

**Novel post harvest treatment for oyster mushrooms (*Pleurotus ostreatus*)**

Bimali Jayawardena & Achini Subashini, Department of Chemistry, University of Kelaniya

*Pleurotus ostreatus* is an edible mushroom, which is usually known as an oyster mushroom. Mushrooms have a very short shelf life. At present, a low cost, non toxic method has not been developed to prolong the shelf life of oyster mushrooms. Development of a method to increase the shelf life of oyster mushrooms would be helpful to reduce the cost of production, and to popularize it as a nutritional supplement.

Hydrogen peroxide is commonly used as an anti microbial agent on fresh fruits and vegetables. Samples of fresh, whole, unwashed mushrooms, each containing  $40.00 \pm 0.01 \times 5$  g were immersed in 200 ml of 3%  $H_2O_2$  solutions for 30 seconds at  $30 \pm 1$  °C or sprayed with a solution of 3%  $H_2O_2$ . The treated samples were placed on absorbent paper to remove excess water and packaged into LDPE with 3:1 ratio and stored at 8°C. Controls were sprayed with water. At intervals of 03, 04, 05, 08, 10 days of storage, samples were tested for organoleptic and biochemical properties. The experiment was repeated three times.

Our studies indicate, Tyrosinase activity of mushrooms can be inhibited by hydrogen peroxide. Thus spraying and dipping in hydrogen peroxide solutions were used to prevent enzymatic browning and to increase the post harvest shelf life of oyster mushrooms. Untreated mushrooms packaged in low density polyethylene and stored at 8°C showed signs of browning after 3 days. Mushrooms treated with a 3% solution of hydrogen peroxide could be stored up to 10 days at 8°C. As hydrogen peroxide is a non toxic, environmentally friendly compound, the treatment method developed in the current study, can be recommended as a post harvest treatment for oyster mushrooms.