COMPARATIVE STUDY FOR SUNFLOWER OILS EXTRACTION BY SOXHLET AND MECHANICAL PRESS METHODS

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SUMMARY

Sunflower (*Heliantus annuus* L.) is a widely found oilseed species of oleaginous grown in Romania. Sunflower seed is considered to be an important oilseed source crop due it’s highly nutrition oil composition. A large quantity sunflower seeds are source of raw materials required for industrial purposes in human and animal food and nonfood application.

The aim of our research work has been the study of oil extraction using two type extraction method. Oil extraction from sunflower seed usually involves 2 consecutive procedures. In the 1st, a mechanical treatment is applied. Most of the sunflower oil (press oil: PO) is realized in this step [1]. The 2nd extraction type, is subjected to the action of solvent, usually petroleum ether the rest of the oil (solvent oil: SO).

In this study, we propose the comparative researches between two method of lipids extraction by PO and SO. These methods were investigated on 14 Romanian genotypes of sunflowers seeds. First procedure consists in mechanical press of 300g seeds regarding efficient power of PO-extraction. The second procedure of research was the conventional extraction, using International Organization for Standardization (ISO) [2]. Soxhlet method (SO-extraction) involves the gravimetric determination of the oil from the petroleum extract from oilseeds [3] The petroleum extract is called “oil content”. Thus, 10 grams of sample were weighed and placed in a cellulose extraction cartridge. The cartridge was plugged with cotton wool and then placed in the Soxhlet extractor containing 100 ml of petroleum ether. After each extraction step, the solvent was these experiments removed in a rotary-evaporator for employable in another experiment.

The results obtained have led to the following conclusion: a large variability of oils quantity was detected in this study. Sunflower genotypes seed can be classified taking into account oils quantity. Between PO and SO methods extraction can be observed a large difference relating to the oils contends.
BIBLIOGRAPHY

