

## QUALITY MAINTENANCE IMPROVEMENT OF *PLEUROTUS OSTREATUS* MUSHROOMS BY MODIFIED ATMOSPHERE PACKAGING

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**Background.** Modified atmosphere packaging (MAP) is an important technology to extend mushrooms shelf-life, with maintenance the characterisation as “fresh product”, since allows reducing losses and maintaining quality, once they belong to highly perishable commodities. The aim of this study was to evaluate the potential storage conditions on the properties of fresh cultivated mushrooms – *Pleurotus ostreatus* when placed in polyethylene trays heatsealed with different polymeric films, passive modification mode, at 4°C.

**Material and methods.** The process was carried out using fresh mushrooms of the first flush, produced under controlled conditions. Investigations were conducted for 11 days. The mushrooms shelf-life was assessed through quality parameters, namely physiological, physicochemical, microbial and sensorial analysis. The marketability was assessed by visual appearance and sensory characteristics change, namely, softening and off-odours and off-flavours development.

**Results.** The factorial discriminate analysis allowed observing the influence of the different polymeric films permeability on the mushrooms storage. On the second day, similar mushrooms behaviour, with all film packages, was observed. From the seventh to the eleventh day, the packages showed an identical storage state, two to two, just the ninth day. This behaviour is related with O<sub>2</sub> levels (A and B films) and with CO<sub>2</sub> levels (C and D films).

**Conclusions.** The results leads to conclude that PE 65S Cryovac (C) and PD 961 Cryovac (D) films, improve storage mushrooms preservation with good stability during 11 days, showing the beneficial effect of MAP conditions. It is a valuable starting point in order to design a commercial application of modified atmosphere packaging technology with these products.

**Key words:** mushrooms, polymeric films, quality, stability