

## Response of Canola Traits to Integrated Fertilization Systems

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**Abstract :** In order to study the effect of different resources of farmyard manure, compost and biofertilizers on grain yield and quality of canola (Talaieh cultivar), an experiment was conducted at Kurdistan region. Experimental units were arranged in split-split plots design based on randomized complete blocks with three replications. Main plots consisted of two locations with difference in soil texture (L1): Agricultural Research Center of Sanandaj and (L2): Islamic Azad University of Sanandaj, as location levels. Also, five strategies for obtaining the base fertilizer requirement including (N1): farmyard manure; (N2): compost; (N3): chemical fertilizers; (N4): farm yard manure + compost and (N5): farm yard manure + compost + chemical fertilizers were considered in split plots. Four levels of biofertilizers were (B1): *Bacillus lentus* and *Pseudomonas putida*; (B2): *Trichoderma harzianum*; (B3): *Bacillus lentus* and *Pseudomonas putida* & *Trichoderma harzianum*; and (B4): control. Results showed that location, different resources of fertilizer and interactions of them have a significant effect on grain yield. The highest grain yield (4660 kg/ha) was obtained from treatment, that farmyard manure, compost and biofertilizers were co application in clay loam soil (Gerizeh station). Different methods of fertilization have a significant effect on leaf chlorophyll. Highest amount of chlorophyll (38 Spad) was obtained from co application of farmyard manure, chemical fertilizers and compost (N5 treatment). Location, basal fertilizers and biofertilizers have a significant effect on N, S and N/S of canola seed. Oil content was decreased in Gerizeh station, but oil yield had a significant increasing than Azad University station. Co application of compost and farmyard manure produced highest percent of oleic acid (61.5 %) and linoleic acid (22.9 %). Co application of compost and farmyard manure has a significant increase in oleic acid and linoleic acid. Finally, L1N5B3 treatment, that compost, farmyard manure and biofertilizers were co application in Gerizeh station in compare to other treatments, selected as a best treatment of experiment.

**Keywords :** soil texture, organic fertilizer, chemical fertilizer, oil, Canola

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