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LAMB'S LETTUCE (*VALERIANELLA OLITORIA* [L.] POLLICH) STORAGE AT LOW TEMPERATURE IS IMPROVED BY PARTITIONED LIGHT

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Light treatments during storage at low temperature might induce both positive and negative effects on shelf life and quality of produces. For this reason, in this work we examined the effect of low light irradiance on lamb's lettuce during storage at a low temperature. Partitioned light treatments (4 doses per 1h per day; 8 doses per 1h per day; 16 doses per 0.5h per day) showed positive effects, while continuous light treatments (8h per day) were deleterious. The content of photosynthetic pigments, energy-linked metabolites and antioxidants was evaluated at the beginning and after 6 days of storage in comparison with samples stored at 4°C in the dark. The content of such bioactive compounds was increased or at least similar in samples stored under partitioned light and at a higher temperature (6°C) when compared to those stored in the dark. We suggest that continuous light treatments could promote photosynthesis but also cause photo-damage during cold storage of lamb's lettuce. However, the photosynthesis under partitioned low light is only partially activated and so the photo-damage is limited, although the metabolism of green tissues would be still able to provide carbon moieties for the synthesis of bioactive molecules, thus delaying senescence. With respect to the samples stored in the dark at a lower temperature (4°C), partitioned low light treatments at 6°C could contribute to ameliorate the quality of lamb's lettuce and, at the same time, allow an energy saving.