

Quality of White mushroom (*Agaricus bisporus*) under argon- and nitrogen-based controlled atmosphere storage

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Abstract

This study was conducted to identify effective CA (Controlled Atmosphere) gas compositions for the storage of white mushrooms. We analyzed the quality characteristics of mushrooms inside argon-based and nitrogen-based CA storage. Mushrooms were stored under 5 different gas compositions in a chamber for 9 days at 4 °C. The CO₂ production, weight loss and color change in 90% argon gas was lower than that of all other samples at the end of the storage period. Further, the samples in a CA retained their hardness during the 9-day storage time, unlike the control. The viable count of aerobic bacteria showed the highest value under the control condition. The smallest viable count of *Pseudomonas* spp. was detected under 75% nitrogen condition. Polyphenol oxidase activity was lowest under 75% argon condition. In summary, a 90% argon gas was shown to be the most effective at preventing deterioration in mushroom quality.