

The using of volatile substance analysis techniques to assess the physical and chemical characteristics of cold pressed oils from oilseeds with a unique composition of health-promoting substances.

At the present time, vegetable oils obtained by cold pressing are becoming increasingly popular on the market. The range of this type of products is widening. The the main sources of oil recovery are: rapeseed, sunflower, soybean, sesame, corn, peanut, grape and pumpkin seeds, and olive oil, but also the oils obtained from: quince tree, safflower, fennel-flower, cuckoo-flower, tarweed, sea-buckthorn, borage, evening primrose, white mustard are valuable. Many of these products are a good source of gamma-linolenic acid (cis-6 cis-9 cis-12-octadecatrienoic acid), which supplementation is indicated due to the current lifestyle. Cold pressing technology is ecological, simple and does not require a lot of energy, but the efficiency of this process is lower than that of the extraction technology. In addition, the product obtained in ecological technology is more susceptible to degradation of quality than obtained from the extraction method both during the pressing and storage process. Therefore, there is a justified need for precise control and evaluation of the obtained product. One of the techniques that can work in this area is the analysis of volatile substances. Thus, the scientific objective of the proposed research will be to assess the physical and chemical properties of cold-pressed health oils using electronic noses supported by gas chromatography. The scope of research will include the use of the abovementioned research techniques to control and evaluate the processes of pressing unconventional and conventional oils and their storage.

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Candidate profile: chemical education (graduate from master's studies), very good communication skills and self-presentation skills, good knowledge of laboratory techniques, good command of English, high self-discipline and motivation to acquire new knowledge.