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Hajrulai – Musliu Z., Uzunov R., Stojanovska–Dimzovska B., Dimitrievska-Stojković E., Angeleska A., Jankuloski D., Stojkovski V.

FATTY ACID COMPOSITION OF TRADITIONAL AJVAR PRODUCED IN MACEDONIA

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Introduction: Ajvar is a popular salad made in almost all Balkan countries in the winter months. Ajvar is made of roasted peppers and tomatoes and it can be sweet, piquant or hot. The preparing process has several disadvantages such as hydrolytic degradation due to water loss, oxidative degradation due to reaction of atmospheric oxygen with lipid molecules at the surface, and thermal degradation because of the high temperature required. This last drawback is important because it results in a decrease of nutritional value, due to the loss of polyunsaturated fatty acids (PUFAs), which are essential in the human diet. The major use of oil for preparing of ajvar is sunflower oil. During the process of frying, cooking oils should be stable because of abusive conditions of deep-fat frying, like high temperatures and moisture. The aim of this work was to study the fatty acids profile of some types of ajvar produced in Macedonia.

Material and methods: Samples were obtained from regular analysis for food quality at the Faculty of Veterinary Medicine. Extraction of fat and methylation of fatty acid methyl esters were performed according to the AOAC 996.06 method. Fatty acids were analyzed using a gas chromatograph (Hewlett Packard 5890) with a flame ionization detector. Individual methyl esters of fatty acids were identified by comparison of retention times to those of methyl esters of pure standards and expressed as percentages.

Conclusions: In our study were analyzed 52 samples of ajvar from 5 different manufacturers which are produced in Macedonia. In analyzed samples, the percentage of saturated fatty acid were 19.81% of which more represented was C16:0 with 16.22%. The percentage of unsaturated fatty acid ranged from 40.90-44.43%, of which more represented was C18:2n6 with 25.12%. Monounsaturated fatty acids were 24.54% from which TVA (trans vaccenic acid) was 0.27% while polyunsaturated fatty acids were 4.57%. From the obtained results and literature data we can conclude that the control of fatty acid composition in daily food is very important to prevent and treatment of various diseases of modern living.

Key word: Ajvar, Fatty acid, GC-FID.



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СОДЕРЖАНИЕ ЖИРНЫХ КИСЛОТ В ТРАДИЦИОННОМ ПРОДУКТЕ AJVAR, ПРОИЗВЕДЕННОМ В МАКЕДОНИИ

Введение. Ajvar - популярный салат, изготавливаемый почти всех балканских странах в зимние месяцы. Ajvar сделан из жареных перцев и помидоров, и это может быть сладким, пикантным или горячим. У процесса приготовления есть несколько недостатков, таких как: гидролитическая деградация из-за водной потери, окислительная деградация из-за реакции атмосферного кислорода с молекулами липидов на поверхности и тепловой деградации из-за требуемой высокой температуры. Этот последний недостаток важен, потому что он приводит к уменьшению пищевой ценности, из-за потери полиненасыщенных жирных кислот (PUFAs), которые важны в рационе питания. Основное использование масла для подготовки ajvar - подсолнечное масло. Во время процесса жарки масла для жарки должны быть стабильными из-за условий жарки фритюра, таких как высокая температура и влажность. Цель этой работы состояла в том, чтобы изучить содержание жирных кислот некоторых типов ajvar, произведенного в Македонии.

Материалы и методы. Образцы были получены из проб для оценки качества пищи на Факультете ветеринарной медицины. Определение жира и сложных эфиров метила жирных кислот были выполнены согласно методу AOAC 996.06. Жирные кислоты были проанализированы на газовом хроматографе (Hewlett Packard 5890) с датчиком ионизации пламени. Отдельные сложные эфиры метила жирных кислот были определены для сравнения времени задержки со стандартами сложных эфиров метила и выражены в процентах.

Заключение. В нашем исследовании были проанализированы 52 образца ajvar от 5 различных изготовителей, которые произведены в Македонии. В проанализированных образцах процент насыщенных жирных кислот составлял 19.81%. Процент содержания полиненасыщенных жирных кислот колебался от 40.90-44.43%, из которых более представленный был C18:2n6 с 25.12%. Мононенасыщенные жирные кислоты составляли 24.54%, от которых TVA составлял 0.27%, в то время как полиненасыщенные жирные кислоты составляли 4.57%. От полученных результатов и литературных данных мы можем прийти к заключению, что контроль состава жирных кислот в ежедневном питании очень важен для профилактики и лечения различных болезней.

Ключевое слово. Ajvar, Жирная кислота, GC-FID.