

Title Changes in microbial and postharvest quality of shiitake mushroom (*Lentinus edodes*) treated with chitosan–glucose complex coating under cold storage

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Abstract

The effect of chitosan, glucose and chitosan–glucose complex (CGC) on the microbial and postharvest quality of shiitake (*Lentinus edodes*) mushroom stored at 4 ± 1 °C for 16 days was investigated. Mushroom weight loss, respiration rate, firmness, ascorbic acid, total soluble solids, microbial and sensory quality were measured. The results indicate that treatment with CGC coating maintained tissue firmness, inhibited increase of respiration rate, reduced microorganism counts, e.g., pseudomonads, yeasts and moulds, compared to uncoated control mushroom. The efficiency was better than that of chitosan or glucose coating treatment. In addition, CGC coating also delayed changes in the ascorbic acid and soluble solids concentration. Sensory evaluation proved the efficacy of CGC coating by maintaining the overall quality of shiitake mushroom during the storage period. Our study suggests that CGC coating might be a promising candidate for maintaining shiitake mushroom quality and extending its postharvest life.