

# Loss of kernel quality associated with harvest delays in Tasmania, Australia

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## Abstract

Knowledge of factors that adversely affect the quality of walnuts grown in Tasmania, Australia, is limited. Experiments over two years investigated the temporal development of fruit maturity and the effect of harvest delays on kernel quality. The progression of kernel maturity, or packing tissue brown (PTB), was similar in 'Lara' and 'Vina', with 95% PTB predicted between 77 and 87 days after January 1. The onset of harvest, defined as 80% hullable fruits, was similar for the two cultivars, occurring within 5-days of each other. Delaying harvest beyond 95% PTB reduced kernel quality in both years. In 2009-10, delaying harvest significantly reduced the percentage of extra-light kernels for 'Vina', 'Howard' and 'Chandler' i.e., for 'Chandler', from 77% extra-light with no harvest delay compared to 63% a 7-day harvest delay. Delaying harvest by 7 days significantly increased the percent of kernels with yellow pellicle i.e., from less than 6% yellow pellicle with no delay to 24, 28 and 51% of 'Howard', 'Vina' and 'Chandler' nuts, respectively, with a 7-day harvest delay. Similarly, in 2011-12 'Lara' and 'Chandler' nuts harvested 8 days or more after tree shaking had fewer extra-light kernels, and more yellow pellicle and mould, compared to nuts harvested earlier. Additional research will identify seasonal variations and improve the initial description of fruit maturity and factors affecting kernel quality.