Harvesting at the end of the day extends postharvest life of kale (*Brassica oleracea* var. *sabellica*)

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Abstract

The contribution of Brassica vegetables to health improvement is related to their antioxidant capacity. Kale, as a member of Brassicaceae family, has high concentrations of antioxidants and glucosinolates. The main problem of harvested kale leaves is their accelerated senescence that leads to yellowing and a decline in nutritional quality.

Previous reports indicate that daytime cycle strongly influenced different metabolic and physiological processes of plants, so the aim of this research was to determine if postharvest shelf life was influenced by the time of day in which kale leaves were harvested.

In this study, we harvested kale leaves at 8:00, 13:00 and 18:00 h (in spring crop) and analysed their postharvest behaviour during storage for 9 days at 20 °C in darkness. We measured the yellowing and senescence metabolism during postharvest storage. Results show that leaves harvested at 8:00 h present earlier symptoms of yellowing, higher chlorophyll degradation and lower sugar content. On the other hand, the samples obtained at 18:00 h barely showed senescence symptoms with a delay in yellowing. Additionally, leaves harvested at 18:00 h present higher protein and sugar content giving evidence of the fact that harvest at 18:00 h contributes to delay kale leaves yellowing and senescence metabolism during storage.