

Studies about infection of different *Alternaria solani* isolates on *Solanum tuberosum*, *Lycopersicon esculentum* and *Solanum nigrum*

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Studies about infection of different *Alternaria solani* isolates on *Solanum tuberosum*, *Lycopersicon esculentum* and *Solanum nigrum*

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Aim of the work

Early Blight caused by *Alternaria solani* is a highly destructive disease of potatoes and tomatoes. In this study species of the family *Solanaceae* named *Solanum tuberosum* with the cultivars 'Kuras' and 'Maxilla', *Lycopersicon esculentum* cultivars 'Harzfeuer' and 'Bocati' and *Solanum nigrum* were tested on occurred leaf blight. The aim of this work was to study the susceptibility of *Solanum tuberosum*, *Lycopersicon esculentum* and *Solanum nigrum*.

Material und Methods

The plants of the family *Solanaceae* (*Solanum tuberosum* cv 'Kuras' and 'Maxilla'; *Lycopersicon esculentum* cv 'Harzfeuer' and 'Bocati'; *Solanum nigrum*) were cultivated in the greenhouse. 6 weeks old plants were inoculated with a mixture of four different *Alternaria solani* isolates (spray inoculation, spore density: 10×10^4 spores/ml). Inoculated plants were kept in a humidity chamber for 48 h at 20 °C and 100% rel. humidity. The disease was rated according to Granowsky und Peterson (1954) in a daily interval.

Results

Two days after inoculation first symptoms on the different plants were visible (fig 1). There was a disease progression until 8 days post inoculation. Afterwards the progression slowed down. In the greenhouse trial *Solanum tuberosum* showed a higher susceptibility than *Lycopersicon esculentum*, interestingly the black nightshade (*Solanum nigrum*) was also very susceptible.

The tested genotypes of tomato (Harzfeuer and Bogati) and potato (Maxilla and Kuras) showed different susceptibility to *Alternaria solani*.

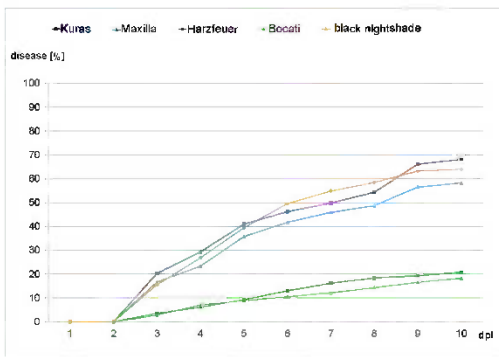


fig. 1: Early blight disease progression of *Solanum tuberosum* (cv 'Kuras' und 'Maxilla') *Lycopersicon esculentum* (cv 'Harzfeuer' and 'Bocati') and *Solanum nigrum* in a greenhouse trial



fig 2: *Alternaria solani* infected leaf of *Solanum nigrum*, natural infection in the field

Summary

The fungus *Alternaria solani* causing early blight on potatoes and tomatoes also infects black nightshade (*Solanum nigrum*). The infection of *Solanum nigrum* is important regarding the biology of the fungus - infected black nightshade plants during the crop rotation increase the soil borne inoculum of *Alternaria solani* and can therefore influence the disease progression on the potato crop.