

## SUNFLOWER PRODUCTION AND PROBLEMS IN IRAN

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The sunflower cultivation and research is very young in Iran. The wide regional distribution have been made the improvement of sunflower cultivation a complex problem in our country. In order to solve the existence problem we require skillful worker as well as many years research work. The results obtained in last few years has been shown that sunflower could be the basic oil crop in Iran. Most parts of Iran has been consider as very good area for cultivation of sunflower (figure 1).

Sunflower culture in Iran has increased rapidly since 1967. In comparison to the acreage of 1791 hectares in 1967 with average yield of 599 kg/ha, the total land under sunflower cultivation has been increased to 70 % in 1970, reaching 110 000 hectares with 700 kg/ha yield.

Climatological data for main Iranian sunflower cultivation area show that we require extensive local research programs in order to select the best suitable variety for each ecological zones. This should be done either by selection among available imported varieties or crossing and selection among local and imported varieties.

Summarized data in Table 1 show the performance of twelve varieties of sunflower in ten experiment stations in different regions of Iran. The data has been selected from the yield performance of the best and the worst varieties in each station. The yield data indicate that we do not have so much problems in north and northwest area with high rainfall compared with dry area in central and south of Iran. This wide regional distribution raised many questions about imported sunflower varieties in Iran.

Table 2 shows the response of Record variety of sunflower to different combinations of fertilizer in eight experiment stations. The amount of fertilizer which have been used were : 150 kg/ha urea, 150 kg/ha superphosphate and 100 kg/ha potassium sulphate. No response of sunflower plants to fertilizer applications in some area is another interesting subject which requires deep investigation.

Our sunflower cultivation problems, which resulted in low yield per unit area will be classified in five categories :

1. The problem of unfilled sunflower seeds.
2. Birds damage.
3. No suitable varieties for each ecological zones.
4. No suitable cultural practices.

5. No response of sunflower plant to fertilizer applications in some area.

These are the most important problems that we are facing in regard to sunflower culture as a new crop in Iran. The data for recent years has been shown that we had low yield performance with imported varieties in some regions of Iran with existence problems. This low yield per unit area in sunflower cultivation may be dropped our present acreage in near future. The sunflower in Iran should have the ability to compete with crops such as cotton and sugar beets. Considering present problems it seems that our farmers are not going to accept the sunflower as a suitable cash crop in Iran. Actually what we need in order to solve the existence problems is an extensive research program in sunflower cultivation in Iran. Fortunately we are aware of our problems and recently, there is a cooperative extensive research program among Agricultural Colleges, Ministry of Agriculture and Oilseed Research and Developing Company in Iran. Some parts of this research program in sunflower culture is carrying out recently by Department of Agronomy College of Agriculture Pahlavi University with partially financial assistance of Oilseed Research and Developing Company in Iran.

In our studies we are carrying out two types of research in sunflower :

1. Agrotechnical studies.
2. Basic physiological studies.

There is a promising outlook for future sunflower cultivation in Iran, if we succeed in solving the existence problems. It is our goal to increase yield per unit area and oil quality and quantity through basic physiological research studies and correct cultural practices.

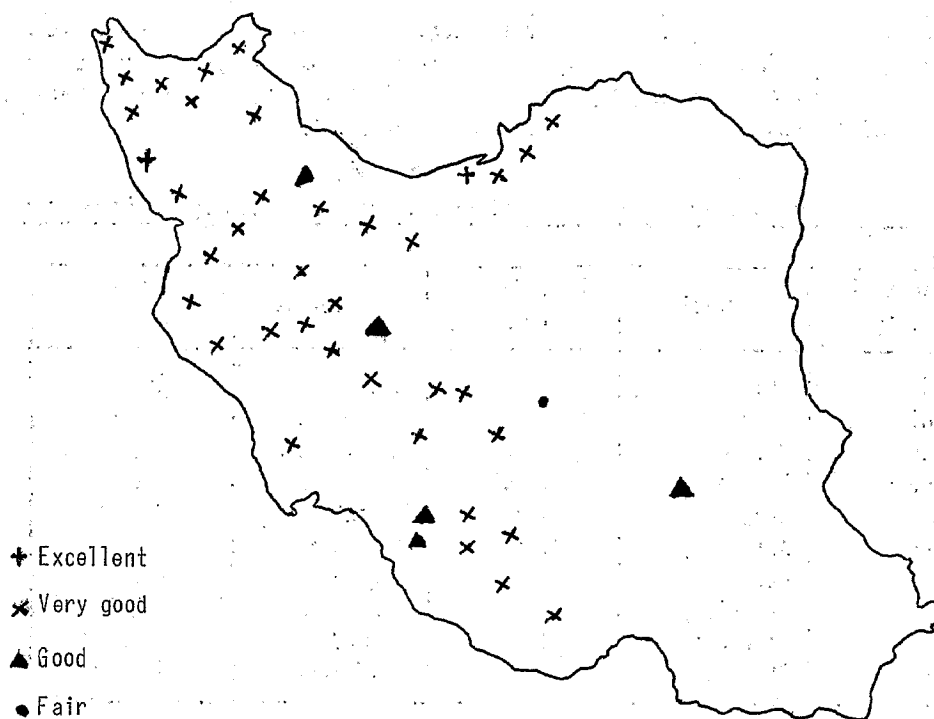
As I mentioned earlier, we are in the early stages of developing the over-all research program for sunflower culture in Iran. We solicit the suggestion, advice of countries, who had great success in sunflower investigations. I hope our research program at Pahlavi University will be meaningful to the needs of sunflower growers and processors in Iran and at international level.

Table 1 - Yield Performance of Sunflower Varieties to different Ecological Locations.

Experiment stations	Varieties	Max. Yield kg/ha	Varieties	Min. Yield kg/ha
Karaj	Vniimk	2 672	Record	2 190
Varamin	Record	3 533	Cherinianka	2 138
Gorgan	Record	2 860	Cherinianka	2 200
Mazandaran	Peredovik	3 560	Cherinianka	3 186
Moghan	Record	4 288	Vniimk	3 410
Esfahan	Armarisky	2 570	Cherinianka	2 300
Rezaï	Record	3 060	Samana	1 885
Darab	Armarisky	2 589	Cherinianka	1 761
Meshhad	Cherinianka	1 496	Record	968
Gilan	Cherinianka	1 500	Vniimk-8931	1 082

Table 2 - Response of Record Variety of Sunflower to different Combination of Fertilizers in ten Experiment Stations.

Experiment stations	Max. Yield kg/ha	Fertilizer	Min. Yield kg/ha	Fertilizer
Varamin	2 595	N.P.K.	2 052	O.O.K.
Karaj	2 557	N.P.O.	2 102	O.O.O.
Darab	3 019	O.O.O.	2 441	N.P.K.
Gilan	1 586	N.P.O.	966	O.P.K.
Meshhad	1 360	O.O.O.	1 152	N.O.O.
Moghan	2 068	N.P.O.	1 340	O.P.O.
Mazandran	3 580	N.P.K.	3 080	O.O.O.
Gorgan	3 020	N.P.K.	2 680	O.P.O.



CLASSIFICATION OF THE MAIN SUNFLOWER CULTIVATION AREA IN IRAN

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