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## FORMATION OF ELEMENTS OF YIELD STRUCTURE OF VARIETIES AND HYBRIDS OF SUNFLOWER DEPENDING ON TECHNOLOGY OF SOIL PREPARATION

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In Kazakhstan, sunflower crop area has increased in recent years, including in the northern regions of the country. However, productivity remains low, with the average yield in the republic of 5-6 c<sup>1</sup> / ha. In the last 4 years, the yield has decreased to 5.3 c / ha, varying from 4 to 6.3 c / ha. This is explained by the fact that in recent years the sowing areas increased by 3-4 times. This involved lands located in less favorable conditions, which require a comprehensive study of the culture to improve cultivation techniques for high and stable yearly yield [1,2].

In this regard, we laid a pilot area on the territory of LLP “Farmer 2002” (located in the Astrakhan area of Akmola region) , using the method of governmental variety testing [2].

The main objective of our research was to examine the features of formation of elements of yield structure of different varieties and hybrids of sunflower depending on various soil preparation technologies. The objects of research were varieties of sunflower - Sochinskyi, SPK, and the hybrid - Vostochnuy.

Abovementioned grades and sunflower hybrids were tested in comparison to 4 backgrounds with different soil preparation technologies: no till (herbicide, direct seeding), minimum I (herbicide 1 flat surface 10-12 cm and direct sowing), the minimum II (3 flat surface 10 -12 cm and direct sowing), compared to the zonal (1 flat surface 8-10 cm 2 flat surface 10-12 cm and loosening to 25-27 cm).

We studied the feature of formation of a crop structure elements depending on various soil preparation technologies. "The number of seeds with “1 basket” and "weight of 1000 seeds" plays a role in obtaining high yield of sunflower seed harvest index.

Table 1 – The structure of crop varieties and hybrids of sunflower depending on soil preparation technology

Soil Preparation Technology	Grade and hybrid type	Number of plants from 1 m <sup>2</sup>	Number of baskets per 1 plant	Number of seeds per one basket	Mass of 1000 seeds, g	Biological yield, c/ha
Zonal (control)	Sochinskyi	3,0	1	980	62	18,2
	SPK	3,0	1	1100	69	22,8
	Vostochnuy	3,0	1	820	62	15,3
Minimum I	Sochinskyi	3,0	1	1150	63	21,7
	SPK	3,0	1	1140	68	23,2
	Vostochnuy	3,0	1	835	62	15,5
Minimum II	Sochinskyi	3,0	1	1062	62	19,7
	SPK	3,0	1	1160	67	23,3
	Vostochnuy	3,0	1	824	62	15,3
No till	Sochinskyi	3,0	1	962	60	17,3
	SPK	3,0	1	1020	67	20,5

	Vostochnuy	3,0	1	802	62	14,9
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As the crop structure analysis data (Table 1) shows, the number of seeds in a basket in the varieties and hybrids of sunflower is higher in the version with minimal soil preparation technology than with zonal and no till technology options. Among the varieties of sunflower, there is an increase of this indicator in the varieties of Sochinskyi and the SPK, which varied from 962 to 1160 pieces of seeds in 1 basket.

In the experiment, for all backgroundpaving technologies, the biological productivity of sunflower varieties of SPK was higher than the yield of seeds of other varieties and hybrids.

### References

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