EXTRACTION YIELD OBTAINED BY PRESSING SUNFLOWER SEED

Ranko Romanić[1], Tanja Lužaić[1], Nada Grahovac[2], Sandra Cvejić[2], Siniša Jocić[2], Snežana Kravić[1], Zorica Stojanović[1]

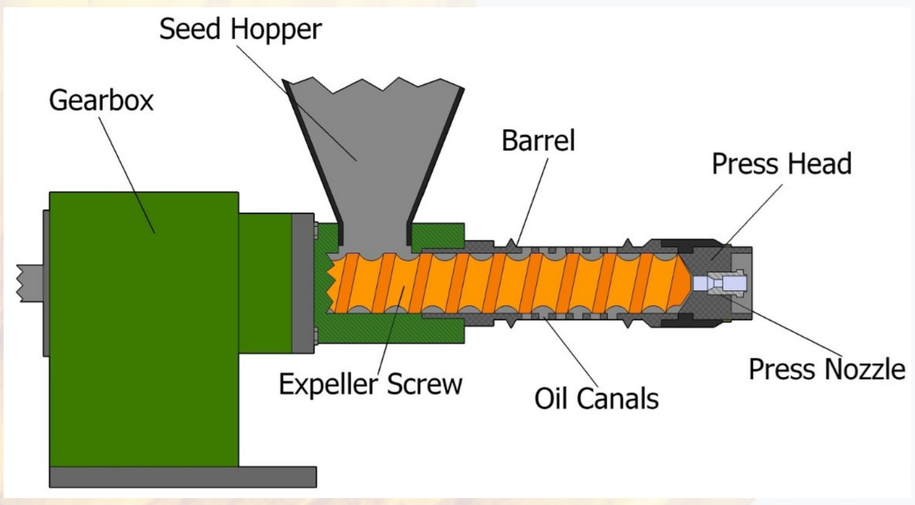
[1]Faculty of Technology Novi Sad, University of Novi Sad, Bulevar cara Lazara 1, 21000 Novi Sad, Serbia

[2]Institute of Field and Vegetable Crops, National Institute of the Republic of Serbia, Maksima Gorkog 30, 21000 Novi Sad, Serbia

Introduction

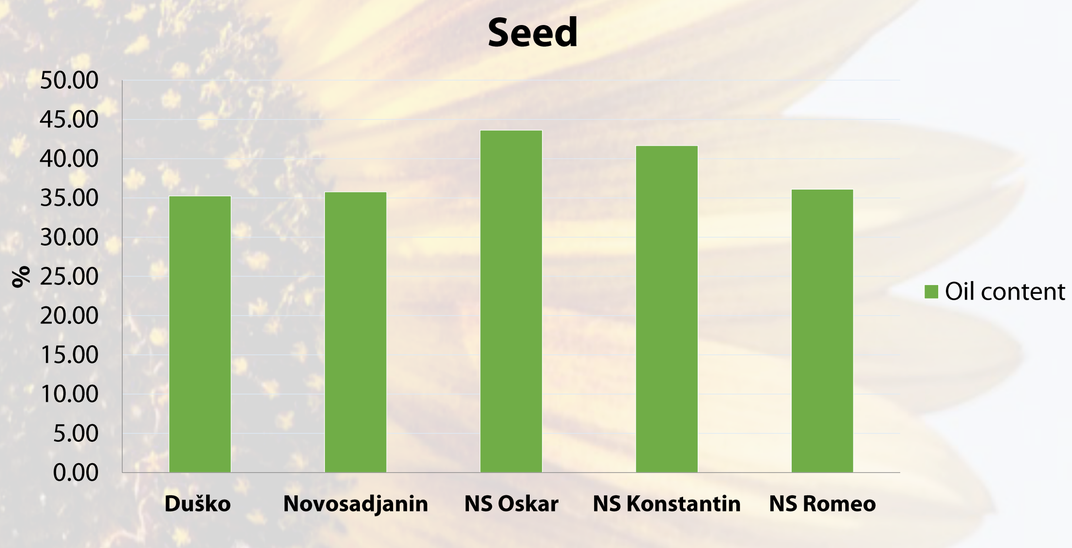
Hybridization of sunflower seeds went in the direction of increasing the oil content of the seeds as a major technological requirement. Today, oily sunflower hybrid seed contain over 40% of the oil. There are two ways of oil extraction: chemically using solvents or mechanically using presses. The oil yield is higher during solvent extraction, however, such oil requires further refining. A lower oil yield is obtained by extracting the oil by pressing but this oil requires minimal additional treatment. Oil yield obtained by pressing on the screw press is influenced by the characteristics of the seed (e.g. oil content, moisture, hull content, impurity content, etc.) and screw press characteristics.

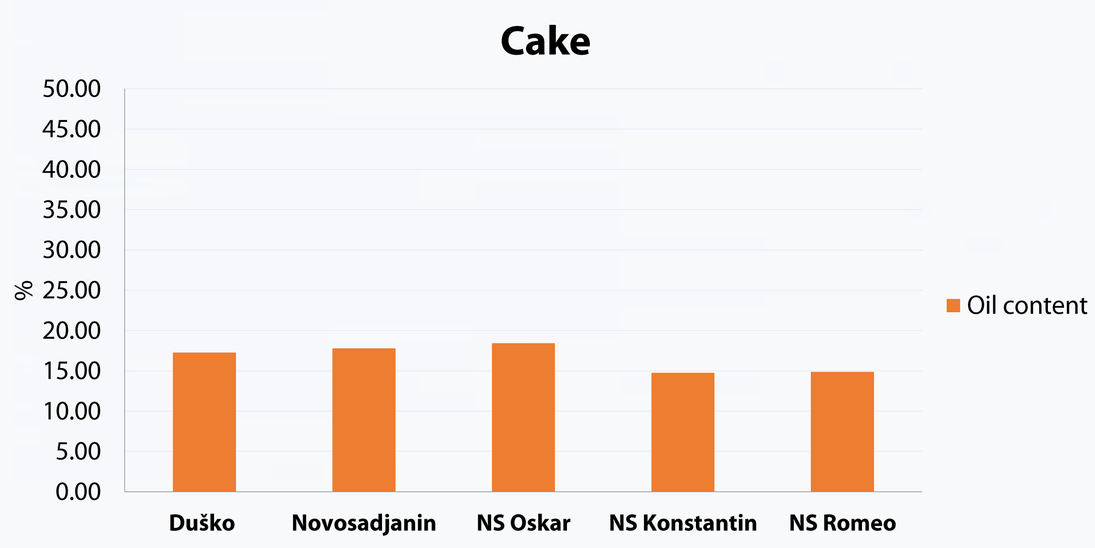
Material & Methods

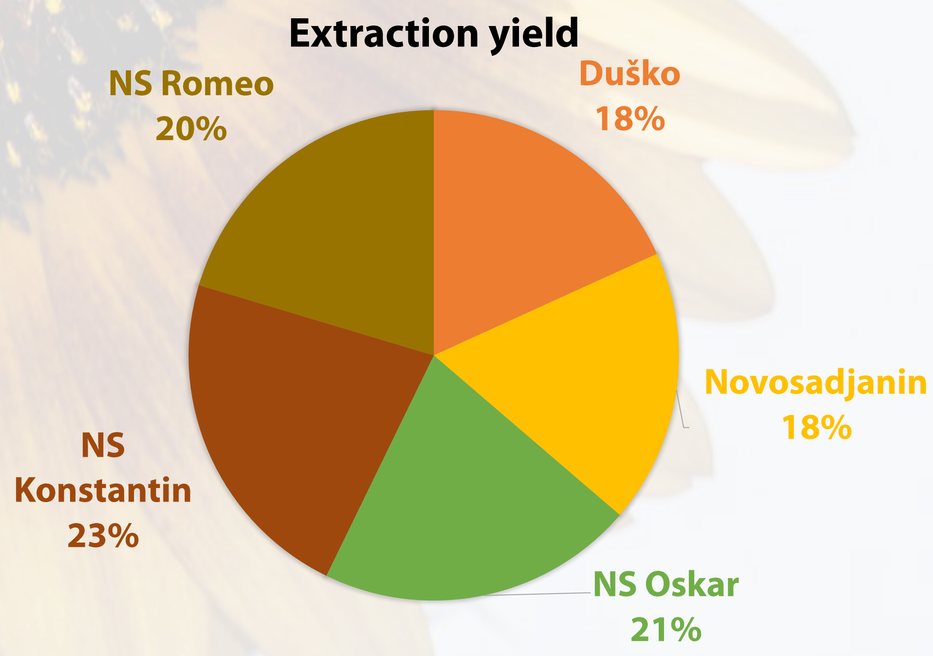


Oilseed sunflower hybrids grown in the experimental field of the Institute of Field and Vegetable Crops in Novi Sad, pressed on a screw press (capacity 15–29 kg h^{-1}, frequency 27.5 Hz), were tested. The yield was calculated on the basis of the oil content in the seed and the oil content in the cake obtained after pressing.

Results







Conclusions

Seed contained 35.26±1.98% (Duško sample) to 43.63±2.71% (NS Oskar sample) of oil. The highest oil yield of 75.61±1.99% was determined for the sample NS Konstantin containing 41.66±2.08% of oil in the seed, while the lowest yield 61.00 ±1.01% was determined for the sample Novosađanin containing 35.77±0.81% of the oil in the seed. Since in the tested samples the oil yields are not directly proportional to the oil content of the seed, it was confirmed that the other mentioned factors influence the oil yield.