Title Epidemiology of grey mould in annual waiting-bed production of strawberry

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Abstract

The epidemiology of *Botrytis cinerea* was studied in five annual strawberry crops using waiting-bed transplants, a system widely adopted in the Netherlands. On dead leaves of transplants the incidence of *B. cinerea* varied from 26.7% to 52.6%, but the leaf area with potential sporulation was low (3.5–15.6%). During each crop cycle, the availability of necrotic leaf substrate for spore production of *B. cinerea* was generally low and varied between seasons and with the quality of transplants. *B. cinerea* sporulated on a maximum of 15.5 cm^2 of leaf area per plant, measured as potential sporulation. The aerial concentration of *B. cinerea* conidia in untreated plots did not differ from the concentration in plots where all dead leaves had been removed, nor from the concentration at 25–50 m distance from the strawberry plots. *B. cinerea* incidence on flowers ranged from 5% to 96%, but no correlation was found with the potential spore production on necrotic leaves. Grey mould at harvest varied from 1.4% to 11.3% and was correlated with the average precipitation during the harvesting period but not with *B. cinerea* incidence on flowers. Post-harvest grey mould ranged from 2.1% to 32.6% and was correlated with petal colonisation by *B. cinerea*. The results suggest that in the annual cropping system with waiting-bed transplants, necrotic leaves are not a significant source of *B. cinerea* inoculum, unlike in other strawberry production systems. Therefore, control measures of grey mould in this annual system should focus on protection of flowers and young developing fruits, and not on the reduction of inoculum production on leaf debris.