

# The effect of low temperatures on *Colletotrichum acutatum* and *Colletotrichum gloeosporioides* causing body rots of avocados in New Zealand

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## Abstract

The effect of extended periods at low temperatures on spore germination, survival and appressorial formation in *Colletotrichum acutatum* and *C. gloeosporioides*, and on pre-formed appressoria of *C. gloeosporioides*, was studied on water agar on glass slides on a temperature gradient plate. *C. acutatum* was more tolerant of low temperatures than was *C. gloeosporioides*. The addition of peptone to simulate endogenous nutrients on the avocado fruit surface affected spore germination and survival only slightly, and the effect was not statistically significant. These trends *in vitro* were also apparent in isolations from fruit rots. Infections by *C. acutatum* were not reduced by storage at 5.5°C before ripening. Incidence of infections caused by *C. gloeosporioides* was significantly fewer in fruit coolstored at 5.5°C for 30 days prior to ripening at 20°C than in fruit stored at 20°C. In the two lines of fruit studied, coolstorage reduced body rots in one line but not the other. The rots on the line of fruit not affected by coolstorage were mainly caused by *C. acutatum*. These results suggest that in coolstored fruit, the reduction in incidence of rots caused by *C. gloeosporioides*, but not of rots caused by the closely related fungus *C. acutatum*, was due to the greater sensitivity of spores of *C. gloeosporioides* to cold temperatures. Survival of pre-formed appressoria of *C. gloeosporioides* was not affected by temperatures used for coolstorage of avocados.

**Keywords:** appressoria, *Glomerella cingulata*, spores, coolstorage, 'Hass', postharvest rots.

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