

NEW DISEASE REPORT

First report of multiple inflorescence disease of *Cirsium arvense* and its association with a 16SrIII-B subgroup phytoplasma in Serbia

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Multiple inflorescences on *Cirsium arvense* (Asteraceae) have always been attributed to the presence of eriophyid mites, since their first record in 1892 (Petanović *et al.*, 1997). Plants showing symptoms of varying intensity were recorded from more than 10 sites in northern Serbia between 2001 and 2003. Affected plants showed irregular growth, atypical branching with small leaves, shortened internodes, hardening of the green inflorescence and reduced vigour, as well as either chlorosis or reddish-brown discoloration of the leaves and stems. Plants that reached flowering sometimes had multiple inflorescences. In the field the disease persists for years, increasing slowly around the original infection focus. Infected plants senesce prematurely, inhibiting both seed production and rhizome propagation, which markedly reduces the *C. arvense* population.

DNA was extracted from eight samples of fresh leaf midribs and multiple inflorescences from affected plants, and from similar tissues of four plants without symptoms. This DNA was used as template in a nested PCR using universal phytoplasma primers P1/P7, followed by primers F1/B6 (band ≈1700 bp) and then primers R16F2/R2 (Duduk *et al.*, 2004). Subsequent RFLP analyses with *HpaII*, *TruI* and *HbaI* restriction endonucleases were carried out. All samples from plants with symptoms were PCR positive, while those from the four symptomless plants were negative. RFLP patterns from the R16F2/R2 amplicons were identical to those of clover yellow edge phytoplasma (subgroup 16SrIII-B) but different from the

TruI and *HpaII* profiles obtained using a reference strain of peach X disease. These results were confirmed using primers R16(III)F2/R1, which are specific for group 16SrIII phytoplasmas and which amplify an ≈800 bp product (Lee *et al.*, 1994).

This is the first report of multiple inflorescence disease of *Cirsium* in Serbia and of its association with phytoplasmas belonging to rRNA group 16SrIII-B. These phytoplasmas have recently been identified in plants with similar symptoms in Hungarian vineyards (Palermo *et al.*, 2004) and in other herbaceous or woody host species.

References

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