Influence of Palm Oil Enzymatic Interesterification on Physicochemical Properties of Ternary Fat Blends involving Anhydrous Milk Fat.

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The main differences between butter and margarines are related to the sensory characteristics of milk fat. Milk fat (MF) makes butter superior to margarines in taste and mouth feel. Simply adding butter flavor into margarine is not enough. Blends of anhydrous milk fat (AMF) with vegetable oils can lower the costs relative to butter while having the preferred taste of butter.

To further enhance the use of AMF (or its fractions) blended with vegetal oils and fats in margarines and shortenings, a better understanding of mixed crystallization effects between those lipids is required.

In the work reported here, ternary systems made of anhydrous milk fat (AMF) (or a fraction) with palm oil (PO) and rapeseed oil (RO) have been considered. Moreover as PO has a tendency to promote a phenomenon known as “post-hardening”, which can be a disadvantage for some food applications, PO has been batch enzymatically interesterified. Ternary systems made of AMF, interesterified PO and RO have been considered and compared to the previous one.

The objective of this study is to evaluate the effect of enzymatic interesterification of palm oil, on some physical characteristics (such as SFC, melting behavior, polymorphic stability, hardness) of the blends and highlight interactions that can occur (compatibility) between the investigated fats.