



DEPENDENCY OF PLANTING PERIOD AND SCHEME ON THE DYNAMICS
OF SUNFLOWER BIOMASS FORMATION

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Annotation: *In the article, on the land freed from grain crops, as a repeated crop, the varieties of sunflower Sam QXI 20-80 and SUR are planted on July 1, 10, and 20, and the row spacing is 70 cm; the plant spacing is 20, 25, 30, 35, and 40 cm. Data on the dynamics of the formation of wet and dry matter when planted in planting schemes were given. The delay in the planting period from July 1 to July 10 and 20, depending on the varieties, will lead to a decrease in biomass.*

In each planting period, according to the nutrition area and the number of bushes per unit area, the highest index was recorded in the planting scheme of 70x30-1 cm in the Sam QXI 20-80 variety and 70x25-1 cm in the SUR variety.

Key words: *sunflower, Sam QXI 20–80, SUR, planting period, planting scheme, biomass.*

The productivity of crops is not only related to the variety and the technology of their cultivation; there is also a correct connection between the production of the crop, the level of the leaf, and the duration of its operation. The level of leaves, the duration of its operation, and the accumulation of dry mass determine the photosynthetic efficiency of the plantation. [1; 21-22-b., 3; 41-b.].

When the results of the study of the rate of wet and dry biomass accumulation of sunflower types Sam QXI 20-80 and SUR in different periods and planting schemes in the conditions of the gray soils of the irrigated meadow of Samarkand region were analyzed, it was discovered that the amount of biomass changes depending on the planting periods and planting schemes.

Planting on July 1 in the control variant Sam QXI 20–80, depending on the measurement days (growth phases), wet mass 40.37–126.15 t per hectare and dry mass 6.96–29.90 t per hectare were noted. The amount of biomass in the middle (July 10) and late (July 20) planting dates was in the range of 35.83–104.52; 6,16–25,10 t.; and 30,06–86,97; 5,18–20,30 t. per hectare, respectively, and the delay in planting dates led to a decrease in biomass (Tables 3.9 and 3.10).

According to all planting times and schemes, the biomass analysis of the Sam QXI 20-80 variety of sunflower showed that the dry mass climbed to 13.46–25.37 t, while the wet mass increased to 52.54–89.83 t from 30-35 days to 60-65 days. The delay in the planting period leads to a decrease in the amount of biomass, and an increase in the feeding area from 1400 cm² to 2100 cm² from 30-35 days to 75-80 days of measurement leads to an increase in



biomass, and the expansion of the feeding area from 2100 cm² to 2800 cm² caused a decrease in this indicator due to the decrease in the number of plants per unit area.

The importance of the feeding area was not observed because the sunflower biomass was small until 20–25 days after germination. Sam QXI 20-80 variety, when planted on July 1, had wet and dry mass on the 30-35th day of measurement compared to the control variant, with wet and dry mass in the variant with a feeding area of 2800 cm². 5.15 t. and 0.85 t. per hectare were found to be higher, respectively. Wet and dry mass were observed to have risen during the whole developmental process. In comparison to the control option, on the 75th and 80th day of measurement, the wet and dry biomass were 109.84 t and 25.88 t per hectare in the option with a feeding area of 1400 cm². 16.31 t and 4.02 t.

In comparison to the control planting scheme, it was discovered that the wet and dry mass of the plant in the planting scheme of 70x40-1 cm, with a feeding area of 2800 cm², generated 14.02 t and 2.43 t less biomass per hectare, respectively. An overly spacious feeding area led to a decrease in plant biomass. This pattern was observed in all planting periods.

In the variants planted on July 10, wet and dry biomass accumulation on 75–80 days of the growing season was 90.64–110.77 t. and 21.21–27.13 t. per hectare.

It was recorded that the highest biomass accumulation was 110.77 t. of wet biomass and 27.13 t. of dry biomass per hectare when the feeding area was 2100 cm². In this period, the least biomass accumulation was 90.64 t. and 21.21 t. per hectare, respectively, in the option with a feeding area of 1400 m².

It was noted that 22.3% less wet mass and 21.8% less dry mass were produced than the 2100 cm² variant that collected the highest biomass.

The postponement of planting had a negative effect on the sunflower biomass production. Wet and dry mass per hectare were determined to be 30.06 and 5.18 t., 53.82 and 10.26 t., 65.73 and 13.21 t, 83, 73, and 18.59 t., and 86.97 and 20.30 in the planting scheme of 70x25-1 cm planted on July 20. The option with the highest biomass accumulation was also observed in the 70x30-1 cm planting scheme. The wet mass was 5.2% greater and the dry mass was 13.5% higher than the control variety on days 75–80 of plant development.

The SUR variety of sunflowers showed an increase in biomass throughout the measurement days in all planting periods, and this indication declined as the planting period got longer. Increasing the feeding area from 1400 cm² to 1750 cm² increased biomass in each planting period and measurement day, but increasing the feeding area from 1750 cm² to 2800 cm² decreased the number of plants per unit area.

Early on July 1, when the sunflower SUR sort is planted, It was found that 11.86–29.03 t. of wet mass and 2.07–4.97 t. of dry mass per hectare were collected over the 30-35 days of measuring the amount of biomass according to planting schemes. In the last 75–80 days of measurement, 68.73–84.19 t. of wet mass and 16.89–20.40 t. of dry mass per hectare were collected in this option. The highest wet and dry mass was observed in the control 70x25-1 cm planting scheme, i.e., in the feeding area of 1750 cm². This regularity was preserved on all measurement days of the SUR variety. The same quality was maintained during the mid-July 10 and late-July 20 planting periods. Sowing period: July 10, 75–80 days after the maximum biomass measurement, the amount of wet and dry mass was determined to be,



respectively, 71.67 t. per hectare and 17.90 t. per hectare in the control option. In this variant, it was found that 12.52 t. and 2.5 t. higher biomass per hectare were obtained when planted early (01.07), and 14.79 t. and 2.7 t. less biomass per hectare were obtained when planted late (20.07).

Table 3.9

Dynamics of formation of wet and dry mass in sunflower Sam QXI 20-80, t/ha (average 2020-2022 year)

Planting period	Planting scheme, cm	After germination, day									
		30-35		40-45		50-55		60-65		75-80	
		wet	dry	wet	dry	wet	dry	wet	dry	wet	dry
1.VII	70x20-1	31,34	5,40	65,56	12,50	82,64	16,64	105,76	23,49	109,84	25,88
	70x25-1 (st)	40,37	6,96	79,63	15,22	99,29	19,96	121,46	27,01	126,15	29,90
	70x30-1	45,52	7,81	87,64	16,73	108,71	21,84	130,33	28,96	135,35	33,18
	70x35-1	41,63	7,16	79,86	15,26	98,96	19,88	118,24	26,26	122,79	30,06
	70x40-1	38,29	6,57	73,18	13,96	90,64	18,21	107,98	24,00	112,13	27,47
10.VII	70x20-1	27,33	4,69	53,25	10,18	66,20	13,33	87,31	19,37	90,64	21,21
	70x25-1 (st)	35,83	6,16	65,70	12,57	80,66	16,20	100,59	22,37	104,52	25,10
	70x30-1	40,13	6,90	71,81	13,71	87,65	17,60	106,67	23,70	110,77	27,13
	70x35-1	36,70	6,32	65,41	12,49	79,75	16,04	96,67	21,49	100,37	24,58
	70x40-1	33,95	5,82	60,29	11,52	73,47	14,75	88,77	19,71	92,16	22,59
20.VII	70x20-1	22,19	3,81	42,60	8,15	52,84	10,59	71,94	16,01	74,73	17,27
	70x25-1 (st)	30,06	5,18	53,82	10,26	65,73	13,21	83,73	18,59	86,97	20,30
	70x30-1	33,78	5,79	58,85	11,26	71,40	14,34	88,33	19,64	91,73	23,48
	70x35-1	30,85	5,30	53,53	10,21	64,86	13,02	79,89	17,76	82,98	20,32
	70x40-1	28,55	4,91	49,35	9,42	59,76	12,02	73,26	16,28	76,08	18,63

According to the results, the biomass accumulation of the Sam QXI 20–80 variety compared to the SUR variety was higher in all options. In the Sam QXI 20-80 variety, the date of planting is July 1, and in the variant with the planting scheme of 70x25-1 cm, the wet and dry mass on the 75-80th day of measurement compared to the SUR variety is 33.3% and 31.8%, respectively, which was noted to be high.

The highest biomass accumulation in the Sam QXI 20-80 variety compared to the option with a planting scheme of 70x30-1 cm, It was noted that the wet mass was 51.16 t (37.5%) per hectare, and the dry mass was 12.78 t (38.5%) less in the 70x25-1 cm planting scheme of the SUR variety.

Conclusion

It was discovered that the planting schedule and time had an impact on the biomass accumulation tendency of the Sam QXI 20–80 and SUR sunflower types. It had been found that the Sam QXI 20–80 type had a larger biomass accumulation than the SUR variant. Biomass accumulation decreased with the delay of planting dates; the highest biomass was recorded at all planting dates in the Sam QXI 20-80 variety in the 70x30-1 cm planting scheme and the SUR variety in the 70x25-1 cm planting scheme.



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