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Book of Abstracts

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(3) Genetic resources

Evaluation of oil and protein content in oilseed rape

Dragana RAJKOVIĆ [1], Ana MARJANOVIĆ JEROMELA [1]*, Nada GRAHOVAC [1], Nada LEČIĆ [1], Vera POPOVIĆ [1], Dragan ŽIVANČEV [1] and Vladimir MIKLIČ [1]

[1] Institute of field and vegetable crops, Novi Sad; dragana.rajkovic@nsseme.com
* Correspondence: ana.jeromela@ifvcns.ns.ac.rs; Tel.: +381-21-489-8111

Abstract

Oilseed rape is the most significant member of *Brassicaceae* family in terms of economic value. Its oil is the third largest source of vegetable oil in world (USDA, 2016) after palm and soybean oil. This industrial crop is cultivated for high quality oil used in human nutrition, as well as for biodiesel production. High level of monounsaturated and omega-3 polyunsaturated fatty acids makes rapeseed oil good for heart health. After oil extraction from seed, remains meal which is rich in proteins and is used as feed. At a moment in Europe, there is limited output of vegetable proteins used as feed (Jasinski et al, 2018). Breeding efforts are focused not only on higher yield, but also in improving oil and meal quality of oilseed rape. Main goal of this research was to examine oil and protein content of 39 genotypes (lines, cultivars and one hybrid) from IFVCNS (Institute of Field and Vegetable Crops in Novi Sad) collection of oilseed rape. Oil content was determined by magnetic resonance analyzer (Newport 4000 NMR). Determination of total protein amount was performed with standard Kjeldahl (1883) method. Average contents of rapeseed oil and proteins are 40-45% and 18-25%, respectively. In this study, oil content was presented as percentage of seed and varied from 28,70% in NS-H-R3 father line to 48,51% in cultivar Jovana. Four genotypes, Zorica, 36R, 37R and Jovana had more than 45% of oil. Protein content ranged 19,22-26,02% with lowest value in genotype 37R and highest value recorded in NS-UR-14 father line. NS-UR-14 and Galickij had more than 25% of proteins. According to our results, contents of oil and proteins were in high significant negative correlation (r=-0,717). This study pointed out on rapeseed genotypes with higher levels of oil and proteins than average and thus gave us guide marks for further breeding.

Keywords: oilseed rape; oil content; protein content

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