

Title Postharvest factors affecting appearance on 'Fuji' stain
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Abstract

Commercial fruit rejections due to 'Fuji' stain are increasing in Tasmania causing marketing problems. A feature of this problem is that the disorder often develops after packing and during transport to market. In addition it has been found that for fruit destined for Japan, fumigation with methyl bromide aggravates its appearance. This paper summarises 4 years of trials on commercial postharvest methods to overcome or reduce the appearance of 'Fuji' stain. Susceptibility to stain has been found to be orchard specific being present on more than 5% of fruit in 4 out of 11 orchards studied in detail. Stain was found to be less prevalent on striped strains of 'Fuji' and more prevalent on the red side of the fruit which had been exposed to the sun. Susceptibility to stain increased dramatically with advancing maturity at harvest, with only minor occurrences at 50% or greater starch pattern. Higher storage temperatures (5°C) reduced the problem as did postharvest drenches of 2% ascorbic acid or treatment with 1 MCP, but DPA or calcium drenches did not. Nine grader lines were studied; a grader waxing and hot air drying typically doubled incidence of stain. Different brands of wax showed large differences, however, due to the variation encountered these differences could not be separated. Higher transport temperatures reduced the problem with incidence halving as temperature increased from 4 to 6°C. This appeared to be a critical temperature range for the reduction in the appearance of stain. Methyl bromide fumigation increased stain. In 5 containers of fruit monitored and sent to Japan fumigation increased the appearance of stain 3 fold. Preliminary experiments with controlled atmosphere and temperature disinfestation of fruit (CATTS) indicated that this treatment enhances the appearance of stain to a greater extent than methyl bromide.