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# Response of Cowpea to Foliar Micro-Nutrients Spray and Mulching

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THE STUDY was carried out at the Experimental Farm of the Faculty of Agriculture, Tanta University, during the summer seasons of 2006 and 2007. The objectiveof thestudy was to evaluate the effect of mulching and foliar micro-nutrient sprays on growth and yield of cowpea plants. Results showed that spraying cowpea with high concentration of Fe, Zn and Mn (600 ppm.) improved yield and its components. Mulching with colorless and blue polyethylene sheets and rice straw gave the highest plant growth parameters and seed yield, compared with the bare soil. In general, foliar spray with a mixture of some micro-nutrients (Fe, Zn and Mn) and mulching with colorless polyethylene, blue polyethylene and rice straw can be recommended for improving growth and increasing production of cowpea under El-Garbia Governorate conditions. Rice straw mulching will contribute to solving the problem of pollution resulting from burning.

**Keywords**: Mulching, Micro-Nutrients, Cowpea (*Vigna unguiculata*)

Cowpea (*Vigna unguiculata* (L) walp) is one of the most important vegetable crops grown in Egypt. It is considered as an inexpensive source of protein. It is mainly used for human consumption and livestock feed as well as soil cover as green manure (Abd El-Mageed *et al.*, 2001).

Micro-nutrients like Fe, Zn and Mn are known as essential minor-elements. They are playing an important functional role in the physiological process. Their deficiency is considered to be the main factors for limiting yield in many areas. Iron is essential for chlorophyll molecule formation but not a constituent of it (Holmes and Brown, 1957). The main role of Zn in plant metabolism is to activate a series of enzymes. Zn deficiency is thought to restrict RNA synthesis which in turn inhibits protein synthesis causing poor content of protein (Katyal and Randhawas, 1983). Also, Zn is essential for the synthesis of tryptophan and

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