

Monitoring the adulteration of virgin coconut oil by selected vegetable oils using differential scanning calorimetry.

ABSTRACT

The crystallization and melting enthalpy of virgin coconut oil adulterated with palm kernel oil (PKO) and soybean oil (SBO) were studied by using differential scanning calorimetry. Virgin coconut oil was spiked separately with PKO and SBO from 2% to 40% (w/w) of adulterant oils. Fatty acids of all oils were determined to complement the differential scanning calorimetry data. The heating curve of SBO-adulterated samples showed the adulteration peak appearing at the lower temperature region at 10% adulteration level. Regression analyses using stepwise multiple linear regression were used to predict the percentage adulterant with R^2 of 0.9490. PKO-adulterated oils did not show any adulteration peak but demonstrated a gradual decrease in the peak height of the major exothermic peak.

Keyword: Virgin coconut oil.