

探討幾丁聚醣可食膜對保存蔬果品質之成效

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摘要

可食膜 (edible coating or film) 可以降低採收後蔬果於儲存及販賣期間的品質損失並保持外觀的完整性，而幾丁聚醣 (chitosan) 具有良好的生物降解性、無毒性、阻隔性及抑菌性，能用來作為可食膜或可食塗層的材料。因此，本篇報告將以幾丁聚醣包覆於採收後蔬果表面，觀察其延長蔬果保質期的成效。以不同比例幾丁聚醣 (0%、0.5%、1%、1.5% 及 2%) 包覆木瓜進行冷藏，結果顯示包覆可食膜的組別能有效降低木瓜的重量損失、果實軟化、顏色改變、可溶性固形物及可滴定酸。而將浸潤於幾丁聚醣溶液 (0%、0.5% 及 1%) 的絲瓜取出於室溫下觀察，以包覆 0.5% 及 1% 幾丁聚醣之組別可以有效延緩呼吸速率、採後硬度、外觀、抗壞血酸及總酚類含量的下降，還能減緩多酚氧化酶 (polyphenol oxidase, PPO) 的活性增加，其中 1% 幾丁聚醣的組別能顯著抑制過氧化酶 (peroxidase, POD) 及苯丙胺酸裂解酶 (phenylalanine ammonia lyase, PAL) 活性，並減少纖維素含量。利用幾丁聚醣、葡萄糖及幾丁聚醣-葡萄糖 (chitosan-glucose complex, CGC) 分別製成可食膜包覆食用葡萄，而有包覆可食膜的組別皆能有效抑制果實腐爛，此外，以幾丁聚醣-葡萄糖膜包覆能有較其他組別更良好的減緩果實總可溶性固形物、抗壞血酸、可滴定酸的下降，並誘導過氧化酶及超氧化物歧化酶 (superoxide dismutase, SOD) 的活性，也能有效地維持果實質地，因而有較高的官能評分。由以上結果可得知，以幾丁聚醣製成的可食膜包覆於採收後蔬果表面，可以有效延長蔬果的保質期，而不會影響其品質。

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