Impact of organic manure application and chemical composition of canola plant

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This investigation was conducted at the Farm of Sids Agriculture Research Station at Beni Suif Governerate to study the effect of farmyard manure application and some micronutrients (Zn, Mn and Cu) fertilization as foliar application on plant growth, yield and its components, seed oil quality quantity and nutrient uptake for canola plant as well as some chemical and physical properties for soil after harvesting . Pactol cultivar was used as an experimental material.The study included four farmyard manure (FYM) rates, i.e. 0,10, 20 and 30m3/fed. Micronutrients were added as foliar application two times, the first at thinning (400 L/fed) and the second at 15 days later(600 L/fed) at rate of:Zinc at rate of 750 mg Zn/L as ZnSO4.7H20 (22.7% Zn). Manganese at rate of 1000 mg Mn/L as MnSO4. H2O (32.5% Mn). Copper at rate of 250 mg Cu/L as CuSO4.5H20 (25.4% Cu).The design of the experiment was a factorial randomized complete block (four factors) with four replicates.The results for the means of the 2 seasons could be summarized as follow:A- Effect of farmyard manure: 1- Plant growth:All canola plant growth parameters , i.e. plant height and dry weight / plant at 90 days age and at harvesting, number of leaves per plant at 90 days age, number of first-145- Summary and Conclusionflower, flowering date and number of branches per plant were significantly affected by farmyard manure, where the application of 30m3/fed FYM produced the highest values. These effects of FYM were not affected by application or without application of Zn, Mn and Cu.2-Yield and its compounds:Increasing FYM manure significantly increased the yield (seed yield and straw yield) and its components (number of pods/plant, 1000-seed weight), except the number of seeds per pod which was not affected by manuring. The presence of Zn enhanced the effect of manure on number of pods / plant , while the reverse effect was obtained in the presence of Zn at 30 m3 FYM / fed . Also , There were interactions among Zn , Mn and Cu .3-Oil and protein percent and yields:Oil and protein percent and yields were significantly increased due to manuring except oil percentage which decreased by increasing manure rate . Increasing FYM up to 30m3/fed produced highest oil and protein yields. The presence or absence of Zn, Mn and Cu did not affect the response to FYM on these parameters.4-Nutrient uptake :Nutrient uptake (N, P, K, Zn, Mn and Cu) significantly responded to organic manure application, where increasing manure levels increased nutrient uptake. These effects were.