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Diversity in the effect of an extract from *Fallopia sachalinensis* on isolates of cucurbit powdery mildews grown on melon

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Powdery mildew caused by *Podosphaera xanthii* and *Golovinomyces cichoracearum* is one of the principal diseases on cucurbit crops in temperate climates. In order to control this disease, various biological methods, including induced resistance by the use of extracts from *Fallopia sachalinensis*, have been identified.

This study was conducted to characterise the diversity of susceptibility to this plant extract among 52 isolates of *P. xanthii* and 5 isolates of *G. cichoracearum* collected from various cucurbit species in different production areas. To this end, disks excised from melon leaves were soaked in a preparation of *F. sachalinensis* extract (1% W/V) or in a control solution, inoculated with fresh conidia of powdery mildew 24 hours after treatment and placed in a growth chamber at 21°C. Ten days after inoculation, symptoms were rated individually for each leaf disk and were classified into 10 categories from 0 (no detectable fungal growth) to 9 (entire disk covered with heavy sporulation) based on a visual estimation of the leaf area infested by powdery mildew. Additionally, spore production on the leaf disks was assessed. The protective effect of the plant extract was estimated as the reduction in mildew severity on treated plants relative to that on the untreated control plants.

The plant extract significantly decreased the severity of disease for all the powdery mildew isolates tested, suggesting the absence of a high level of resistance to the effect of this product. On average for isolates of *P. xanthii*, spore production on the leaf disks was reduced five fold in presence of the plant extract relative to the untreated control. However, the extent of the reduction in spore production varied widely among isolates. Possible implications of these findings will be discussed.