

Response of Two Sunflower Cultivars to Foliar Application of Morphactin CF₁₂₅ and Thiourea

A.A. Amin*, E.M. Rashad* and Fatma A. Gharib**

**Botany Dept., National Research Centre and ** Botany Dept., Faculty of Science, Helwan University, Cairo, Egypt.*

A FIELD experiment was carried out for two successive seasons during 2005 and 2006 at the Experimental Station of National Research Centre, Shalakan, Kalubia Governorate, Egypt. The effects of morphactin (CF₁₂₅) at the concentrations of 0.0, 2.5, 5 and 10 mg/l, thiourea at 0.0, 500 and 1000 mg/l and their interactions, on vegetative growth, photosynthetic pigments, yield and its components as well as oil content of two Sunflower cultivars (Erolfor and Vedock) were studied. Vedock cultivar recorded significantly increased growth characters (plant height, stem diameter, number of leaves/plant, leaf area, leaf area index, head diameter total dry weight/plant), photosynthetic pigments, yield and yield components (*i.e.* number of seed/head, seed index, seed yield/plant, seed yield/fed., straw yield/plant, straw yield/fed. and harvest index) as well as oil content compared with Erolfor cultivar at different growth stages.

Foliar application of morphactin up to 5 mg/l or thiourea up to 1000 mg/l had significant effects in increasing vegetative growth, photosynthetic pigments, yield and yield components (*i.e.* number of seed/head, 100 seed weight, seed yield/plant, seed yield/fed, straw yield/plant, straw yield/fed and harvest index) as well as oil content compared with those of the control at the three physiological growth stages.

Generally, foliar application of morphactin at 5 mg/l and thiourea at 1000 mg/l singly or together were the most effective treatments to get better results in increasing growth characteristics, yield and its components, oil percent and increased total seed yield/fed (1.72, 1.74), straw yield/fed (3.06, 3.12) and oil yield/fed (4.33, 4.30) of these two cultivars. The increase in growth processes associated with these treatments are the consequence of a number of effects on the major physiological processes like photosynthesis.

Keywords : Sunflower cultivars (Erolfor and Vedock), Morphactin CF₁₂₅ , Thiourea, Growth characters , Photosynthesis , Yield , Oil content.

Sunflower plant (*Helianthus annuus* L.) is one of the most important oil crops in the world. It is grown in Egypt mainly for edible oil production. It is used in an attempt to reduce cardiovascular diseases. Some sunflower seeds are rich with oleic acid. Besides, the levels of anti-oxidant (tocopherols) and phytosterols are naturally high in the traditional sunflower oils (Maiti *et al.*, 2005). At the present