Abstract

Gray mold, caused by *Botrytis cinerea* is the major cause of postharvest loss in strawberries. Detection of flower and fruit infections enables producers to make intelligent management decisions. A plate-trapped ELISA protocol using a *Botrytis* -specific monoclonal antibody (BC-12.CA4) was developed for the detection of *Botrytis cinerea* in strawberry flower receptacles and red fruits. Horseradish peroxidase, was chosen as enzyme conjugate because it gave lower background absorbance in disease-free samples. *B. cinerea* reference antigen (RAg) was isolated from strawberry. BC-12.CA4 was very sensitive to the RAg, detecting up to 6 μg/ml of RAg when mixed with strawberry extracts. The MAb did not show any reaction to *Rhizopus* sp., *Mucor* sp. and *Penicillium* sp. associated with strawberry. *B. cinerea* could be detected in receptacles two days after inoculation. Treatment of inoculated receptacles with paraquat speeded-up detection. Inoculated red fruit infection could be detected after three days of incubation. Disease in commercially-produced receptacles and red fruits were assessed visually and by ELISA. The ELISA detected *B. cinerea* in 95% of commercial flower samples, whereas the traditional visual method detected only 50 to 70%. No dramatic differences between methods were found for red fruits.