Abstract

To explore the influences of storage conditions on freeze-dried *Agaricus bisporus* slices, the dynamic changes of physical and <u>sensory properties</u> under different conditions (37 °C, 85% RH; 25 °C, 55% RH; ambient temperature) were investigated. The results showed that the samples stored under 37 °C, 85% RH (HT) had sparser microstructure, smaller micro-pores, poorer rehydration, lower hardness and lower fracturability. Color examinations revealed that HT induced whiteness deterioration, this was as a result of phenolic substance oxidation and a weaker protection of citric acid. Umami taste of HT samples was rapidly lost owing to the decrease of 5′-GMP and MSG-like amino acids. Moreover, aroma information from E-nose revealed the superiority of storage conditions, 25 °C, 55% RH (RT) and ambient temperature (AT) were considered as better conditions in retaining the initial volatile compounds. In summary, RT was considered as the optima condition for the storage of freeze-dried *A. bisporus* slices.