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Impact of Cobalt Form and Level Addition on Wheat Plants *(Triticum aestivum L.)*: I. Growth Parameters and Nutrients Status

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Abstract : Two pot experiments were conducted at greenhouse of National Research Center. Experiments were carried out to studies the effect of cobalt levels (0, 5, 10, 15, 20 and 25 mg kg^{-1}) and forms (cobalt sulphate, cobalt oxide and cobalt chloride) on growth and nutrient status of wheat.

The obtained results are summarized in the following:

1. Cobalt had a significant positive effect on wheat growth parameters and yield parameters under different cobalt forms and levels compared with the untreated plants. Cobalt sulphate recorded the maximum wheat growth parameters and cobalt oxide recorded the minimum wheat growth parameters.
2. The highest growth such as plant height, no. of leave $plant^{-1}$, fresh and dry weight of shoot and roots were obtained at the rate of 10 mg kg^{-1} soil as cobalt sulphate. It is clear.
3. Cobalt gave the significant increase of all minerals like N, P, K, Zn, Mn and Cu with all cobalt forms. Generally, the obtained data show that the highest macronutrients and micronutrient (except Fe) were obtained by using cobalt sulphate followed by cobalt chloride and cobalt oxide in decreasing order.
4. Addition cobalt significant decreased iron content in wheat shoots and roots in the end of vegetative stage compared with untreated plants.
5. Cobalt content in shoots and roots of wheat significantly increased with increasing cobalt concentration in plant media.

Key words: Wheat, Nutrient Status, Cobalt Sulphate, Cobalt chloride, Cobalt oxide.

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