

# Breeding strategies for the development of resistant strawberry cultivars against the pests *Botrytis cinerea* and *Xanthomonas fragariae*

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Organic strawberry production is mostly hampered by fungal and bacterial plant diseases. Especially the grey mould disease caused by the fungus *Botrytis cinerea* Pers. (teleomorph *Botrytinia fuckeliana*) and the bacterial angular leaf spot disease caused by *Xanthomonas fragariae* (Kennedy & King) are two of the most important diseases in organic strawberry production. Pesticides are not permitted in organic farming and indirect plant protecting measures such as cultivation methods and application of plant strengthening products are only less effective. Planting of resistant cultivars seems to be the most promising strategy to improve the productivity in organic strawberry production. Although commercially cultivated strawberry cultivars differ in their susceptibility to these diseases no resistant cultivars are available on the marketplace. On this account we

started a program on evaluation of strawberry genetic resources for their resistance/susceptibility to *B. cinerea* and *X. fragariae*, respectively. We collected different strains of each pathogen and tested their virulence to a defined set of strawberry genotypes. Subsequently, we established methods for artificial fruit/leaf inoculation in the greenhouse for both pathogens and started the evaluation of strawberry cultivars. Furthermore, breeding clones and wild species of the Fruit Gene Bank Dresden-Pillnitz will be tested. Based on the results resistant/tolerant genotypes will be selected and used in test crosses to determine the general and specific combining ability. The results of the test crosses will lead to the identification of genotypes that are suitable for a targeted resistance breeding against *B. cinerea* and *X. fragariae*, respectively.