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Improving the Method of Cultivating Kk-60 Sunflower Elite Seeds under Aral Sea Conditions

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Abstract--- *In this article, it will be explained that the sunflower, created in the conditions of the arid higher climatic conditions, is based on the seed scheme aimed at improving the quality of kk-60 sort, the assessment by generations is taken from mutual pollination among the most typical (and good) biotypes (in varieties) in the nursery, that is, on the basis of the*

Keywords--- *Sunflower, Inbriding, Basket, Productivity, Seed, Family, Autumnal Fertilization, Fastening, Kernels Output, Fertility, Typicity, Protein Content, Maturation, Pistachio.*

I. INTRODUCTION

Today, in many countries around the world in the cultivation of environmentally friendly products, the demand for vegetable oil is growing in comparison with butter for food, the use of oil products. Because vegetable oil has a number of advantages for human health compared to animal fat. In order to produce vegetable oil for human consumption in Uzbekistan, oil-bearing plants such as sunflower, safflower, soybean, flaxseed, sesame are grown. Of these crops, sunflower occupies one of the leading positions in terms of land area and application in the food industry, and the oil stored in its seeds (up to 56%) is environmentally friendly. This oil can be stained for consumption. It is difficult to find a useful field crop like sunflower. In the land vacated by cereals (angiz) as a secondary crop, sunflower yields 2.5 tons of seeds per 1 hectare, or 1200 kg environmentally friendly oil used for consumption, 800 kg grist (300 kg of protein), 500 kg of sunflower seeds (70 kg of yeast), 1500 kg of baskets, 30 kg of honey and many other useful substances are obtained with the help of bees in the flowering phase. In the middle of the last century in the regions of the former Soviet Union specializing in sunflower cultivation (North Caucasus, Moldova, Ukraine) the average yield of regionalized varieties was 13-15 quintal, seed oil content was 24-26% in hybrids it is 40-45 quintals, and the oil content in the seeds is 55-56 percent.

II. THE MAIN FINDINGS AND RESULTS

In recent years, a number of major events in the field of agriculture have been held in our country. First of all, in order to provide the population of the republic with cheap and high-quality food products, the structure of agricultural crops has been radically changed, the area under cotton has been reduced, and its productivity and quality have been improved, resulting in increased crop placement in the country.

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In order to provide the population of the republic with oil and oil products, it is important to plant and care for these crops in a timely manner, to carry out seed production and production of new varieties of sunflower adapted to soil and climatic conditions. Carrying out these agro-technical measures in a timely, complete and high-quality manner will create ample opportunities for high yields of oilseeds and the creation of an abundance of our tables. The creation of high-yielding early-maturing varieties and hybrids is also one of the most pressing issues in the selection of sunflowers.

H. U. Oka [1], R. Shabana and others believe that although the longevity of the usual period depends in most cases on the periodicity of temperature and lightness in the external environment, the conditions of cultivation (grinding, irrigation, and other technological factors), this indicator is characterized by hereditary signs at a high (hereditary coefficient H=0,52) level. As the growth period lengthens, the number of leaves increases (h^2=0,83) as the plant grows taller (H^2=0,944, h^2=0,61).

Sunflower grows well in fertile, icy, loamy-gray soils. It develops well when the soil reaction is 6-6.8. Sunflower does not grow well in heavy, muddy, sandy, acidic soils. Some varieties of sunflower give good yields even in weak and moderately saline soils (D.T. Abdukarimov, M.K. Lukov, [2]).

Sunflower is a light-loving, short-day plant, demanding of nutrients, especially potassium. 1 quintal absorbs 6 kg of nitrogen, 202 kg of phosphorus and 10-16 kg of potassium from the soil to form seeds and corresponding growth organs I.U. Anorboev T.B. Azizov [3].

According to A.B. Dyakov [4], shortening the growing season by 12-15 days leads to a reduction in yield by 20-30%. Under favorable conditions, up to 30 kg of oil per hectare is accumulated every day.

It is known that the correct choice of the method of cross-breeding, taking into account the genetic variability of the traits is important in achieving effective results in plant selection. The right choice of the method of crossbreeding allows breeders to be able to get combinations that embody the positive features of the primary parenting forms. After the fertilization process takes place in the flowering phase of the sunflower, a number of physiological and biochemical processes take place until the seed is fully mature. The period of complete formation of the seed consists of two stages, the first of which is the period of seed growth lasting 14-16 days. During this period, the nucleus of the seed is formed. In the second stage, the accumulation of carbohydrates, proteins and fats in the main organic compounds from the seeds takes place in 20-25 days. Physiological maturation of the seed is characterized by the accumulation of dry matter in it and a decrease in moisture to 35% (Azizov T.B., Anarbaev I.U. [3]).

From the above scientific research, the most promising KK-60 sunflower seeds created in Karakalpakstan for the improvement of varietal quality were selected from the most typical (and good) biotypes isolated from cross-pollination (within the variety) by cross-pollination". Pollination further enhances the relevance of these studies.

III. METHODS OF EXPERIENCE

Based on the above, the research was conducted in the laboratory "Selection and seed production of oilseeds" of the Karakalpak Agricultural Research Institute. The experiments began the previous year and involved individual

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specimens of the new promising variety of sunflower KK-60, which were involved in cross-pollination within the variety. In this year's experimental field, the seeds obtained from cross-pollination within the variety and sown consisted of more than 300 50-cell plot, which were placed according to the scheme of order HNNHNNHNNHNN. Two seeds were planted in each nest, and two or three leaves were sprouted. In weeding, a weak plant in the hive was selected and cut with scissors to avoid damaging the root of the seedling that was being left. In addition to the removal of the plants that were taken into account in the study, paper labels were hung on typical plants typical of the KK-60 sunflower navigation. During the growing season the following phenological observations are recorded in the field journal: time of sowing; emergence of grasses; formation of the harvest basket; flowering (period days); number of plants before flowering; ripening of seeds; the period (days) from full germination of grass to the formation of the harvest basket; the period from full germination to flowering; the period from flowering to ripening; the period from full germination of grass to ripening; harvest period.

During the ripening period, the pistachios were separated and dried by hand from a basket obtained from artificial pollination in each variety. In the laboratory, 1000 seed weight, yield, seed kernel yield, fat content and protein content were studied. The variance of seeds obtained from pollinated seeds in the variety from the main valuable economic characteristics of the items sown in the current year was analyzed by variance, the reliability of differences between seeds pollinated in the variety by Fisher's criterion (G), total error Sx, mean difference error Sd and the smallest difference (SD) was determined at a 95% confidence level.

In determining the germination rate, after the plants were fully harvested in each nursery, a label was hung on the plant in each row at the beginning of the basket formation period. Quantitative indicators of the results obtained during the study were mathematically processed using the method of statistical analysis (Dospekhov-1985).

IV. Research Results And Their Discussion

Within the field of oilseeds of agricultural production, in the selection of plant seeds in sunflower should pay attention to the identification of plant traits, to maintain seed quality in the future, increase productivity and improve the specific traits of the variety in any conditions. The method used in the preparation of elite seeds of promising and regionalized sunflower varieties has allowed meeting the demand for seed quality over the years. However, over the next 10-15 years, there have been major changes in agricultural sunflower production. In a market economy, a completely new legal framework has been created for opportunities for communication between breeders, seeders and seed scientists in state production. The urgency of growing and propagating elite and super elite seeds of sunflower varieties by originating organizations has arisen. At the same time, it is necessary to solve the problem of seed production, which is very important in today's conditions, to improve the quality of new varieties of sunflower and to recommend quality sunflower seeds to elite seed farms in accordance with the requirements of the State Standard.

In our experiments, KK-60 super elite seeds of sunflower selected in order to study the varietal performance of seeds obtained from cross-pollination within the variety were planted in 60x30x1 scheme at the optimal time in the first year nursery. With the full recovery of the plants and the beginning of the basket formation period, a label was

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hung on each plant to determine the varietal performance of 50 plants relative to the original 300-row variety. In addition, two field observations were conducted in the following periods:

- Before the sloping flowering of plants
- Before harvesting during the cooking period, when the back of the baskets begins to turn yellow and ripen.

In these field observations, to study the fertileness of the sort, all non-varietal plants were excluded from the remaining plants, except for the 50 plants on which the label was hung. The following cases occurred when analyzing 50 plant indicators in each row to study the fertileness of seeds obtained from cross-pollination within the KK-60 variety in this year's planted nursery. It was observed that 1 plant on the formation of the harvest basket, no on the plant height, no on the number of leaves, 1 on the color of the seeds in the baskets and 1 plant on the elasticity is not typical of the variety. In the laboratory, when characteristics such as seed yield, fat content, and protein content were detected in the seed, non-varietal cases were observed in two samples by seed yield and 1000 seed weight. When analyzing the general situation on these traits, it was found that 5 out of 100 plants of 300 rows studied on KK-60 sunflower variety obtained by cross-pollination within the variety were atypical plants, which showed that KK-60 sunflower variety has 95% purity.

Table 1: Variety Indicators for the First Year in the Nursery of KK-60 Variety Obtained from Cross-pollination of Sunflower

Sunflowersort	Number of plants in two rows studied, pcs	Number of atypical plants (by characters), pcs						
		On the formation of the basket	By the color of the seeds in the basket	In terms of basket flexibility	At the expense of the seed core	Byweightof 1000 seeds	Total	Fertility in percent
KK-60	100	1	1	1	1	1	5	95

In an individual selection nursery, if up to 2 atypical plants per family were encountered relative to the standard, they were uprooted. If more than 2 atypical plants were found in each family in the individual selection nursery, they were removed. In this single-seedling nursery, seeds obtained from cross-pollination based on the method of inbreding in the variety were analyzed on such indicators as the yield per bush of KK-60 sunflower variety planted this year, weight of 1000 seeds, seed yield, the results of which are given below.

When we studied 25 families in the KK-60 variety of sunflower planted this year in the individual selection nursery, the yield in the individual selection nursery was 5 grams per 5 grams. Class 1 with 131-135 grams, Class 2 with 136-140 grams, Class 3 with 141-145 grams, Class 4 with 146-150 grams and Class 5 with 151-155 grams. It was found that the main part of the plants was concentrated in the 3 classes in the range. We therefore considered these classes to be the main part, and the two classes at the two edges to be atypical classes.

When we added the plants encountered in the two classes on both sides, we kept the families with up to 2 plants per plant without excluding them in terms of productivity. When we added the plants encountered in the classes on both sides, we subtracted 25 families with more than 2 plants per family. Thus, 1 family was excluded from the productivity index and 24 families were retained (Table 2).

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Also, when we studied the seed yield mark of the Sunflower kk-60 in the current year-planted single-selection seedlings of seeds from cross-fertilization, the average figure was from 65,7 percent to 66,2 percent, the data of the author of the varieties indicated that the seed yield of this variety is 65,0-36,2 percent.

According to the seedmagzi output mark, 25 families made up 5 classes when we studied two percent, that is, 62-63 percent Class 1, 64-65 percent Class 2, 66-67 percent Class 3, 68-69 percent Class 4 and 70-41 percent Class 5. It was found that the main part of the plant was concentrated in the 2-th class, 3-th class and 4-th class in the range.

We, therefore, considered these 3 classes to be the main part, and the two classes at the two edges to be atypical classes. When we added the plants encountered in the two classes on both sides, we kept the families with up to 2 plants per plant in the waste at the seed core expenditure mark.

Table 2: Variability of KK-60 Cultivar in terms of Plant Productivity Obtained from Cross-pollination of Sunflower

№	Families	k=5 gm					N	M +m	δ	V %
		131-135	136-140	141-145	146-150	151-155				
1	3	-	21	23	6	-	50	141,5+0,5	3,4	4,2
2	5	-	10	26	13	1	50	143,3+0,5	3,4	4,1
3	6	-	10	24	15	1	50	143,7+0,5	3,8	4,5
4	10	-	10	26	14	-	50	143,6+0,5	3,7	4,5
5	14	-	8	22	18	2	50	144,4+0,6	3,9	4,6
6	16	1	16	20	13	-	50	142,5+0,6	4,1	4,9
7	18	-	19	23	8	-	50	141,9+0,5	3,5	4,3
8	22	-	10	22	16	2	50	144,0+0,6	4,0	4,8
9	25	3	13	22	12	-	50	142,3+0,6	4,3	5,2
10	27	1	13	23	13	-	50	142,8+0,6	3,9	4,7
11	28	-	6	23	19	2	50	144,7+0,5	3,7	4,4
12	30	-	21	24	5	-	50	141,4+0,5	3,7	4,6
13	31	2	18	24	6	-	50	141,4+0,5	3,7	4,6
14	35	-	5	22	21	2	50	145,0+0,5	3,7	4,3
15	41	2	17	27	4	-	50	141,3+0,5	3,5	4,2
16	42	2	19	23	6	-	50	141,3+0,5	3,7	4,6
17	45	2	18	23	7	-	50	141,5+0,5	3,8	4,7
18	50	-	14	25	10	1	50	142,8+0,5	3,8	4,6
19	54	-	8	25	15	2	50	144,1+0,5	3,8	4,5
20	55	-	5	24	19	2	50	144,8+0,5	3,6	4,3
21	61	1	10	23	15	1	50	143,5+0,6	4,1	4,9
22	65	2	17	23	8	-	50	141,7+0,6	3,9	4,8
23	68	-	6	24	18	2	50	144,6+0,5	3,7	4,4
24	71	1	13	22	14	-	50	142,9+0,6	4,0	4,8
25	73	2	19	23	6	-	50	141,3+0,5	3,7	4,6

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When we added the plants encountered in the atypical classes on both sides, we subtracted the families with more than 2 plants encountered in each family, the 18th, 31st, and 45th families. Thus, 3 families were excluded on the basis of seed nucleus expenditure and 22 typical families were retained (Table 3).

Table 3: Variability of Seed Yield in Single-seedling Seedlings of KK-60 Variety Obtained from Cross-pollination of Sunflower

№	Families	k=2 percent					n	M +m	δ	V %
		62-63	64-65	66-67	68-69	70-71				
1	3	2	21	23	4	-	50	65.7+0.2	1.4	3.9
2	5	1	15	25	8	1	50	66.2+0.2	1.6	4.3
3	6	2	19	24	5	-	50	65.8+0.2	1.4	4.0
4	10	1	15	26	7	1	50	66.2+0.2	1.5	4.2
5	14	1	19	23	6	1	50	66.0+0.2	1.6	4.3
6	16	2	16	27	5	-	50	65.9+0.2	1.4	3.9
7	18	3	15	28	3	1	50	65.9+0.2	1.5	4.3
8	22	2	15	29	4	-	50	65.9+0.2	1.4	3.8
9	25	1	16	28	4	1	50	66.0+0.2	1.4	4.0
10	27	1	20	26	3	-	50	65.7+0.2	1.3	3.6
11	28	2	16	27	5	-	50	65.9+0.2	1.4	3.9
12	30	1	16	26	7	-	50	66.1+0.2	1.4	3.9
13	31	2	15	26	6	1	50	66.1+0.2	1.6	4.4
14	35	2	20	25	3	-	50	65.7+0.2	1.3	3.8
15	41	1	18	26	5	-	50	65.9+0.2	1.4	3.8
16	42	2	17	27	4	-	50	65.8+0.2	1.4	3.8
17	45	1	17	25	5	2	50	66.1+0.2	1.6	4.5
18	50	2	18	26	4	-	50	65.8+0.2	1.4	3.9
19	54	2	18	25	5	-	50	65.8+0.2	1.4	4.0
20	55	1	16	28	4	1	50	66.0+0.2	1.4	4.0
21	61	1	18	26	5	-	50	65.9+0.2	1.4	3.8
22	65	2	18	26	4	-	50	65.8+0.2	1.4	3.9
23	68	1	20	25	3	1	50	65.8+0.2	1.4	4.0
24	71	2	19	24	5	-	50	65.8+0.2	1.4	4.0
25	73	2	18	25	5	-	50	35.8+0.2	1.4	4.0

When we studied the KK-60 variety of sunflower in the laboratory under individual conditions, the average weight was 1000.8 grams per 1000 seeds and according to the author of the variety, the average weight of 1000 seeds per 1000 seeds was 81.5-82.0 grams.

When we studied 25 families on this 1000 seed weight mark of 0.5 grams, it consisted of 5 classes i.e. 80.6-81.0 grams 1st class, 81.1-81.5 grams 2nd class, 81.6-82.0 grams 3rd class, 82.1-82.5 grams 4th class and 5th grades of 82.6-83.0 grams. It was found that the main part of the plants was concentrated in the 2nd, 3rd and 4th grades in the interval. We therefore considered these 3 classes to be the main part, and the two classes at the two edges to be atypical classes. When we added the plants encountered in the two classes on both sides, we saved the families that encountered up to 2 plants in each family without wasting 1000 bushels on the weight mark. When we added the plants found in the atypical classes on both sides, we subtracted the families with more than 2 plants found in each family, i.e., the 18th, 31st, 45th, and 61st families. Thus, 4 families were excluded on the 1000 seed weight mark and 21 families were retained (Table 4).

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Table 4: Variability of KK-60 Variety Obtained by Cross-pollination of Sunflower by Weight of 1000 Seeds in a Single Seedling Nursery

№	Families	k=0,5 gm					N	M + m	δ	V %
		80.6-81.0	81.1-81.5	81.6-82.0	82.1-82.5	82.6-83.0				
1	3	1	10	26	13	-	50	81.8+0.5	0.4	7.0
2	5	-	10	28	11	1	50	81.8+0.5	0.4	6.7
3	6	-	11	29	10	-	50	81.8+0.5	0.3	6.2
4	10	1	11	26	12	-	50	81.8+0.5	0.4	7.0
5	14	1	10	27	11	1	50	81.8+0.5	0.4	7.2
6	16	1	9	28	12	-	50	81.8+0.5	0.4	6.7
7	18	2	10	27	10	1	50	81.8+0.6	0.4	7.6
8	22	1	10	26	12	1	50	81.8+0.5	0.4	7.3
9	25	1	13	24	11	1	50	81.8+0.6	0.4	7.6
10	27	2	9	28	11	-	50	81.8+0.5	0.4	7.1
11	28	1	12	25	12	-	50	81.8+0.5	0.4	7.1
12	30	-	10	28	11	1	50	81.8+0.5	0.4	6.7
13	31	2	14	22	11	1	50	81.8+0.6	0.4	8.1
14	35	-	11	25	12	2	50	81.8+0.6	0.4	7.4
15	41	-	12	23	14	1	50	81.8+0.5	0.4	7.3
16	42	1	10	26	12	1	50	81.8+0.5	0.4	7.3
17	45	-	12	24	11	3	50	81.8+0.6	0.4	7.8
18	50	1	11	25	12	1	50	81.8+0.6	0.4	7.5
19	54	1	12	23	13	1	50	81.8+0.6	0.4	7.7
20	55	1	10	24	14	1	50	81.8+0.6	0.4	7.5
21	61	2	12	25	10	1	50	81.8+0.6	0.4	7.9
22	65	1	11	24	13	1	50	81.8+0.6	0.4	7.6
23	68	2	8	25	15	-	50	81.8+0.6	0.4	7.4
24	71	-	15	23	11	1	50	81.8+0.5	0.4	7.4
25	73	1	8	27	13	1	50	81.8+0.5	0.4	7.1

In general, the KK-60 variety of sunflower obtained from cross-pollination within the variety was analyzed in a single selection nursery for all studied traits such as plant height, number of leaves, ripening, productivity, seed kernel yield and weight of 1000 seeds. 15, 35, 58 families, 15, 45 families by number of leaves, 35 families by speed, 18 families by speed, 25 families by productivity, 18, 31, 45 families by seed and 1000 18, 31, 45 and 61 families by seed weight the dog. In other words, out of 25 studied families, 4 families (15, 25, 35, 45 families) were excluded and 21 good families were selected.

V. CONCLUSIONS

Based on the results of the above analysis, it can be concluded that 21 families were selected according to the variational analysis, which was selected from the cross-pollinated KK-60 cultivars without waste. Continuing research in next year's nurseries demonstrated high productivity and high productivity in its zygositystate of varietal characteristics.

In this study, the selection of baskets was selected as a continuation of our study to determine the formation of large baskets so that the inheritance of the character takes place in a specific way.

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