

電子高壓靜電誘導裝置對胡蘿蔔汁在冷藏期間品質特性之影響

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摘要

本研究以省產胡蘿蔔為原料，將整支完整原料及經切丁、榨汁、過濾等程序後分裝於試管之汁液，貯存於控制 4℃ 之冷藏(R)及同溫下電子高壓靜電誘導裝置(EFID)中，檢測原料及液汁在貯藏期間品質之物理及化學變化，期能了解 EFID 之貯藏效果。所得結果如下：1. 整支生鮮胡蘿蔔經 15 天貯藏後，R 組失水率為 32.4%，而 E 組失水率較低為 29.9%；胡蘿蔔之硬度在貯藏期間亦隨時間延長而有降低之趨勢，其中以 R 組下降較為顯著。兩組貯藏方式下，隨貯藏期間延長其色澤呈安定現象，Hunter L, a, b 值均無顯著性變化。2. 胡蘿蔔汁液隨貯藏時間延長，色澤及總類胡蘿蔔素皆隨貯藏時間延長而呈降低趨勢；汁液顏色及色素淡化皆以 R 組下降較為顯著。3. 兩貯藏方式中，pH 均隨著時間延長而下降，可滴定酸度則相對增加。酸度之增高與 pH 之下降呈相關性，故可藉 pH 及酸度作為液汁劣化之指標。4. 兩貯藏方式中，液汁中總酚含量皆隨貯藏時間增加而增加，R 組增加顯著高於 E 組。單寧含量變化在兩貯藏過程中，R 組單寧隨貯藏時間的延長而增加；E 組則隨貯藏時間延長呈現較穩定狀態。5. 總生菌數及有機酸(乳酸、醋酸)在兩貯藏方式中隨時間延長而增加，兩者皆以 R 組變化較為顯著。此結果顯示，E 較 R 有良好之抑菌效果。6. 可溶性固形物在兩貯藏方式中隨時間延長而下降，還原糖則隨貯藏時間延長有先升後降之趨勢；兩者皆以 R 組變化較為顯著。總糖及還原糖至貯藏後期係因微生物充分利用導致此養分含量下降。7. 胡蘿蔔汁液之可溶性蛋白在兩貯藏方式中隨著時間延長而下降；甲醛態氮(游離胺基酸)則呈相對增加趨勢。由蛋白質下降與游離胺基酸含量增加之變化判定乃因液汁中蛋白質分解及變性所致。8. 混濁度亦隨貯藏時間延長而下降；由 E 組液汁之混濁較安定的狀態，顯示其對果膠與液汁中混濁因子成分有較佳之保護效果。

關鍵詞：電子高壓靜電誘導裝置,胡蘿蔔,貯藏試驗

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