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MODELING THE EXTRACTION PROCESS OF OIL FROM SEEDS OF WHITE MUSTARD (*Sinapis alba*)

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Abstract

White mustard (*Sinapis white*) is an annual plant of the *Cruciferae* family originating from the Mediterranean region and is cultivated in Europe and Asia, mainly for its seeds, but also for animal feed or crop rotation. White mustard seed is also an important source of vegetable oil that can be used as fuel. The chemical composition of mustard seed (*Sinapis alba*) includes glucosinolate (sinalbozida, sinapina free), essential oils, fatty oils (glycerides of oleic acid, linoleic, linolenic, palmitic, stearic, arachidonic, erucic), phytosterols and polysaccharides.
This paper presents the one step modeling extraction process of oil from the seeds of white mustard (*Sinapis alba*) using hexane as extraction solvent. Starting from the mathematical model describing the oil process extraction from the seeds of white mustard, optimum conditions for maximum efficiency were determined. The optimization process was performed using Generalized Reduced Gradient method (GRG).

Key words: modeling, oil extraction, optimization, profit, white mustard

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