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## Influence of post-harvest storage temperature and duration on quality of baby spinach

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Baby spinach (*Spinacia oleracea* L) is a member of the *Amaranthaceae* family. Its leaves have a very high respiration rate thus post-harvest quality is affected mostly by tissue decay and the development of off-odours. Thus, this study was conducted to investigate the influence of storage temperature and time on the post-harvest quality of baby spinach. Baby spinach leaves were harvested at 36 days after planting and subsequently stored at 4°C or 22°C for 0, 2, 4, 6, 8, 10 and 12 days. Thereafter the leaves were incubated for 72 hours at 40°C to dry. Minerals, trace elements, total phenols, total carotenoids, flavonoids and antioxidant activities were measured. Composition of magnesium, zinc and iron declined after 8 days of storage at 4°C whilst at 22°C, they declined after 2 days of storage. Magnesium, zinc and iron revealed a similar trend with significantly higher carotenoids found up to 6 days in storage at 4°C whilst at 22°C the carotenoid levels declined after only 2 days. Total phenolic compounds gradually decreased in samples stored at 4°C. However, samples stored at 22°C showed a rapid decrease after 4 days. Both total antioxidant activities and Vitamin C content showed a similar trend with the content remaining constant at 4°C and decreasing after 6 days, whereas the total antioxidant activities and vitamin C for leaves stored at 22°C decreased immediately after 2 days. However, storage time and temperature did not exhibit significant effects on selenium. Results demonstrated that quality of baby spinach deteriorates as storage time and temperature increase.

## **Biography**

Ambani Richardo Mudau is on the final phase of his Masters degree at the College of Agriculture and Environmental Sciences, University of South Africa.

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