

Effect of Different Ratios of Ammonium: Nitrate on Photosynthesis and Fatty Acid Composition in Canola (*Brassica napus* L.) under Saline Conditions

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Abstract

In order to investigate the effect of different ratios of ammonium: nitrate on the photosynthesis and fatty acid composition in canola (*Brassica napus* L.) under different levels of salinity, an experiment was conducted as a factorial based on complete randomize design at Agricultural Research Center in East Azerbaijan in 2010. The first factor was different ratios of nitrogen sources to ammonium: nitrate at four levels as 0: 100, 25: 75, 50:50 and 75: 25 and the second factor was two levels of salinity as 0 and 200 mM NaCl. Results showed that the highest fresh and dry weights, leaf area and relative water content (RWC), photosynthesis rate and potassium concentration in the leaves were obtained at ammonium: nitrate (50: 50) in non-saline condition. With increasing salinity, fresh and dry weights, leaf area, relative water content (RWC), photosynthesis and leaf potassium were significantly reduced. It seems that with increasing salinity the application of nitrogen (nitrate to ammonium) ratio of 50/50 caused less injury in crop. In treatments using high amounts of ammonium by canola, higher levels of fatty acids was obtained than feeding conditions with nitrate. The highest ratio of fatty acids was measured in saline conditions when the application of nitrate :ammonium was as 25:75.

Keywords: Canola (*Brassica napus* L.), Salinity, Nitrogen, Fatty acid , Photosynthesis.

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