

Effect of Nitrogen Fertilization Level and Foliar Application of Some Nutrient Compounds on Some Flax Varieties

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TWO field experiments were carried out at El-Gemmeiza Agricultural Research Station during 2002/2003 and 2003/2004 seasons to study the effect of nitrogen fertilization level (0, 30 and 60 kg N /fed) and foliar application of some nutrient compounds (without spraying, mixture of ascorbic acid and citric acid, nofatrin) on growth, yield and quality of three flax varieties (*Linum usitatissimum* L.), i.e., two local varieties (Sakha 1 and Sakha 2) and imported one (Blenka).

The obtained results could be summarized as follows:

- Sakha 1 var. significantly surpassed Sakha 2 and Blenka in total plant height and straw yield per feddan and fiber length whereas Sakha 2 var. significantly surpassed Sakha 1 var. in main stem diameter, and seed and oil yields per feddan in both seasons.
- Blenka var. significantly surpassed Sakha 1 and Sakha 2 varieties in fiber yield per feddan and fiber fineness. Application of 60 kg N/fed gave the highest values for all studied characters , except fiber fineness.
- Spraying of organic acids surpassed other foliar treatments in plant height, straw and fiber yields per feddan and fiber fineness, while nofatrin was superior in seed and oil yields per feddan and main stem diameter in both seasons.
- The highest seed and oil yields/fed were obtained from Sakha 2 when fertilized with 60 kg N, whereas the highest value of fiber length was taken from Sakha 1 when fertilized with 60 kg N/fed. Finally, spraying Blenka and Sakha 1 with organic acid under 30 kg N/fed gave the best fineness and fiber length.

Keywords: Flax, Nitrogen fertilizer, Nutrient compounds.

In Egypt flax (*Linum usitatissimum* L.) is ranked second after cotton as a fiber crop regarding the cultivated area or its importance in industry. In the recent years, many efforts were devoted to increase the productivity of the flax through improving the soil fertility by enhancing their macro elements particularly from ,