

## **EVALUATION OF SOME PROMISING LINES OF FENUGREEK PLANT UNDER DIFFERENT SEEDING RATES AND SPRAYING WITH POTASSEIN - P**

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### **ABSTRACT**

Two field trials were carried out at El-Gimiza Research Station Farm during 2005/2006 and 2006/2007 seasons to study the effect of spraying potassein-P (30% K<sub>2</sub>O and 10% P) and three seeding rates (24, 36 and 42 kg/fed) on growth, seed yield, fixed oil, carbohydrate and protein percentages of two varieties (Giza 2 and Giza 30) and two promising strains (16 and 29) of fenugreek plant.

The results showed that fenugreek strain 29 was the latest in flowering and maturity. Strain 29 exceed Giza 2 var., Giza 30 var. and strain 16 in plant height, branches and pods number, 1000 seed weight and protein percentage. Whereas strain 29 and Giza 2 var. recorded the maximum seed and oil yield and carbohydrate percentage. Spraying of potassein-P significantly increased all characters under study than unspraying. Sowing fenugreek at low seed rate of 24 kg/fed significantly increased branches number, seed yield and its components, percentage and yield of oil and protein percentage.

Data showed that the interaction of varieties X seeding rates had significant effects on all studied characters except plant height and oil percentage. All the interactions were significant concerning 1000 seed weight and protein percentage. GLC analysis of fatty acids showed that the total percentage of unsaturated fatty acids was higher than the value of saturated one in all varieties and strains fixed oil. Linoleic acid was major components of unsaturated fatty acid. Giza 30 variety and strain 29 recorded the highest value of linolenic unsaturated fatty acid.

The best treatment for highest yield of seed and oil was that of sowing Giza 2 var. at low seed rate of 24 kg/fed and spraying with potassein-P while, maximum yield of seed and oil and protein percentage could be achieved by sowing promising strain 29 at 24 kg/fed seeding rate and spraying with potassein-P.

### **INTRODUCTION**

Fenugreek (*Trigonella foenum graecum*) is an annual herb belonging to Family Fabaceae, fenugreek seed is getting a lot of attention lately for its many medicinal virtues. It is very effective diabetes treatment, promoting substantial reduction in blood sugar and blood cholesterol (Bordia, 1997). Fenugreek is expectorant and inflammatory; it contains B vitamin that prevents pellagra and diogenin, which has gotten attention lately for its role in preventing breast cancer (Abdel-Barry *et al.*, 1997). The seeds also contain hormone precursors that increase breast milk, yield oral contraceptives, restore some hair growth, Scented seed contains vitamins (A, B and C), Iron, minerals and 23% protein as mentioned by (Rinzler, 1990).

It contains two alkaloids (trigonelline and choline), carbohydrate, fixed oil, mucilage and saponine.