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Article title	**Sesame varietal response to microelements foliar application and soil N fertilization in loamy sand soil.**
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Article status	Published - 2015
The Journal	Fayoum J. Agric. Res. & Dev. 30(1):1-12.

Two field experiments were carried out at the experimental farm of the Faculty of Agriculture, Fayoum University, Egypt during 2013 and 2014 summer seasons to study the effect of microelements foliar application and nitrogen fertilization levels on growth, yield and yield components of two sesame (*Sesamumindicum* L.)verities, i.e., V_1: Shandaweel 3 and V_2: Sohag 1. A split split-plot arrangement in complete block design with four replications was used in both seasons. Two nitrogen fertilization levels, i.e., F_1: 40 and F_2: 60 kg N fed^{-1} allocated in the sub-plots and with three microelement rates, i.e., M_1: 200, M_2: 300 and M_3: 400 g fed^{-1} (were dissolved in 200L water fed^{-1}) distributed in the sub sub-plot, while varieties occupied the main plots. The microelement were added in form of EDTA (Fe 7.5%, Mn 3.5%, Zn 0.70%, Cu 0.28%, B 0.65% and Mo 0.30% w/w). The obtained results showed that Sohag 1 significantly surpassed Shandaweel 3 in growth parameters (i.e., plant height, stem diameter and number of capsules $plant^{-1}$) as well as yield and yield components (i.e., capsules weight $plant^{-1}$, seed yield $plant^{-1}$, seed, oil, biological yields fed^{-1}, harvest index and oil %. The N rate of 60 kg fed^{-1} significantly exceed the rate of 40 kg fed^{-1} over the two seasons. Microelement foliar application at 400 g fed^{-1} gave significantly the highest values for all parameters over the two seasons as compared to 200 and 300 g fed^{-1}.