

INTRODUCTION

Sesame (Sesamum indicum L.) may be the oldest cultivated oil seed crop. Sesame seed is a rich source of oil and protein contents. Seeds contain more than 50 % of an excellent edible oil. In Egypt, the oil production met only about 30 % of local oil consumption. Recently, to excess such gap, oil crops such as sesame has attracted special attention. Therefore, it is of great importance to increase total production of sesame seed. This could be achieved by increasing the cultivated area, using high yielding varieties and/or improving the agronomic practices.

The cultivated area of sesame in Egypt ranged from 22,000* to 29136 faddan in 1986 - 1989 period, then it increased to 42149* faddan in 1990 season with an average seed yield of 505.2 kg/faddan.

Day / night temperature and photoperiod are important factors in sesame growth, flowering, as well as seed formation. Therefore no single cultivation factor is more important to increase sesame production than sowing date.

Since light distribution in the field is an important source of energy captured for photosynthesis and

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* The Annual Report of Agricultural Economy, 1990 Ministry of Agriculture, Giza, Egypt.

as a control factor of numerous growth processes, thus the plant density in the field is one of the most important aspects in energy utilization for dry matter production, which in turn affect the crop yield.

Water is often the primary limiting factor in any crop production. Therefore, irrigation management is very important concerning our agriculture strategy due to the shortage in water resources, as well as the extension of agriculture in the new reclaimed areas. It is necessary to determine the optimum water use for producing maximum yields, especially that sesame plants are sensitive to excess irrigation and / or water stress.

Therefore, the aim of this work was to study the effect of sowing date and plant density on evapotranspiration of sesame. Also, growth measurements, yield components, seed yield, oil content of seeds and the crop water use were studied.

REVIEW OF LITERATURE

The effect of sowing dates and plant densities on some characters of sesame crop will be reviewed under the following main headings :

- I. Growth measurements.
- II. Yield components.
- III. Seed yield.
- IV. Oil content of seeds.
- V. Crop water use.

I- Growth measurements :

A- Effect of sowing dates :

Tilak Raj et al. (1971), reported that number of leaves/ plant and stem height of sesame were reduced significantly by delaying sowing date beyond 16th of July to 26th of July or 5th of August.

Fayed (1974), in Egypt, concluded that sowing sesame Giza 25 variety on April 15 was the best for obtaining highest values of number of nodes/ plant, and plant height than those of late sowing .

Lazim and El- Nadi (1974), indicated that sowing sesame varieties as an early season crop on March gave significant increases in number of nodes/ plant, leaf and stem dry weight, leaf area/ plant and plant height at 42-