

Specialty oleochemicals from palm oil via enzymatic syntheses

ABSTRACT

Palm-based specialty oleochemicals are special industrial chemicals from palm oil which are highly priced with high profit margins. These oleochemicals exhibit interesting properties such as excellent emolliency, surface activity, emulsifying properties as well as beneficial biological properties. As such, these compounds find many applications in the cosmetic, pharmaceutical and food industries. Enzyme catalysed syntheses of these chemicals are preferable as compared to their usual petro-chemical counterpart as these processes are nature identical and 'green'. Lipase-catalysed syntheses of specialty oleochemicals were carried out. The oleochemicals include amino acid esters, fatty alkanolamides, fatty esteramines, various wax esters, medium chain triglycerides and biologically active esters. The optimisation of the reaction conditions was discussed. The effects of the parameters influencing the reactions including temperature, reaction time, substrate molar ratio, amount of enzyme and solvents used were presented. The characteristics of the reaction system and the products were determined.

Keyword: Enzymatic; Oleochemicals; Palm oil; Specialty; Syntheses.