

Thermal stability of fatty acids in subcritical water

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Non-catalytic hydrolysis for fatty acids (FA) production using subcritical water has been studied as an alternative environmentally-friendly technology. However, high temperature and pressure of subcritical water can cause thermal degradation of FA, resulting in low yield. In this study, we performed the thermal decomposition of FA under various subcritical water conditions to investigate the thermal stability of FA. The primary reactions observed were isomerization and pyrolysis of FA. The main degradation pathway was deduced by analyzing the contents of decomposition products. The optimal reaction conditions were recommended to obtain high-yield FA production.