

Comparison of yield, yield components and seed quality (oil and protein content) of two rapeseed cultivars as affected by different levels of soil-applied nitrogen and zinc

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Abstract

A greenhouse experiment was conducted in order to evaluate the influence of different nitrogen (N) and zinc (Zn) levels on yield, yield components, seed quality and N and Zn contents of two cultivars of rapeseed (*Brassica napus* L.). In this study, two cultivars of rapeseed (Talayeh and Opera), three N levels (100, 200 and 300 mg/kg) and three Zn levels (0, 5 and 10 mg/kg) with three replications were used. The results showed that significant differences were observed between the cultivars in the studied traits. Increasing N and Zn significantly increased plant height, number of siliques per plant, number of seeds per siliques, 1000-seed weights, seed yield, oil, straw and root yields and protein content. Oil seed content was the highest in application of 100 mg/kg N rate and then decreased or increased at higher N and Zn rates, respectively. The highest grain yield, oil yield and protein percentage were obtained with 300 mg/kg N and 10 mg/kg Zn. Increase in seed yield was related to increase in the number of siliques per plant and number of seeds per siliques. Application of treatments increased concentration of N and Zn in the seeds, straw, and roots of both rapeseed cultivars. The interaction of N and Zn showed significant effects on most studied traits of rapeseed.

Keywords: Oil seeds, Qualitative traits, Protein Oil.

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