

**Title** Postharvest behaviour of transgenic strawberry with polygalacturonase or pectate lyase genes silenced

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#### **Abstract**

The postharvest behaviour of transgenic fruits with low expression levels of a pectate lyase or a polygalacturonase gene was analyzed. Fruits were stored for several days at 5°C, and evaluated after 1 additional day at 25°C. Fruit firmness was measured with a TAXT-Plus texturometer, using a puncture test for individual fruits and an Ottawa cell for a sample of 5-6 fruits. At harvest, both antipectate lyase and antipolygalacturonase fruits were significantly firmer than the control. Pectate lyase fruits from three independent lines were stored for 7 days at 5°C plus 1 day at 25°C. In the puncture test, the bioyield point of the control fruits decreased by 41% after the postharvest treatment. This parameter was significantly higher in transgenic fruits when compared with their controls. Similarly, the maximum force needed to extrude the fruits by the Ottawa cell was higher in transgenic fruits. The percentage of fruits damaged by fungal infection decreased significantly in one of the lines assayed. In the case of polygalacturonase, fruits were stored for 4 days at 25°C and evaluated after 1 day at 25°C. Similarly to pectate lyase, transgenic fruits from the three lines analyzed were firmer than the control after the postharvest treatment, measured by both the puncture and the Ottawa test. These results confirm that the inhibition of both genes improves postharvest behaviour of strawberry.