

Crystallization Propriety of Structured Lipids of Palm Stearin, Coconut Oil and Canola Oil

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A lot of food products contain a substantial amount of fat, of which a significant part is present in the crystallized form. One of the main functions of fat in food products is its contribution to the structure of the product. Many of the sensory attributes such as spreadability, mouth feel, snap of chocolate, texture are dependent on the mechanical strength of the underlying fat crystal network. The main goal of present research effort was evaluate the behavior of crystallization of blends of palm stearin, coconut oil and canola oil in different proportions. Structured lipids were synthesized with individual fats palm stearin, coconut oil, canola oil and their blends by chemical interesterification. The crystal structure was analyzed by DSC, polarized light microscopy at temperatures of 25°C and X-ray diffraction analyses. Characterization of crystallization kinetics revealed that crystal formations were altered according to palm stearin content in the original blends and as a result of the random rearrangement. X-ray diffraction analyses revealed that interesterification altered crystalline polymorphism. The interesterified blends showed a predominance of the β' polymorph, which is of more interest for food applications.

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