

## **Changes in carbohydrate composition of cucumber leaves during the development of powdery mildew infection**

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Within 3 days after inoculation, greater rates of decrease of hexoses, and of increases in inositol and  $\alpha$ -glucans, were detected in leaves of cucumber leaves infected with *Sphaerotheca fuliginea* (now reclassified as *Podosphaera xanthii*) than in healthy leaves, together with synthesis of fungal mannitol, arabitol and trehalose. With the onset of sporulation (5 days after inoculation, dai), glucose, polyols, trehalose and glycogen content, as well as fresh and dry weight of leaf tissue, increased more rapidly than in healthy plants, while sucrose, raffinose and starch declined. Starch, glycogen and other  $\alpha$ -glucans, extracted from ethanol-insoluble tissue fractions of different water-solubility from healthy and infected leaves, were quantified after amyloglucosidase treatment. Infection-induced alterations in partitioning of photosynthate during a 14 h photoperiod at 7 dai, including a close correspondence in patterns of synthesis of glucose, polyols and glycogen, further clarified the process of diversion of host assimilate to the pathogen. The presence of glucose, but only traces of sucrose in spores, supported evidence from other powdery mildew infections for photosynthate being transferred to *S. fuliginea* as glucose.

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