

FUNCTIONAL BEHAVIOUR OF LOW ERUCIC ACID RAPESEED
OILS IN FATTY FOOD SYSTEMS

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ABSTRACT

Hydrogenated low erucic acid rapeseed oils ("Lobra") behave quite differently from traditional rapeseed oils in their solid states. These differences in physical behaviour are easily observed in fatty food systems e.g. margarines. Products containing hydrogenated Lobra oils appear sometimes with grainy textures. Also other functional malbehaviour may appear. Crystal formation and crystal sizes are the fundamental and significant factors determining these physical properties and appearances.

Hydrogenated rapeseed oils varying in their erucic acid contents were studied by X-ray diffraction technique. These analyses have confirmed that essential differences exist between the oils with respect to their solid phase behaviour.

Crystal size measurements were performed using a permeametric technique. Specific surface areas obtained from these measurements were used for further calculations of average crystal sizes.

The polymorphic courses of the oils as confirmed by X-ray data seem to be in close relationship to crystal growths.

It can thus be concluded that the appearance of grainy textures and other malfunctions is explained by the phase transition $\beta \rightarrow \beta'$ together with a simultaneous crystal growth.

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SESSION I / SESSION I / SITZUNG I

EVALUATION OF RAPESEED MEAL AND PROTEIN FOR FEED USE / VALEUR
NUTRITIVE DES TOURTEAUX ET DES PROTÉINES DANS L'ALIMENTATION
DU BÉTAIL / BEURTEILUNG DES NÄHRWERTS DES RAPSÖLES UND DES
PROTEINES FÜR TIERFÜTTERUNG

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