

First report of *Alternaria alternata* causing leaf spot on *Stevia rebaudiana*

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Stevia rebaudiana is a herbaceous perennial plant of the Asteraceae and native to Paraguay. It has been recognized world wide for its excellent sweetening property. In India the plant has been introduced in the states of Maharashtra, Tamil Nadu, Karnataka, Rajasthan and West Bengal.

For the last three years, during February when temperature ranges from 20–25°C, severe foliar infections were observed in the region of South Bengal. Symptoms initially appeared as small circular spots, light brown in colour. Later, many became irregular and dark brown to grey, while others remained circular with concentric rings or zones. On severely affected leaves several spots coalesced to form large necrotic areas. On older leaves concentric spots were more common at the tips. Leaf spots varied from 2–18 mm in diameter. Conidial dimensions varied from 10–40 × 6–12 mm, mid to dark brown or olive-brown in colour, short beaked, borne in long chains, oval and bean shaped with 3–5 transverse septa.

A fungus was isolated on potato dextrose agar media and produced abundant branched septate, brownish mycelia. Conidiophores were simple, olive-brown, septate, variable in length with terminal conidia, which were solitary or in short chains. Conidial characteristics from culture were similar to the conidia isolated from infected plants. Based on the morphological characters, the organism was identified as *Alternaria alternata* and the identification was confirmed by the Agharkar Research Institute, Pune, India.

A pathogenicity test was performed by spraying leaves of 10 healthy, 3-month-old potted *S. rebaudiana* plants with a spore suspension of 10⁵ conidia per mL. Control plants were sprayed with sterile water. Plants were covered with plastic bags for 10 days and kept in the laboratory garden at 30 ± 20°C. The pathogenicity tests were repeated three times.

The first lesions appeared after a period of 12 ± 2 days. The pathogen was consistently reisolated from the lesions.

Fungal diseases reported on *S. rebaudiana* include *Erysiphe cichoracearum*, *Rhizoctonia solani*, *Sclerotium dephinii*, *Sclerotium rolfsii*, *Septoria steviae*, *Sclerotinia sclerotiorum* and *A. steviae* (Thomas, 2000; Lovering & Reeleeeder, 1996; Kamalakannan *et al.*, 2007; Ishiba *et al.*, 1982). This is the first report of *A. alternata* on stevia in India.

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First record of *Alternaria petroselini sensu lato* causing leaf blight on parsley in Australia

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During 2005 surveys for parsley diseases in Australia, an *Alternaria* sp. was isolated from leaf blighted plants in Chambers Flat, Queensland, and Clyde, Victoria. Symptoms included chlorotic and necrotic lesions on the leaves that spread down the stems in badly affected plants. The fungus sporulated abundantly on moist incubated leaves and was transferred directly to V8 agar and grown under lights. The fungus produced abundant alternarioid conidia that were borne singly, subspherical to oval and 40–80 × 20–25 µm.

Alternaria petroselini and *A. selini* are similar species that cause leaf blight of parsley. They are distinguished by whether the conidia are predominantly subspherical or oval (Simmons, 1995). However, it has been suggested that these two species could be synonyms based on molecular evidence (Pryor, 2002; Pryor & Bigelow, 2003). The conidia in our cultures were very variable, and although they favoured *A. selini*, given the inability to be totally confident in a precise identification, this fungus was identified as *A. petroselini sensu lato*. Neither *A. petroselini*, nor *A. selini* have been previously recorded in Australia. Cultures have been lodged in herbarium VPRI.

Pathogenicity experiments were conducted. The fungus was grown on V8 agar at room temperature under lights for one week. The agar plate was flooded with sterile deionised water supplemented with the surfactant Tween 80 (1 drop Tween 80 per 100 mL deionised water). A conidial suspension (1 × 10⁵ conidia per mL) was sprayed onto curly-leaf parsley plants (*Petroselinum crispum* cv. Afro) until runoff. Control plants were

sprayed with sterile deionised water supplemented with Tween 80. Plants were covered in plastic bags and placed in a growth chamber with a 16/8 light cycle, day temperature set at 25°C and a night temperature of 15°C. After 7 days typical leaf blight symptoms could be seen. Plants were heavily blighted 18 days after inoculation. The fungus was reisolated by directly removing conidia from the leaf surface.

This disease has been recorded in England, the USA and Saudi Arabia (Farr *et al.*, No Date). It is probably widespread in eastern Australia, but has gone unnoticed until these surveys. Economic losses were observed on the Queensland property, but the damage was very minor in Victoria.

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