

AVERAGE STEM HEIGHT OF SUNFLOWER VARIETIES IN THE REPUBLIC**Habibullayev Kholjura Abdukhalil ugli**

Grain and Leguminous Crops Research Institute,

PhD in Agricultural Sciences

Barotova Anisa RazzokovnaTashkent State Agrarian University, Department of Sericulture and Mulberry Cultivation, PhD in
Agricultural Sciences**Abidov Abdukhalil Khabibullayevich**
Andijan Institute of Economics

Annotation: The article analyzes the average stem height of sunflower varieties and breeding lines cultivated in the Andijan region. The results of research conducted on varieties such as Olimp-1, 1-catalog (Line 1), 2-catalog (Line 2), Osiyo, and T-14 are presented. The main purpose of the study is to evaluate the biological characteristics and growth patterns of sunflower varieties in field conditions of Uzbekistan.

Keywords: Productivity, sunflower, agrotechnical measures, stem height, flowering, variety, line.

Introduction

Agricultural productivity is influenced by multiple factors, including climatic conditions, soil fertility, and crop biology. Sunflower (*Helianthus annuus* L.) is one of the most important oilseed crops globally and is widely cultivated in Uzbekistan. The increasing population and growing demand for sunflower oil have made it essential to improve yield and expand cultivation areas. In the global vegetable oil market, sunflower competes with soybean, rapeseed, peanut, and cottonseed oil crops.

In Uzbekistan, most sunflower fields are planted with oilseed varieties, while seed-type varieties are mainly used for silage, green mass, and small-scale seed production. The stem height of sunflower plants depends largely on climatic conditions, soil moisture, and temperature levels in the active soil layer.

Research Results and Discussion

Experimental studies were carried out to measure the average stem height of sunflower varieties during the 2022–2024 growing seasons in the Andijan region. Observations showed significant differences among the varieties, as summarized in Table 1.

No.	Variety / Line	Replication 1	Replication 2	Replication 3	Replication 4	Average (cm)
1	Olimp 1	56	55	56	56	55.7
2	1-catalog	61	62	63	62	62.0

	(Line 1)					
3	2-catalog	72	73	75	74	73.5
	(Line 2)					
4	Osiyo	70	71	70	69	70.0
5	T-14	68	66	67	68	67.2
6	Yangi	90	91	88	90	90.2
	zamon					
	(st)					

According to the data, the T-14 variety had the shortest stem height (67.2 cm), while the 2-catalog (Line 2) variety exhibited the tallest stems (73.5 cm). Differences among the varieties were likely caused by genetic and agro-climatic factors.

Phenological observations revealed that the formation of flower heads (capitulum) varied among varieties, with the earliest formation occurring in T-14 (June 3–8) and the latest in Olimp-1 and 2-catalog (June 14–16). These findings indicate that flowering time should be considered when performing hybridization in breeding programs.

Conclusion

Based on field observations and phenological studies, the T-14 breeding line demonstrated superior traits in terms of stem height uniformity, early flowering, and adaptability. Considering its valuable agronomic characteristics, this line is recommended for use in practical sunflower breeding programs.

References

1. Amanova, A., Holtoyev, T., & Rustamov, A. (2005). Prospective early-maturing varieties of sunflower. *Uzbekistan Agricultural Journal*, No. 4, 25–26.
2. Vasilyev, D.S. (1990). *Podsolnechnik*. Moscow: Agropromizdat.
3. Yormatova, D., & Khushvaqtova, S.X. (2008). *Oilseed Crops*. Zarafshon Press.
4. Van der Merwe, R., Labuschagne, M.T., Herselman, L., & Hugo, A. (2015). Effect of heat stress on seed yield components and oil composition in high- and mid-oleic sunflower hybrids. *South African Journal of Plant and Soil*, 32, 121–128.