

Effect of Different Nitrogen Fertilizer Levels on the Performance of Some Canola Cultivars (*Brassica napus* L.) under Sandy Soil Condition of North Sinai

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TWO EXPERIMENTS were carried out during 2005/2006 and 2006/2007 seasons at the Experimental Farm, Faculty of Environmental Agricultural Science, El-Arish, Suez Canal University, North Sinai Governorate to investigate the influences of nitrogen fertilizer levels (30, 45 and 60 kg N fed⁻¹) on morphological and reproductive structures of three cultivars (Pactol, Topas and TD 201) of canola (*Brassica napus* L.). Results show significant differences among canola cultivars in all studied characters in the two growing seasons. Superiority of seed and oil yields (kg fed⁻¹) was recorded by Pactol cultivar. Increasing nitrogen fertilizer levels from 30 up to 60kg fed⁻¹ significantly increased all studied agronomic characters. Adding 60 kg N fed⁻¹ resulted in the highest plant height, number of branches and pods per plant in both seasons. There was significant effect of the interaction between canola cultivars and nitrogen fertilization on number of branches in both seasons and seed yield in the first season as well as oil yield in the second season. Cultivated Pactol cv. under 60 kg N fed⁻¹ application gave the highest values for the number of branches (12.38 and 14.08 in 1st and 2nd seasons, respectively), seed yield (1646.3 kg fed⁻¹) and oil yield (853.6 kg fed⁻¹), while the lowest values were gained by fertilizing Topas cultivar by 30 kg N fed⁻¹.

According to this investigation, to gain high productivity of canola, Pactol cultivar fertilized by 60 kg N fed⁻¹ could be recommended under sandy soil condition of North Sinai and similar areas.

Keywords: Canola, Cultivars, Nitrogen levels, Growth characters, Seed yield, Seed oil content.

Rapeseed (*Brassica napus* L.) is considered one of the most important edible oils all over the world, ranking the second order after soybean concerning world-cultivated area, seed production and oil production (Councelor & Attache, 1993) It is a newly introduced oil crop in Egypt to contribute on reducing oil gap; especially it can be cultivated in newly reclaimed areas out the old valley as North Sinai region under sandy soil and saline irrigation water conditions.

Many investigators found significant differences between oilseed rape cultivars in growth characteristics, yield attributes, seed and oil yield under different edaphic and climatic conditions (Afiah *et al.*, 1999; Ali & Hassan, 2002;