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## PRESENT STATE AND PROSPECTS FOR THE DEVELOPMENT OF SUNFLOWER CULTURE IN IRAN

It is some 60 years that sunflower has been grown in Iran, first as edge plant, the seed of which was used as nuts, and later as an oil-seed crop for production of vegetable oil for human consumption as well as producing meal (cake) for feeding animals.

A substantial increase in consumption of edible oils during the last 20 years was resulted from the increased standard of living coupled with high rate of population growth. Increased demand for vegetable oils caused a rapid development of related industries, based mainly on imported raw materials as well as locally produced cotton-seed. Meanwhile, due attention was given to the possibilities of producing other oil-seed crops, including sunflower.

In 1956 some preliminary research work was started by collecting and evaluating the germplasm available in the country or received through international agencies.

An oilseed development company was established in 1966 to provide all the necessary incentives for expansion of oilseed cultivation. Through this company inputs comprising seed, fertilizers, machinery, insecticides, etc. are provided and extended to the farmers, and the purchase of products with a fixed price is guaranteed.

Sunflower which was one of the first crop taken up by this scheme, gave a very optimistic response by its rapid expansion in various parts of the country. But due to many agro-economic factors the trend gradually changed and some discouraging problems were faced.

Sunflower which first spread to irrigated as well as high-rainfall areas, could not economically compete with the traditional crops like cereals, cotton, sugar-beet, vegetables, etc. because of its susceptibility to the prevalent adverse conditions like draught, heat, wind, diseases, etc. Combination of these factors plus high bird damages common in many areas, caused a considerable gradual reduction in yield (Table 1).

Table 1

The Area, Production and Average Yield per Hectare of Sunflower in Iran (1967-75)

Year	Area, ha.	Production, tons	Yield, kg/ha
1967	1791	1446	599
1968	16162	7300	451
1969	41637	28123	675
1970	100000	70000	700
1971	79370	45043	568
1972	74930	54501	727
1973	74000	47000	635
1974	72000	43000	597
1975	76000	31000	405

At present sunflower seems to get pushed for cultivation in less favourable irrigated or rainfed areas, where it should be fitted into rotation with cereals or legume crops. It is therefore necessary to select varieties which have higher draught tolerance and more adaptability to a wider range of unfavourable conditions. Short plant stature is one of the characteris-

tics considered to reach this objective. Other breeding objectives are high yield, high oil and protein content and resistance to plasmopara disease which is widespread throughout sunflower growing areas of the country. The research programmes conducted by the Seed and Plant Improvement Institute of the Ministry of Agriculture and Natural Resources, are of applied nature and are aimed at selecting suitable varieties, hybrids and synthetics and at studying their cultural and management requirements. These programmes are conducted in 14 experimental stations representing various agro-climatic conditions.

A seed production scheme for multiplication of sunflower varieties and hybrids has also been successfully conducted by the Seed and Plant Improvement Institute during the last five years. Through this programme super-elite seed of the varieties is produced in the stations and further generations are grown under contract by selected farmers.

Research activities on sunflower in various institutes and universities are well-coordinated and a full cooperation exists among different organizations responsible for implementation of the results obtained.