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FATTY ACID PROFILE OF THE BLENDED OILS FROM THE CORN

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Blended oil market is stimulated bycon sumerdemand for healthy food products, which creates ob vious marketing and commercialprospects for manufacturers. However, inpractice, mixing different types of oils are often caused by economicconsiderations (dilution olive and sunflower oils bycheaper ones) and there is no need to improvethe irconsumerproperties. In creasingtheshare ofblended oils canals obeexplained by the desire of producers to expandthe oil productrange.

Producers use different oils for the production of the blended oil that meet the specifications (NSU 4536: 2006): sunflower, mustard, flax, unrefinedsoybean, corn, rapeseed, olive oil,and higherandfirstgrade palm refinedoil. Each of the seoils is characterized by its natural geneticallycaused fatty acid composition of different content of ω-3, ω-6 and ω-9 fattyacids.

The purpose of our research was studying the character is tics of the blended fatty acidoils, which produced from cornoil. To achieve this goal the blendswere created with the addition of cornoil (50-80%) foreachsample of flax, olive and rapeseed oil (50-20%).

Lipidssamplesof oil sand their blendswere extracted with chloroform-methanol mixture at a ratioof 2:1 according to Folchmethod (Folch J., 1957) and their fattyacid composition was determined by gas-liquidchromatography (M.B. Stefanik, 1985). Methyl estersoffatty acids were ob tained by the direct transesterification of the lipid extract by methylationin sea ledglassvialsinan in cubatorat 65°C for 24 hoursin a 3% solutionof HC1 in anabsolute methanol. Separation of fatty acids was performedon the chromatograph Chrom-4 (CzechRepublic) with flameionization detector (columnlength - 2.4 m, diameter - 4 mm, filler - polyethyleneglycol, totalityon a hromosorb - 60-80 mm, temperatureevaporation - 220°C, temperaturecolumn - 183°C, useof H2 - 30 ml/min, useofair - 400 ml/min). Fattyacids wereidentified by thedeterminingtime of their release after anintroduction, compared with the standard, which servedas the methylesters of the known fattyacids. For the analys i soft hepercentage of each fatty acids the totalarea of peak soft he curve, takingit 100% was calculated. Then, in the process off inding the curve peak percen tagesh are ofe ach fatty acid the percentagevalue was received of given fatty acid.

Asa resultofgas-chromatographicstudies it was foundthatnative cornoil is character ized by highrelative content of linoleic (ω-6) - 45% andoleic (ω-9) - 43% of acids. The content of polyunsaturated fatty acids ω-3 group was only 0.7%, and the ratio between ω-6 and ω-3 fattyacids was 69:1. Adding 30-40%flaxseed oil to the corn ones to has improving fatty acid composition of the investigated samples due to increasing of there lative content of polyunsaturated fatty acids ω-3group withs imultane ousreduction of there lative content of polyunsaturated fatty acids of ω-6 group. Thus, in the sample investigated containing 70% cornoiland 30% linseedoil a ratio between the content of polyunsaturated fatty acidgroups of ω-6 and ω-3 was 5.9:1, which fully meets the need sofsustainable healthy balanceddiet.

In conclusion, this blend can be recommended for producingas a functionalproduct with a balanced polyunsaturated fatty acids for groups of ω-6 and ω-3 composition.