POTENTIAL BIOCONTROL AGENTS AGAINST *CIBORINIA CAMELLIAE*

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Cultural controls and fungicides have not given satisfactory control of camellia flower blight caused by *Ciborinia camelliae* and resistant varieties of the main commercial varieties are not available. An alternative control measure could be the use of phylloplane biocontrol agents against *C. camelliae* ascospores on the petal surface. Yeast and bacteria were isolated from camellia leaves and petals, and from soil under camellia plants using an attachment assay technique. Six yeast and 13 bacterial isolates obtained by this technique, together with a bacterial isolate previously tested against *Botrytis cinerea* were tested for biocontrol activity by co-inoculation on camellia petals with *C. camelliae* ascospores. There was little disease development on the petals co-inoculated with two of the bacterial isolates. Isolate 07L1B reduced symptom appearance from the 70% area of control petals to 4%, while isolate 04S2B reduced it to 20%. These isolates will be further tested for their ability to survive and spread on petals as well as their protective capabilities.

MECHANISMS OF RESISTANCE TO *CIBORINIA* *CAMELLIAE* IN *CAMELLIA* SPP

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Sources of resistance to *Ciborinia camelliae* within the genus *Camellia* have been found but the mechanisms of resistance are not known. Three of these resistant *Camellia* species were inoculated with *C. camelliae* ascospores to observe possible host defence mechanisms microscopically. Petals of *C. lutchuensis* and *C. cuspidata* showed a similar reaction by forming papillae around the infection point. In addition, *C. cuspidata* petal tissue showed a hypersensitive reaction with cell wall thickening and the collapse of infected cells. The third species, *C. transnokoensis*, showed a third type of resistance mechanism. Germ tubes were distorted and failed to penetrate the petal surface suggesting the presence of anti-fungal substances. Further investigations are required to elucidate the biochemical pathways and genetic control of these resistance mechanisms to provide a sound basis for a successful programme to breed camellias with desirable flower colours and types with resistance to *C. camelliae*.