turkey

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In February and November 2002, a severe outbreak of a foliar disease was noted in the main producing Swiss chard (*Beta vulgaris* var. *cicla*) areas in the Hatay province of Turkey. In this region, disease was observed in 90–95% of fields inspected. Symptoms began as small circular, light brown spots with definite dark brown border on both sides of the leaf. The circular spots increased in size (up to 4–6 mm in diameter), developing into depressed lesions, which were brownish in colour and bordered by a purple margin. As lesions matured, the centre of the spots became whitish grey to black, due to the production of conidia and conidiophores.

Microscopic examination of the whitish-grey lesions revealed the presence of tiny, black stromata within the leaf substomatal cavities. The stromata produced dense fascicles of conidiophores (up to 35 conidiophores per fascicle) that emerged through the stomata. Conidiophores were simple, one to three septate, pale brown at the base but subhyaline at the apex, straight ($3.5\text{--}4.5 \times 20\text{--}65\text{ }\mu\text{m}$), unbranched and slightly attenuated towards to apex. Conidia, borne singly, were filiform, hyaline, pluriseptate (five to 18), nonconstricted at the septa, slightly curved, subtruncate at the base, obtuse to subacute at the apex and varying considerably in length ($2.5\text{--}4 \times 40\text{--}125\text{ }\mu\text{m}$). The causal organism was identified as *Cercospora beticola* based on morphological characteristics (Kim & Shin, 1998). A single-spore isolate was cultured on V-8 juice agar. Pathogenicity tests were conducted on 4-

week-old chard seedlings (cv. Zilk), by spraying the leaves with a conidial suspension (10^4 spores per mL). Inoculated plants were kept in a moist chamber (100% RH) at 25°C for 3 days, then moved to a growth chamber at 26°C with a 16-h photoperiod. Many small elongated lesions (1–2 mm wide) were observed on inoculated leaves 5 days after treatment. After 21 days, these developed into lesions similar to those produced on naturally infected leaves. The pathogen was reisolated from inoculated leaves. This is the first report of *C. beticola* on Swiss chard in Turkey. Previous reports list *C. beticola* on Swiss chard in Egypt (El-Kazzaz, 1977) and Korea (Kim & Shin, 1998). The fungus was also reported on several host plants such as cultivated and wild *Beta* spp., spinach and lambs quarter (Nyvall, 1989; Rossi *et al.*, 1995).

References

- El-Kazzaz MK, 1977. Cercospora leaf spot disease of chard in Egypt. *Egyptian Journal of Phytopathology* **9**, 81–2.
- Kim JD, Shin HD, 1998. Taxonomic studies on *Cercospora* and allied genera in Korea (II). *Korean Journal of Mycology* **26**, 342–53.
- Nyvall RF, 1989. *Field Crop Diseases Handbook*. New York, USA: Van Nostrand Reinhold.
- Rossi V, Racca P, Giosue S, 1995. Geophytopathological analysis of *Cercospora* leaf spot on sugar beet in the Mediterranean area. *Phytopathologia Mediterranea* **34**, 69–82.

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