

Title The effect of fruit maturity and storage duration on friction discolouration of ‘Packham’s triumph’ and ‘Doyenne Du Comice’ pears

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Abstract

Friction discolouration (FD) is causing the South African pear industry multi-million rand losses due to blemished fruit being rejected for the export market and being sold locally. The occurrence of FD was studied over two seasons using ‘Packham’s Triumph’ and ‘Doyenne du Comice’ (*Pyrus communis*) fruit. The influence of fruit maturity and storage duration were investigated by harvesting over three maturities and storing fruit for up to three months. FD was induced using a modified laboratory shaker that was shown to closely mimic pack line damage. Polyphenol oxidase (PPO) activity and total phenolics (TP) content were also evaluated. ‘Doyenne du Comice’ was more prone to FD than ‘Packham’s Triumph’. Harvest maturity significantly influenced FD susceptibility, with the middle picking maturity generally giving higher FD ratings. Increasing storage duration generally increased FD ratings, although not consistently. PPO activity was not influenced by harvest maturity, but was influenced by storage duration. In ‘Packham’s Triumph’, the TP content was not affected by harvest maturity or storage duration, whereas both these factors significantly influenced TP content in ‘Doyenne du Comice’. Susceptibility to development of FD symptoms is not easily linked to either PPO activity or TP content, and seasonal differences in susceptibility make prediction of possible levels of FD very difficult.