RESEARCHES REGARDING THE QUALITY AND PROCESSING OF SESAME SEEDS AND OF THE OBTAINED OIL

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SUMMARY

The oil obtained from the sesame seed (Sesamum indicum L.) is an excellent edible oil. Its popularity in Asia can be linked to the olive oil’s popularity in the Mediterranean countries. The sesame oil processed by cold pressing, as well the one processed by pressing, extraction and refining is used in the production of aliments (margarine, halvah, confectionary products), cosmetics, being also widely used for its therapeutic properties.

The sesame oil has balanced mono-unsaturated and poly-unsaturated fatty acid content, being unique compared to other oils, due to its high content of omega-6 fatty acid. Other specific components of the sesame oil are sesamol and sesamin (natural preservatives), vitamins (E and B6) and minerals (magnesium, copper, calcium, iron).

The paper presents the results of our experiments regarding the processing of sesame oil by cold pressing, from two types of sesame seeds bought from the commercial chain of Cluj. For the processing was used a screw press of low capacity (ca. 4-5 kg seed per hour) with changeable nozzle in diameter and fixed rotations speed.

The raw material was analyzed organoleptic. The raw chemical composition (after the Weende methodology) was determined for the seeds and for the pressing cake. The seeds were also examined bacteriologic (TNG/g) and mycologic (CFU/g). The acid value was determined for the cold pressed oil and for the oil extracted by organic solvent from the seeds and from the cake.

The results of the organoleptic exam of the seeds showed a qualitative variability and a structurally variability. The process efficiency for the processing of the different seeds type was different, being better for one type of the seed with values of 27,19 % oil production at a press productivity of 4,11 sesame seed kg/h. The pressing with screw press of the sesame seeds was possible only with nozzle’s diameter of 5mm. This could be correlated with the low humidity content of the seeds. The acid value of the oil presented values from 2,09 to 2,37 mgKOH/g sample for the cold pressed oil. The mycologic and bacteriologic exams of the seeds emphasized for one type of the seeds an extreme mycotic charge, being impossible the counting of the colonies units forming. The improper conditions of processing and storage of the seeds could explain this.

Based on the obtained results, the conclusion is, that further investigations are requested for the examination of the sesame seeds quality from the commercial chain and for the improving of its processing in decentralized units, which can be an income alternative for small and middle scale enterprise of oil processing. We recommend the initiation of a program of information of the quality and value of the sesame oil and of its processing according the HACCP principles. (Bibliography: with the author)