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Res. Agr. Eng.

Prošková A., Kopicová Z., Kučera J., Škarková L.:

Lipase catalyzed transesterification of rendering plant fat – Short Communication

Res. Agr. Eng., 56 (2010): 122-125

Soluble lipase (Lipozyme CALB L) was immobilized by covalent bond to chitosan pellets prepared from *Aspergillus niger* mycelium. This immobilized enzyme was compared with commercial immobilized lipase of the same origin (Novozym 435). Novozym 435 is also lipase CALB L commercially immobilized by sorption on poly-(methyl acrylate). Novozym 435 shows much higher conversion of rendering plant fat in methanol under optimum conditions, having, at the same time, lower optimum temperature and lower stability at higher temperature. Lipozyme CALB L immobilized on chitosan leads to a low conversion, regardless its higher thermal stability. Novozym 435 gives conversion of about 50% of theoretical value, which is in good accordance with basically catalyzed transesterification of rendering plant fat described elsewhere. Lipozyme CALB L

immobilized on chitosan gives conversion of about 10% of theoretical value only. The use of Novozym 435 in two-step system (enzyme-acid) seems to be more convenient compared with traditional two-step system (base-acid)

Keywords:

biofuel; biodiesel; rendering plant fat; transesterification; lipase

[fulltext]