

REPORT ON SUNFLOWER RESEARCH AND PRODUCTION
IN THE U.A.R.

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The production of vegetable fats and oils in the U.A.R. depends mainly on the cottonseed and consequently limited the progress of other subsidiary industries related to the oil chemistry, particularly, the production of hydrogenated fats, soaps, detergents, cosmetics, fatty acids and glycerol. Other quantities of cottonseed oil were imported to compensate for the shortage in edible oils. Moreover, the increase of land area after the completion of the High Aswan Dam will offer a great possibility of raising the cultivated area under various oil crops. So sunflower for its high edible oil content may offer at the present little hope for the solution of the oil industry problem. Accordingly, attention will be given to increase the production of oils by cultivating high yielding varieties with improving their cultural practices.

During the last few years, the following work on sunflower was begun:

I. Producing high yielding varieties:

A. Introductions -

Seed of different varieties were introduced from foreign countries as shown in the following table.

<u>Country</u>	<u>No. of introductions</u>	<u>Variety name</u>
England	2	Pole Star - Jupiter
Germany	2	Advanced - Sunrise
Turkey	10	Girassol White
U.S.A.	4	Greystripe - Calif. No. 2
Russia	7	
F.A.O.	20	549-896-1100-1670-1707

The seed was planted in isolated plots and tested for:

1. Growth cycle
2. Plant height
3. Diameter of head
4. Resistance to diseases
5. Average yield per plant
6. 100 seed weight

The standard variety "Girassol White" is one of the introductions from Turkey and was produced by:

- a. Mass selection
- b. Progeny selection and line breeding methods.

The data from these experiments indicated that:

1. There was no significant effect for any of these treatments on the seed yield.
2. Wide spacings showed an increase in yield.

C. Fertilization-

Application as follows in split-split plot design:

Nitrogen at three levels: 0, 15, 30 kg./faddan

Phosphorus at three levels: 0, 15, 30 kg./faddan

Potassium at two levels: 0, 24 kg./faddan.

The data obtained showed that:

1. Application of nitrogen at 15 and 30 kg. increased the yield significantly at 1% level.
2. The seed yield did not respond to the addition of phosphorus and potassium.
3. It was noticed that addition of 30 kg. phosphorus increased the yield, such an increase which did not reach the statistical level of significance.

III. Correlation of characters:

Correlation coefficients were calculated for the following characters: plant height, stem diameter, head diameter, 100 seed weight and the yield of seeds per plant, respectively. All the relationships studied had shown a positive highly significant r value and are presented in the following table.

Characters correlated	r value			
	Plant height	Stem diameter	Head diameter	100 seed weight
Yield	.291**	.647**	.958**	.729**
Plant height		.626*	.439**	.250**
Diam. of stem			.756**	.590**
Diam. of head				.677**

Some factors affecting the production of sunflower:

1. Competes with the major summer crops such as cotton, rice, and corn, so
2. It has no place in the rotation.
3. Susceptibility of the crop to diseases such as root rot wilt, rust and Fusarium.
4. The difficulty in marketing the crop.
5. The income is less than that gained by planting other summer crops when planted on the same land.

Further work is now in progress to make adaptation and extension to plant sunflower in the new reclaimed lands.