r-PGA浸漬處理對吳郭魚冷藏期間鮮度與品質之影響

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摘 要

本研究以鮮活吳郭魚為材料，經三片取肉，以未經去皮完整魚片及經去皮整形成長寬高分別為 3cm×2cm×1cm 的魚塊兩種型態進行實驗，浸漬於三種不同分子量及形式 γ-PGA 溶液，分別為 0.5% 之高分子量 Na＋ 型(HM)、低份子量 Na＋型(LM)和水膠 Na＋ 型(Hy)，並浸漬同濃度之三聚磷酸鈉(P)及 RO 水(R)為對照，比較不同浸漬液對貯藏在 4℃ 冰箱期間，0-8 天魚肉外觀與魚肉鮮度品質之變化。依魚片及魚塊兩種樣品所得結果如下： 1.魚片部分：在貯藏期間外側魚皮的色澤變化不大，其中以 HM 、 LM 與 Hy 三組的魚皮明顯較 R 和 P 濕潤；內部魚肉變化以 R 組和 HM 組至第 8 天，魚肉較偏褐色， P 組則無褐變情形；氣味分析以 R 和HM 得分最低， P 組最高；整體魚片之失重率在第 8 天以 P(13.28%)失重情形較高，而 LM(9.85%)最低。 2.魚塊部分：在色澤的變化， b 值均呈上升趨勢，在第 7 天 以 R (b＝-0.42)最高，即魚肉較偏黃色，而其中以 Hy(b＝-1.55)最低，此結果與外觀和 TBA(mg MDA/Kg meat sample) 改變程度相似； TBA 在第 8 天各組魚肉氧化程度以 R(0.147)最高， HM(0.088)最低，表示 γ-PGA 能有效的抑制魚肉的氧化； VBN 值(mg/100g meat)在貯藏至第 7 天時， R (27.73 mg/100 g)和 P(22.32 mg/100 g)已達初期腐敗，而 Hy(19.14 mg/100 g)則至第 8 天尚未超過標準；貯藏過程中，各組 K 值皆隨貯藏時間呈上昇趨勢， R 和 P 分別在 6 天和 7 天 K 值為 83.67% 、 73.99% ，已不新鮮， LM 則至第 8 天才達到 63.79% ；冷藏期間水分含量均呈下降趨勢，但其中 HM 與 LM 保水效果較佳；水溶性蛋白質溶解度在貯藏期間各組皆呈下降趨勢，貯藏過程 R(1.85)和 HM(1.76)在第 4 天時下降最明顯，而 LM (1.86)則在第 7 天才有顯著的下降。 3.綜合以上結果顯示， γ-PGA 溶液對於吳郭魚貯藏期間鮮度與品質之保持，無論是 VBN、K 值、TBA 值、失重率和外觀均有顯著的正面影響，其中 LM 和 Hy 效果最為顯著，期應用於水產保鮮具有取代聚磷酸鹽的可能性。

關鍵詞 : γ-聚麩胺酸 ; 吳郭魚 ; 鮮度與品質

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