



ORIGINAL ARTICLE

RESPONSE OF TWO VARIETIES OF OAT PLANT (*AVENA SATIVA L.*) TO DIFFERENT LEVELS OF NITROGEN FERTILIZER

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Abstract: A field experiment was implemented during 2018-2019 agricultural winter season in one of the fields of Agriculture faculty, University of Basra, to determine the response of two types of oats (Janzania and Shefa) to 3 levels of the nitrogen fertilizers (0, 75, and 150 kg N. ha⁻¹) and their effect on the characteristics of growth and yield. The experiment was applied as a design split-plot experiments, the design of the complete randomized sectors R.C.B.D was used with three replicates, and the application of nitrogen fertilization was put in the main plots and the cultivars in the sub-plots. The results showed that the cultivar (Shefa) significantly outperformed in plant height, with an increased rate of (15.76%) cm compared to Janzania cultivar, which in turn outperformed the characteristic of flag leaf area that gave the highest average of 27.75 cm². The varieties do not differ significantly the number of branches per m², while on the characteristics yield, Janzania cultivar a significant increase on the number of spikes m², number of grains in spike⁻¹ and the grain yield and which gave the highest averages (422.10 spikes per m² and 47.41 grains. spike⁻¹ and 7.25 t. ha⁻¹), Accordingly, no significant differences in the 1000-grain weight and protein ratio were found between cultivars. The results also showed the superiority of the higher level of nitrogen fertilization (N_2) in most vegetative traits and yield and its components, that gave a greater yield of grain of (30.95%) compared to the comparison treatment. No significant differences were observed between the levels of fertilization in the number of branches and Grain numbers per spike. The interaction between nitrogen fertilization and cultivars showed a significant impact on the area of the flag leaf, the number of spikes (m_2), and the number of grains per spike, as the combination ($V_1 \times N_2$) gave the highest average of the traits mentioned.

Key words: Oat plant, *Avena sativa L.*, Nitrogen fertilizer. R.C.B.D.

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