

# Effect of postharvest dehydration on the microstructure and anthocyanin content of grapes

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## Abstract

Postharvest dehydration temperature is important for the quality of grapes, especially the content of anthocyanin. Therefore, this article investigated the changes in the contents of total phenolic and anthocyanin compounds as well as the tissue microstructure of grapes. Furthermore, the correlation between the drying temperature and the total phenolic and anthocyanin compounds was analyzed. The results showed that the total phenol content was  $1188.25 \pm 37.32$  mg/kg in the control group and  $998.13 \pm 52.28$  mg/kg and  $886.00 \pm 12.33$  mg/kg in the groups treated at 25 °C and 45 °C, respectively, with 60% mass loss. The microstructure of the grape peel showed shrinkage, rupture, and collapse with the disappearance of fine structures during dehydration at different temperatures. The drying temperature was positively correlated with the dehydration rate ( $p < 0.01$ , sig = 0.781), which was negatively correlated with the total phenolic content ( $p < 0.01$ , sig = - 0.985). Overall, the results provide a reliable scientific basis for the extraction and utilization of anthocyanins in grapes.