Title Predicting storage potential of batches of table grapes (cv. 'Thompson Seedless') infected with *Botrytis cinerea*

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Abstract

Storage life and market quality of table grapes is reduced by *Botrytis* infection. Categorising batches of table grapes at harvest according to the risk of *Botrytis* bunch rot development would allow industry more market flexibility. They could identify fruit batches with low-risk of Botrytis infection for long-term storage and export to distant markets and sell high-disease-risk fruit batches before they lose quality due to excessive rots. This study investigated *a* method that predicts the storage potential of 'Thompson Seedless' table grapes based on levels of *Botrytis* infection detected in fruit batches at harvest. Experimental data was collected from storage experiments that simulated commercial practices using table grapes collected from six field trials established in commercial vineyards in Sunraysia, Victoria. Levels of *Botrytis* infection (superficial and latent) at harvest were determined using an incubation method that induced full expression of rots in detached berries. The study showed that *Botrytis* incidence assessed at harvest was a good predictor of the levels of *Botrytis* bunch rot that developed in cold storage and market. This allowed classification of fruit batches, stored in commercial export boxes, as low-risk for *Botrytis* based on the maximum number of berries infected with *Botrytis* in a sample of bunches that reduce the quality of a fruit batch. We are currently validating the preharvest incubation method, together with a model developed from slopes of disease development values plotted against time, for their accuracy in predicting storage potential using a range of fruit batches stored at different temperatures with and without sulphur dioxide treatment. The study also indicated that the storage potential of fruit batches will be limited by disease pressure from other rots at harvest, capacity of sulphur dioxide to control superficial and suppress latent infection and ability of pathogens to grow in cold storage.