Title	Effect of modified atmosphere on shelf life of fresh poultry meat dipping in propyl gallate combined with phosphoric acid
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Abstract

Propyl gallate dips of poultry meat are commonly used to prevent rancidity. In the practice, Propyl gallate is always used in combination with acid. This might enhance the antimicrobial effect. Recent studies revealed that propyl gallate applied at a dose of 40 g/kg in combination with phos-phoric acid (30 g/kg) was effective to control the poultry meat spoilage at 4°C for 21 days. Also, a new packaging technology called modified atmosphere packaging (MAP) has been introduced in Thailand as an alternative for extending shelf life of poultry meat. This study investigated the effect of MAP on shelf life of fresh poultry meat dipping in Propyl Gallate combined with phosphoric acid. Poultry thighs were dipped in propyl gallate and phosphoric acid solutions for 10 min and then packed in a modified atmosphere of CO_2 concentration 0, 20, 40, 60 and 80%. There after, samples were store at 4°C for 0, 14, 28, 42, 56 and 72 days to detect the growth of total colony count, *E. Coli*, *Staphylococcus areus* and *Salmonella*. The results showed a microorganism (yeast, mold and bacteria) count of $>3.0 \times 10^7$ colony forming units (cfu)/g after 42 days storage period. *Salmonella* were not detectable for every storage time tested. *E. Coli* and *Staphylococcus areas* counts were less than 1100 cfu/g for every storage period. The results indicated that a CO_2 concentration of 40-60% is essential for prolonging the shelf life of poultry thigh at 4°C to 28 days. This concentration was effective in controlling *Salmonella*, *E. Coli* and *Staphylococcus areus* growth.