INTRODUCTION

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Sugar beet *(Beta vulgaris L.)* is the second important sugar crop after sugar cane in the world, the importance of this crop not only comes from it successfully grows in the newly reclaimed lands by about 7000 fed and about 161000 fed[*♣] in old land but also from giving high sugar yield. In addition, the growth period of sugar beet is about half of sugar cane 6-7 months and has a lower water requirement.

On the other hand, in Egypt, Faba bean *(Vicia faba L.)* is one of the most important pulse crops, it is the main staple food for people, and the main source of protein for mild and low income groups. In addition to its important role in soil improvement.

Intercropping is the space dependent form of multi cropping in which two or more crops are grown in associations on the same field. Recently in Egypt, this form of crop intensification has attracted the attention to introduce new crops, and to avoid its competition to the others, into the tight rotation, particularly in the newly reclaimed areas.

In Egypt, the further increase in sugar demand, along with problems regarding land reclamation, has led to greater necessity for intercropping sugar beet with some other crops, such as faba bean, to increase sugar beet yield and to raise sugar production. Advantages of sugar beet associations with other crops are greatly affected by intercrop components phenology and response to limiting factors, components of total population and

♣ Ministry of Agriculture, 2005

geometrical distribution and manipulation of agronomic practices, as sowing dates and nitrogen fertilization.

This investigation aims to compare sugar beet and faba bean grown in different intercropping patterns with their sole cropping under different agronomic practices, e.g. plant population density, sowing dates and nitrogen fertilization in relation to growth aspects, biological efficiencies competitive relationships, and yield advantage cereal units and economic evaluation.

A particular interest of this investigation, in terms of competition relationships, is to apply the most optimum intercropping pattern to the new areas of Egypt where it was conducted in Noubaria region which is considered a good example for calcareous soils.

It is hoped that this investigation may add some information on better land utilization to increase sugar production through sugar beet-faba bean intercropping.

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