PRODUCTIVITY OF EARLY VARIETIES OF SUNFLOWERS SOWN AT DIFFERENT TIMES IN IRRIGATED CONDITIONS OF UZBEKISTAN

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Annotation
This article provides information on the growth and yield of varieties of sunflower grown in irrigated conditions of Uzbekistan - March 10, March 20, March 30, April 10 and April 20, the growing season is 80-85 days, 90-95 and 100-105 days. . Grasses formed from seeds sown in a very early period (March 1 and 10) are susceptible to fungal diseases in the early days of spring under the influence of excess moisture and low temperatures, and the bush numbers are reduced by 1.5–3.2%. Yield is less than 4.3–5.4 ts / ha. As the sowing period is delayed until April 20, during the flowering and ripening phases of sunflower, under the negative influence of high temperatures, the yield is reduced to 0.3-0.7 ts / ha and the oil content in the seeds to 0.3-0.6%. 31-33 ts / ha of early ripening varieties of sunflower grown as the main crop in Samarkand region. and 34.0-35 ts / ha.cha from early middle-aged varieties. It is advisable to sow in the period from March 30 to April 10 to achieve quality yields.
Keywords: Oily sunflower, planting time, development phases, growing season, early maturing varieties, early maturing varieties, air temperature, humidity, fungal diseases, yield, oil content in seeds.

Introduction

In the Republic of Uzbekistan, great attention is paid to the increase of vegetable oil, which is one of the main agricultural products used for food. On January 19, 2018, the President of the Republic adopted Resolution No. PP-3484 "On measures to accelerate the development of the oil and gas industry in the Republic." [1.i 2.]

The main part (85-90%) of vegetable oil used for consumption in the country is sunflower oil. Absolutely dry sunflower seeds contain up to 55% fat. Its naturally pure product is easily digested by the human body and breaks down cholesterol in the blood. Its oil contains essential active substances that are indispensable for the human body - phosphatides, fat-breaking vitamins and provitamins: - A, D, E. Tocopherols stored in fat are 60%, phospholipids -0.7-

1.0%. 100 kg of honey is collected from one hectare of sunflower fields with the help of bees. [2; 3; 6.].

On irrigated lands of Uzbekistan, sunflowers are grown from March to December. It is also possible to provide the population with vegetable oil throughout the year as a main crop and in exchange for planting in areas free of cereals. [8; 161-164st.]

Relevance

Early-maturing varieties that provide high and high-quality yields of oilseed sunflower in the irrigated conditions of Uzbekistan and their optimal planting dates have not yet been scientifically studied. With this in mind, one of the most pressing issues is to determine the scientifically based planting dates, which will ensure high yields typical of the climatic conditions of all regions of the Republic.

The purpose of the study: Based on the study of the growth, development and yield of different varieties, the growing season as the main crop in the irrigated conditions of Uzbekistan at different times, 33-35 ts / ha. is to study the most favorable sowing period of early and early maturing varieties that provide yields.

It should be noted that it reflects the climatic conditions of Jizzakh, Syrdarya, Fergana, Namangan, Andijan regions in the central part of Uzbekistan, the soil climate of Samarkand region. [4; p.8-10.] With this in mind, in 2012-2014 we conducted field experiments on typical gray irrigated soils of the Samarkand region, which occupy the largest area.

Materials and methods: Field experiments were conducted at the experimental farm of the Samarkand Agricultural Institute, located in the village of Chorjoi, Akdarya district, Samarkand region. The experimental area is typical gray soil. In the field experiment: early-maturing Rodnik variety, Krasotka F1 hybrid and 1st reproduction seeds of early-maturing Jahongir and Dilbar varieties were sown on March 10, 20, March 30 and April 10 and April 20 sowing periods. According to the planting dates and the studied varieties, the area of the plot is 70 sq.m. (4 rows of stalks, 0.7 m between rows, stalks length 25 m.) The experiment consisted of 4 repetitions. For a comparative study as standard, a March 10 deadline was adopted for each variety studied. The research was conducted using the All-Russian Research Institute of Oilseeds, the Institute of Plant Breeding of Uzbekistan (2009) and generally accepted methods.

Results and their analysis

Like any agricultural crop, sunflower grows well when planted at the most favorable time. [7; S-85-85-87, 10; -S.162-170] In Samarkand region, where the weather conditions are typical for the central regions of Uzbekistan, the effective temperature required for agricultural crops is 3300 0S-3500 0S. Indicators B explain that fast-ripening varieties of sunflower can produce seeds twice a year. [8; S. 161-134. 11; S. 305-309] According to the data we studied in 2005-

2007 and the last 2012-2014, sunflower can be planted in the first days of March and the grasses can be harvested in the first ten days of March. But from the seeds sown in very early periods, the grass will not appear evenly. That is, a variety of growth organs was observed. In the first and second decade of March, the morning dew and the humidity of the district adversely affected the growth and development of the plant. Excessive moisture has been linked to an increase in fungal diseases such as False Flour Dew, Sclerotiniosis and Botrits.

Infected plants in the early developmental phases did not grow well in the final basket formation and flowering phases. At the same time, under the influence of disease infestation of grasses that appeared during the period of March 10-20, it was found that at the end of the growing season, the number of bushes per hectare decreased by 1.5% -3.2%.

The analyzed data show that from the seeds sown on March 30, the grasses appeared evenly on April 9-11. The basket emergence and flowering phase of the Rodnik variety and Krasotka hybrid occurred in May. The fact that the daytime temperature in the third decade of May averages 24-29 0C is favorable for the flowering biology of sunflower. At this time the bees are also active. The reason is that sunflowers are pollinated from the outside by bees and then fertilized. When the activity of bees is slow, it is observed that 15-20% of the seeds in the basket become empty due to incomplete pollination of the flower. Although the flowering and ripening periods of Dilbar and Jahongir varieties, planted from March 30 to April 20, correspond to June and July, relatively high yields were obtained due to the long growing season of these varieties. Yields and oil content in seeds varied according to the studied varieties and sowing times. The highest yields by varieties were 35.1 ts / ha from Dilbar and 33.4 ts / ha. Krasotka was obtained from the F1 hybrid. High yields and high oil content of 49-50% in seeds were observed during the April 10 sowing period, depending on the variety. It should be noted that due to the delay in sowing until April 20, the yield will be 4.3-5.4 ts / ha less. As the sowing period was delayed until April 20, during the flowering and ripening phases of sunflower, under the negative influence of high temperatures, the yield decreased by 0.3-0.7 ts / ha and the oil content in the seeds by 0.3-0.6%. The reason is that the air temperature exceeds 30 0S, which adversely affects the development of the plant. Also, at 40 0C, the process of photosynthesis stops completely. [6; S 450-453]

According to the analyzed Table 1 data, it was found that all varieties of sunflower grown in the early period (March 10-20) had a lower yield of 2.5-5.1 ts / a compared to the most favorable period (April 10). As the sowing period of the varieties was delayed from April 10 to April 20, the yield and the amount of oil in the seeds decreased significantly. This was especially the case in the early Jahangir and Dilbar varieties. The ripening period of the Dilbar variety, planted on April 10, coincided with the first ten days of August. In addition, compared to the April 10 sowing period (35.1 ts / ha), the April 20 sowing period (34.5 ts / ha) yielded 0.6 ts / ha less. In general, high and quality yields are obtained when planting early and early

maturing varieties of sunflower, which are planted as the main crop, from March 30 to April 10.

Conclusions: Yields of sunflower varieties depend on the duration of the growing season and sowing periods. Due to the damage of plants by the disease, the number of plants in the area at the end of the growing season decreases by 1.5–3.3%, and eventually the yield is reduced to 3–5 ts / ha. By the end of the sowing period after April 20, the yield will be 2.5-3.5 ts / ha and the oil content in the seeds will be 1.5-1.9% lower. 31-33 ts / ha of early maturing varieties of sunflower grown as the main crop in the irrigated conditions of the regions located in the central part of Uzbekistan. and 34.0-35 ts / ha of early maturing varieties. It is advisable to sow from March 30 to April 10 to achieve quality yields.

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OF SUNFLOWER SEEDS AT DIFFERENT PLANT DENSITY Novateur **Publication India's** International Journal of Innovations in Engineering Research and Technology [IJIERT] ISSN: 2394-3696, Website: www.ijiert.org, 15th June, 2020Page : Page : 162-170

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Table 1. Phases of development and yield of early and mid-early varieties of sunflower planted at different times

T/p	Naming of varieties	Sowing time, month-day.	Occurrence of developmental phases, month-day					Average yield, s / g	The amount of oil in the seed %	Oil per hectare, kg / g.	Extra (+ more) (- less)	
			Mowing	Creating a basket	Flowering	Cooking	Growth period, days				Yield ts / ga	My kg / ha
1	2	3	4	5	6	7	8	9	10	11	12	13
1	1 Jahongir (Standard)	10.03	23.03	29.04	16.05	6.07	105	26,8	47.7	1278	--	--
	2	20.03	1.04	7.05	27.05	15.07	105	28,0	48,4	1349	+1,2	+71
	3	30.03	9.04	16.05	2.06	24.07	106	29.9	49,0	1465	+3,1	+187
	4	10.04	18.04	25.05	11.06	3.08	107	31.1	49,3	1533	+4,3	+255
	5	20.04	28.04	3.06	20.06	13.08	107	30.4	49,0	1450	+3.6	172
	EKF_{05}= s/g	-	-	-	-	-	--	1,1	-	-	-	-
2	Dilbar (standard)	10.03	23.03	27.04	13.05	27.06	96	29,7	49.1	1458	--	-
	2	20.03	31.03	5.05	21.05	4.07	96	31,4	49,4	1551	+1,7	+93
	3	30.03	9.04	14.05	30.05	15.07	97	33,5	49,7	1665	+3,8	+207
	4	10.04	18.04	23.05	9.06	26.07	98	35,1	50,0	1755	+5,4	+297
	5	20.04	28.04	2.06	18.06	4.08	98	34,5	49,6	1711	+4,8	253
	EKF_{05}= s/g	-	-	-	-	-	-	1.4-				
4	Rodik (standard)	10.03	22.03	24.04	9.05	13.06	83	27,2	47,5	1292	--	--
	2	20.03	30.03	2.05	17.05	21.06	83	29,4	48,3	1420	+2,2	+128
	3	30.03	9.04	12.05	27.05	1.07	83	31,3	49,2	1539	+4,1	+247
	4	10.04	18.04	21.05	6.06	11.07	84	31.8	49,6	1577	+4,6	+285
	5	20.04	27.04	30.5	15.06	20.07	84	31.,2	49,3	1538	+4,0	+246
	EKF_{05}= s/g	-	-	-	-	-	-	0.9				
5	1.Beauty (standard)	10.03	21.03	25.04	10.05	14.06	85	28.8	48.5	1397	-	-
	2.	20.03	29.03	4.05	19.05	22.06	85	30.9	48.9	1511	2.1	+114
	3.	30.03	9.04	13.05	29.05	4.07	86	32.3	49.6	1602	3.5	+205
	4.	10.04	17.04	22.05	7.06	12..07	86	33.4	50.1	1673	4.6	+276
	5.	20.04	27.04	29.05	16.06	22..07	86	33.1	49.7	1645	4.3	+248
	EKF_{05}= s/g	-	-	-	-	-	-	1.3	-	-	-	-