

Influence of different source of dipping solution and duration of application on prolongation of the storage life of paddy straw mushroom *Volvariella volvacea*

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ABSTRACT:

Three experiments were conducted in the cold storage unit at Department of Horticulture and Landscape Design and the laboratories of the project of Fungi-Medicinal and Aromatic Plants Research Unit, College of Agriculture, University of Baghdad from 1.3.2014 to 15.5.2014. The spawn of strain V106 of the paddy straw mushroom *Volvariella volvacea* from china V106 was produced using fragmentation tissue culture. When the fruiting bodies of paddy straw mushroom were harvested by twisting carefully by hand at the egg stage. The fruiting bodies were treated with different types of dipping solution treatments either by Cumin seeds Extract (CE) at the concentration of 0, 100, 200, 400, 800 mg.L⁻¹ or Citric Acid solution (CA) at the concentration of 0, 20, 40, 60 g.L⁻¹ or dipping in Hydrogen peroxide Solution (HS) at the concentration of 0%, 0.2%, 0.4%, 0.6%. All fruiting bodies in these treatments were dipped in 5 sec or 10 sec and the excess water was removed using paper towel and they were kept in plastic container with the capacity of 50 g. All containers were covered by plastic films and stored at 10±1°C for one week. The results showed that the influence of types of dipping solutions have significantly decreased the physiological disorder, the percentage of post protein storage loss, on the percentage of opening of fruiting bodies, the percentage of post storage weight loss of fruiting bodies and the percentage phenolic compound of fruiting bodies after storage. The best type of dipping solution treatments was cumin seeds extract at 800 mg.L⁻¹ compared with the control treatment (dipping in water only), and best duration of dipping fruiting bodies which significantly decreased the physiological disorder, the percentage of protein loss, the percentage of opening of fruiting body and the percentage of weight loss of fruiting bodies was 10 sec but the 5 sec significantly the best duration of dipping which decreased the phenolic compounds.

Keywords:

Cumin seeds extract, Citric acid, Hydrogen peroxide, Shelf life, Paddy straw mushroom.