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Biocontrol of postharvest decay using a new strain of *Pseudomonas syringae* CPA-5 in different cultivars of pome fruits

Keywords *Botrytis cinerea*, *Penicillium expansum*, *Pseudomonas syringae*, *Rhizopus stolonifer*, apples, pears, cold storage,

Abstract

Epiphytic micro-organisms isolated from fruits and leaves surfaces of apples from different orchards were screened for antagonistic activity against *Penicillium expansum*. From all micro-organisms tested the new strain CPA-5 of *Pseudomonas syringae*, isolated from organic orchard, was selected. This strain was very effective against *Botrytis cinerea*, *P. expansum* and *Rhizopus stolonifer* at various antagonist and pathogen concentrations on 'Golden Delicious' apple, and 'Blanquilla', 'Rocha' and 'Conference' pear. Under cold storage conditions and in semi-commercial trials *P. syringae* (CPA-5) significantly reduced development of *P. expansum* and *B. cinerea* on 'Golden Delicious' apple, and 'Blanquilla' and 'Rocha' pears. Control of *P. expansum* equal to the fungicide imazalil was obtained with CPA-5 at 108cfu ml⁻¹ on 'Gold Delicious' apple and 'Rocha' pear. The populations of *P. syringae* CPA-5 increased more than 100-fold during the first 50 days, and then remained stable on apple, and slightly decreased on pears. This indicates the high capacity of this antagonist to colonize wound surfaces of pome fruits under cold storage conditions.

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