

## 糖類真空浸漬對愛文檬果蜜餞品質之影響

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### 摘要

愛文檬果(*Mangifera indica* L. cv. Irwin)盛產於 4 月-7 月，含有豐富的營養素，但產期短且集中，導致產容量易過盛，故利用乾燥加工方法提升檬果利用性。本研究即利用不同糖類真空浸漬而後烘乾加工方法，糖類真空浸漬加速物質交換，以提升糖漬速度，縮短糖漬時間。本研究採用海藻糖，海藻糖是一種非還原糖類，無法與蛋白質胺基結合形成梅納汀(Melanoidin)進而減少其產生。研究發現，檬果經真空浸漬後，可使時間縮短至 40 min，糖度可達到 23°Bx。不同浸漬糖的檬果蜜餞利用 60°C 進行烘乾 13 hr 後，可使水活性達到 0.652-0.703 及水分含量達到 9%-11%， $L^*$ 值及白度值在海藻糖糖浸漬處理者最高，同時，褐變度明顯低於其他處理組。海藻糖對  $\beta$ -胡蘿蔔素有最佳的保護效果(減少約 7%)。綜合糖浸漬組中，添加海藻糖與葡萄糖，有助於降低褐變度與減少多酚氧化酶酵素活性喪失，綜合糖浸漬組中又以綜合糖 IS6 (蔗糖:海藻糖:葡萄糖=60:20:20)有最好的數值表現，可作為最適之加工比例。

**關鍵字：**檬果蜜餞、真空浸漬、糖類、加工、品質

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# Effect of Vacuum Impregnation with Different Sugars on the Quality of Irwin Mango Preserves

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## Abstract

Mango (*Mangifera indica* L. cv. Irwin) fruit abound with nutrients and its rich season is from April to July in Taiwan. The excessive yield result from short and concentrated rich season, so develop the fruit preserves to enhance the utilization of fruit. In the present study, the vacuum impregnation with different sugars to accelerate the exchange of substances, thereby enhancing the speed and reducing the time of the sugar-soakage. Trehalose was employed in this study. Trehalose is one of non-reducing sugars, which cannot combine with the amino group of protein to form melanoidin then decreases its production. Results indicated that it only spent 40 minutes to reach to 23°Bx after vacuum impregnation. After drying at 60°C for 13 hr, the water activity (*aw*) reached to 0.652-0.703 and the moisture content compassed to 9-11%. The highest value of  $L^*$  and whiteness index (W.I.) were found when impregnated with trehalose. Simultaneously, the browning value of trehalose impregnation fruit significant lower than those of other treatments. For the  $\beta$ -carotene protection, trehalose exhibited the best effect (only loss 7%). Addition of trehalose and glucose reduced the degree of browning and decreased the loss of polyphenol oxidase enzyme activity in all integrated sugar impregnation groups. Among all the integrated sugar groups, the IS6 group (sugar: trehalose: glucose = 60:20:20) exhibited the best performance and which could be considered as the optimum processing ratio.

**Keywords :** Mango preserves, vacuum impregnation, sugars, processing, quality

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