بسم الله الرحمن الرحيم

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بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى مسئولية عن محتوى هذه الرسالة.

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"EFFECT OF MECHANICAL PLANTING ON PRODUCTION OF SUGAR BEET YIELD"

A STUDY ON THE PERFORMANCE OF TWO SUGAR-BEET PLANTERS ONE OF THEM MANUFACTURED AND DEVELOPED TO SUIT SMALL HOLDINGS

By

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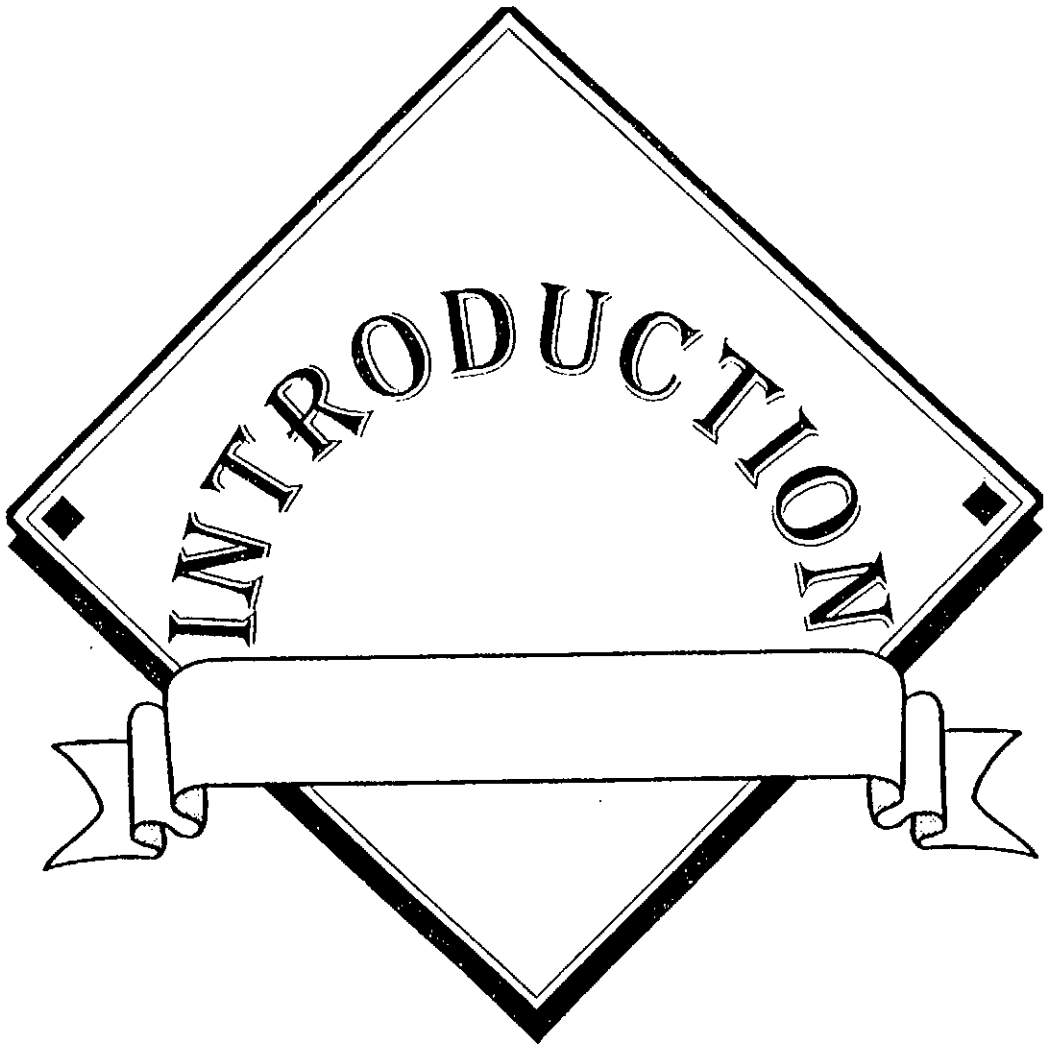

INTRODUCTION

1-INTRODUCTION

Sugar beet is considered as one of the most important crops, not only for sugar production, but also for producing fodder and organic mater for the soil. It extends to the use of its products in producing untraditional animal feed.

The production of sugar beet increased from 16943 fed. in 81/1982 to 70000 fed in 98/1999* in Kafr El-Sheikh. It is cultivated in a three year rotations during winter season from September till middle of November. It remains in the field from six to seven months. Its harvesting time depends on the cultivated varieties and planting time (sowing dates). There are some varieties recommended by the Research Institute of sugar crops for planting Egypt's local conditions namely, multigerm varieties and monogerm varieties.

Egyptian government has been aware to the high benefit of mechanizing its planting operation with the purpose of saving seed rate, less time and plant uniformity.

Up to now planting of seed is done manually in Egypt as most of local farmers own small land-holdings. Planting by machine is very important in saving hand labour, improving production, and allowing further mechanization. Uniformity of plant distribution with sufficient plant density is called upon for good beet quality. The main problem of sugar beet planting stage is that the randomizing in planting depth especially in planting on leveled land surfaces than make in the ridges. This problem could be solved in this work by developing a planter unit to plant the seed on ridged land directly.

Sugar beet became an important crop in Egypt as a source of sugar [sucrose]. The Egyptian government is encouraging the growers to increase the growing area of sugar beet. Until now the planing operation of sugar beet does not completely mechanized, although the manual planting is costly. The manual planting is needs too many labors and high quantity of seeds.

Planting methods considered as one of the most common problems for many crops. Consequently, mechanization of planting should be evaluated and studied to solve the problem which face the grower. The planter is very important to save labour, favorable seed distribution over the area, and allowing further mechanization.

* Source Ministry of Agricultural the central council for sugar crops 1999.

On the other hand design considerations of this machine must meet the following:

a) Low cost so that small farmer can use it;

b) Suitable for different grains and small seeds;

c) Simplicity in construction;

d) Easy operation, adjustment, repairs and maintenance;

e) Uniform placement of seed;

f) Arrangement for adjusting seed rate, and

g) Suitable depth control mechanism.

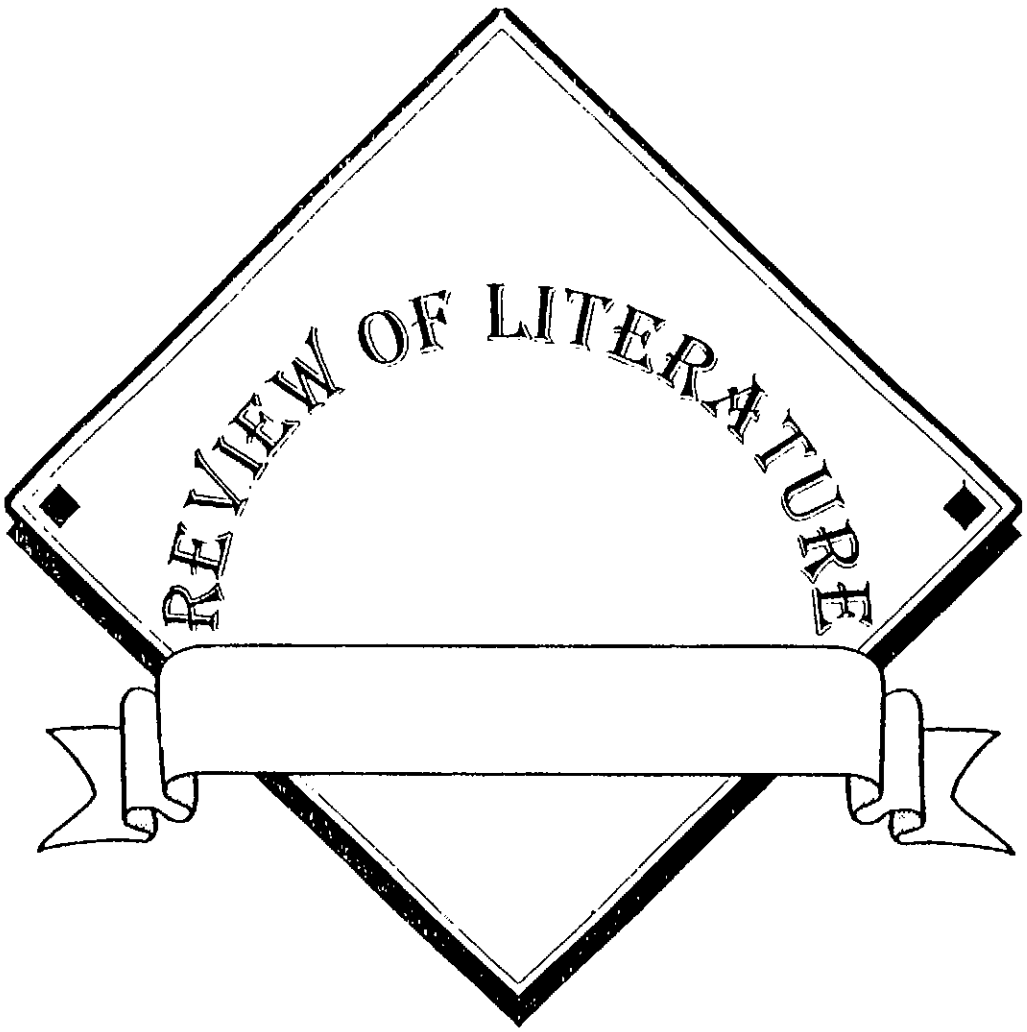
The current study was devoted to:

a) Determine the effect of mechanical planters performance on the different tillage depths;

b) Determine the effect of mechanical planting on seed placement and root characteristics, and

c) Evaluate the field performance and planting cost.

The objectives of the present study were to develop and to manufacture two rows of locally hand operated planting machine and to evaluate its performance compared with one row hand operated planting machine made in Germany.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