

# Postharvest short-time partial dehydration affects shiitake mushroom (*Lentinus edodes*) storage quality and umami taste

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## Abstract

The effects of short-time partial dehydration (STPD) on quality of shiitake mushroom were evaluated. Quality properties included respiration, texture, color and umami taste. Results showed that STPD treatment (STPD-2 and STPD-3) can slow down respiration rate and delay respiration peak, thus providing more than 7 days of storage time stored at  $20 \pm 1$  °C. Mushroom subjected to STPD-2 and STPD-3 treatments also maintained better firmness. The STPD-2 treatment effectively delayed the browning of fresh mushroom. Compared to other groups, the content of flavor 5'-nucleotides and total 5'-nucleotides in STPD-2 and STPD-3 samples were higher, and STPD-2 sample had higher total amino acid content during storage. Higher equivalent umami concentration (EUC) values were found in STPD-2 sample ( $17.58 - 38.69$  g MSG  $100$  g<sup>-1</sup>) compared to STPD-3 sample ( $13.80 - 27.51$  g MSG  $100$  g<sup>-1</sup>) and STPD-1 sample ( $5.11 - 14.19$  g MSG  $100$  g<sup>-1</sup>). Thus, it indicated that STPD-2 treatment could effectively preserve monosodium glutamate-like (MSG-like) components and nucleotides in mushroom. Results suggested that STPD treatment, especial STPD-2, could maintain mushroom overall quality.