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Effect of sowing time on grain yield, oil content, and fatty acids in rapeseed (*Brassica napus* subsp. *oleifera*)

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Abstract: Sowing time is an important factor affecting crop yield and quality, especially in arid and semi-arid regions. The aim of this research was to investigate the effects of sowing time on the growth, yield, and quality of rapeseed genotypes and to determine genotype \times sowing time interactions for grain yield and its related traits. The study was carried out using 8 winter rapeseed genotypes (H604049, H604038, H604041, Viking, Elan, Titan, Lorenz, and Trabant) and 4 sowing times (10 October, 20 October, 30 October and 10 November) during the 2005-2006 and 2006-2007 growing seasons. An NIRS system was used to determine oil, protein, glucosinolate and sinapic acid esters. Fatty acid analyses were done by the capillary gas chromatography method. Significant differences were found between sowing times for most of the traits measured. The lowest average seed yield (1027.40 kg ha⁻¹) was obtained from the latest sowing time, whereas the highest average seed yield (2437.50 kg ha⁻¹) was obtained from the earliest sowing time. The genotype H604038 produced the highest seed yield (1988.4 kg ha⁻¹), and it was followed by Trabant (1980.8 kg ha⁻¹) and Titan (1963.8 kg ha⁻¹). The highest oil content, at 42.0%, was obtained from genotype Lorenz at the first sowing time and from genotype Trabant at the second sowing time. No interaction was found between genotype and sowing time for oil content, but significant interactions were found for seed yield and glucosinolates. Seed yield significantly decreased as sowing time was delayed. The effects of sowing time on fatty acid composition were also significant. As a result, it was found that sowing time is an important factor for seed yield and quality in rapeseed.

Key words: Brassica, fatty acids, planting time, quality, varieties, yield

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