# Changes in biochemical and qualitative properties in fresh-cut broccoli genotypes during storage

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## Abstract

Content of bioactive compounds in broccoli head varies with genotype, environmental, agronomical, processing, and postharvest conditions. A study was planned to characterize and evaluate changes in fresh (FW) and dry (DW) weight, in antioxidant capacity (AC) and total phenolics (TP) content, in fresh-cut processed florets in seven broccoli cultivars after 7 ($T_7$), 14 ($T_{14}$), and 21 ($T_{21}$) days of storage at 5°C in OPP packaging. Head were harvested in early spring from a commercial farm located in Foggia province (southern Italy). Results indicate that at harvest cultivars $cv_1$, $cv_2$, $cv_3$, $cv_4$, $cv_5$, and $cv_6$ showed the highest floret DW content, followed by $cv_7$. Postharvest storage was stopped on day 14 for $cv_1$, $cv_2$, $cv_3$ and $cv_4$, because of strong off-odors produced. At $T_{14}$, floret DW concentration decreased much more in $cv_4$ than in $cv_7$. Fresh weight loss (WL) was negligible, however $cv_5$ and $cv_7$ showed the lowest values. The main component of total weight loss during storage was the respiratory component being not significant that connected with transpiration. Differences in AC and TP content were detected in raw material. Compared with $T_0$ AC decreased at $T_7$ and increased at $T_{14}$, particularly in $cv_1$ and $cv_2$. After 7 days of storage TP content was unchanged (except $cv_3$ and $cv_6$), while at $T_{14}$ increased (except in $cv_7$). No relationship seems to exist between AC and TP, whereas it is possible to suppose that the higher the initial AC the longer the shelf-life of fresh-cut florets.