

# Study of the main points of impact during cherry handling and factors affecting pitting sensitivity

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Acta Horticulturae 1020: 137-141. (2014)

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## Abstract

Pitting damage is one of the most important causes of quality loss during the postharvest life of cherries. The present work examines the effect of different factors that can affect pitting sensitivity. In a first trial, fruit samples of 'Lapins', 'Sunburst' and 'Stella' were taken from commercial orchards during commercial harvest and at different points of five packing lines and pitting incidence was determined. In a second trial, 'New Star', 'Lapins', 'Sunburst' and 'Stella' were harvested at commercial maturity and dropped from 15, 10 or 5 cm at a flesh temperature of 20, 10 or 2°C. The experiment was repeated with 'New Star' and 'Lapins' harvested at more advanced maturity stage. Furthermore, the effect of different calcium and gibberellic acid (GA3) preharvest treatments on pitting occurrence was evaluated with 'Stella'. Results showed that pitting occurrence was low during harvest handling except in highly susceptible cultivars like 'Sunburst'. The percentage of pitted fruit significantly increased during packing operations and both deficiencies in line design and lack of training of operators were observed. Pitting sensitivity was cultivar dependent and affected by temperature and drop height. At 20°C, all cultivars resisted a 15 cm drop, at 10°C only 'New Star' and 'Lapins' resisted a 5 cm drop, and at 2°C only 'Lapins' did not exhibit significant pitting from a 5 cm drop. Maturity at harvest and calcium-GA3 sprays did not affect pitting occurrence. We conclude that to reduce pitting, the maximum drop height during harvest should be 15 cm, where fruit temperature is usually above 20°C, and 5 cm in the packing lines where fruit temperature is between 10 and 2°C. Moreover, the best way to reduce this disorder in packing lines is by training operators and improving the design of the line.