Purification of bromelain-extracted virgin coconut oil through activated carbon and cuttlefish bone: A comparison

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Abstract

Enzymatic treatment in producing virgin coconut oil (VCO) may result in impure oil quality due to the manufacturing and storing processes that often cause damage, and decrease quality. VCO produced using pineapple extract as source of enzyme was green, caused by the green colour of the pineapple's leaves, peels, and crowns. Therefore, the present work aimed to improve the quality of bromelain-extracted VCO by purifying and examining its appearance, moisture content, and free fatty acid content. Activated carbon and powdered cuttlefish bone were used as the purifying agent/adsorbent. VCO purification was done in a glass beaker by adding 0.05 g of adsorbent into the 50 mL of VCO, and stirred for 30 min at various temperatures (30, 40, and 50°C) to obtain the best setting for purification. The appearance, moisture content, and free fatty acid content were tested to analyse the quality of VCO before and after purification. The colour, moisture content, and free fatty acid content diminished during purification with both adsorbents. The most substantial reduction was for moisture content. The activated carbon was superior in diminishing colour and free fatty acid content, but the cuttlefish bone exceled in lowering moisture content. Double steps purification may be needed to improve the overall quality of bromelain-extracted VCO.

Author keywords

acid number; adsorbent; appearance; moisture content; pineapple extracted-enzyme; VCO

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