



## Peculiarities of growing and development of soybean varieties in low salinity soil conditions of Karakalpakistan.

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**Abstract** : In order to develop the optimal sowing time, ensuring high and stable yields of soybeans of the "Nafis" variety in the Aral Sea region, field experiments were carried out on the experimental plot of the Karakalpak Scientific Experimental Station of the Research Institute of Grain and Leguminous Crops. The experience is multi-factorial. Sowing was carried out in three sowing dates: 1st, 2nd and 3rd ten days of April. The results of the study showed that when cultivating soybeans of the Nafis variety in the Aral Sea region, in order to obtain the highest grain yields, sowing should be carried out in the first ten days of April.

**Keyword** ; variety, soybeans, sowing time, yield, grain, optimal, sowing. oil. food

The problem of food security has been growing in recent years. Providing food to the peoples of the world is one of the most important issues of our time. The solution to this problem has been achieved through a number of measures taken since the first years of the Independence of the Republic of Uzbekistan. Given the fact that in the soil-climate of our country there is an opportunity to increase the share of agricultural products by one and a half, the supply of vegetable protein is every kind out in various

ways. One such method is to plant more high-yielding crops, among which soybean crops are distinguished by their protein content and quality. The distribution of soybean depends on the quality of the seed and protein. Soybean is the most important among the plants in the farming system due to its versatility in use. Because its seeds contain 28-52% protein, 18-27% ecologically pure vegetable oil, many mineral salts compared to the most important food products rich in amino acids such as meat, milk, eggs. (1) The nutrition for a person may vary depending on age, gender, and labor. In daily life it is necessary to consume human proteins, carbohydrates, vitamins, mineral products and others. The longer a person eats with different foods, the healthier his body will be. Each of us realizes how negative the daily stresses, depressions, and neuropsychological fatigue are in such situations. Among cereals, soybeans occupy the first place, and in recent years in the Republic of Uzbekistan the growing attention to soybean. One of the plants does not store a large amount of protein, similar to soybean seeds. The cost of growing soy protein is very low, in large quantities per hectare. When soy protein is used by livestock as a source of nutritious protein feed for poultry, an environmentally friendly product is obtained in the food industry. Provides clean nitrogen to the soil in shady planted areas and improves soil microflora. Given the importance of soybean, the selection of high-yielding varieties that grow in the conditions of our republic is an important issue today.

Object of search. Soybean of “Orzu”, “Selekta-302”, “Tumaris” va “Nafis” sorts.

Research objective – To study the peculiarities of the growth and development of soybean varieties, phenological look after is taken into account.

Research methods. Growing of soybean varieties in the fields, biometric measurement of varieties to be determined by the method of state varietal testing of field crops. Detection from the DR-3900 photometer device in the analysis of soil and its composition.

In our experiment, to determine the degree of salinity of the soil, the soil of the site is taken using a bur with a tension of 0.30 cm. The sample was prepared for testing in the laboratory of the Nukus branch of TDAU. (pic 1). From the sample prepared for the experiment in the laboratory is prepared a soil solution mixed with distilled water in

a ratio of 1/5 (25 g of soil + 125 mg of water) and filtered, and it is left for half an hour.  
tools used: flask, test tube, scales, photometer, condenser, pipette.



1- Picture. The form of preparation of samples to determine the degree of salinity of the soil

One of the main conditions for high yields is the biology of these varieties, taking into account the climate, the system of specific agro-technical capabilities of each variety, the selection of varieties depending on soil and climatic conditions of each region and their strict attention to agronomic techniques, soybean cultivation. is a key part of advanced technology (2).

To obtain high yields of soybeans requires solving a complex of several technological options. The best climatized varieties for soybean sowing should be treated with nigragin before sowing the seeds of the top type, sowing should be done at the same depth, according to the optimal terms and conditions of sowing the seeds (3).

the sowing is pre-treated with medicine to prevent disease of the seeds, and the sowing is sown when the temperature of the soil layer is 8-10 C, and now when the sowing not cold. (4)

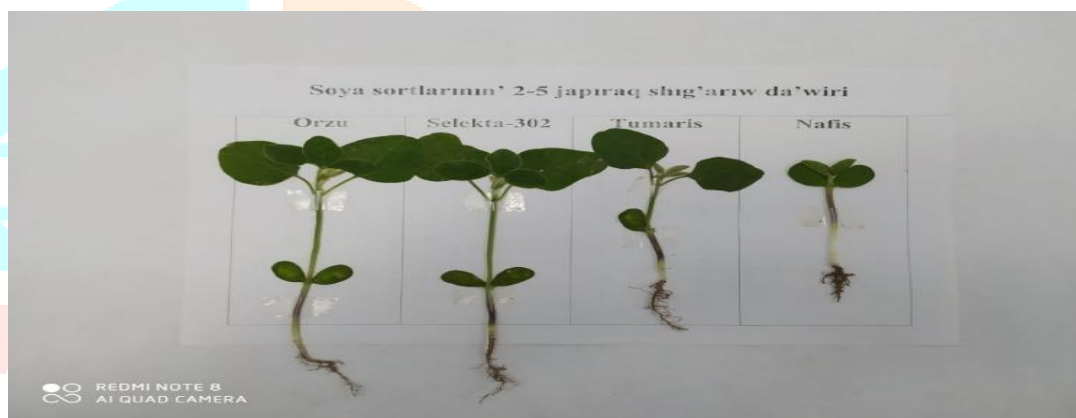
Research results. The conditions of the Republic of Karakalpakstan are favorable for everyone, spring is late and changeable, summer is hot and dry, the soil is saline. Under such conditions, we conducted an experiment to study the variability of growth and development of soybean plants. Experiment of soybean “Orzu”, “Selekta-302”, “Tumaris” and “Nafis” varieties were studied.

When we study the germination of soybean varieties in field conditions in practice “Orzu” and “Selekta-302” sorts “Tumaris” and “Nafis” distinguished by its well-developed compared to the varieties(pic 2).



2-Picture. Greening of soybean varieties in field conditions

In our analysis of the obtained data, well-developed varieties of soybean Orzu and Selekta-302 when producing 2–5 leaves at the beginning of development.



3-picture. The period when the soybean varieties produce 2-5 leaves

Soybean varieties studied in our experiment The size of the stem at the time of germination “Orzu” variety 16.1 cm, “Selekta-302” variety 15,3 cm, “Tumaris” variety 16,2 cm and “Nafis” variety 16 cm was developed. as the soybean grows in size “Selekta - 302” we see that the variety is 0.7-0.9 cm lower than the other variety, this is a peculiar feature.

in our study of the transition peculiarities of the developmental phases, the bluish phase is observed in 12-13 days in soybean varieties. the branching phase lasts 20-25 days. (4-picture) The flowering phase lasts 28-30 days . The longest period (48-51 days) during the growing season is the ripening phase (5-picture .)



4- Picture.Soybean of Orzu and Tumaris branching phase of varieties.



A B C D

5 - Picture. The beginning of the ripening period of the soybean

The following differences appear during the growing season in terms of variations. For full ripening of varieties “Orzu” Variety 119-day, “Selekta-302” variety 112-day, “Tumaris” variety 110 day and “Nafis” variety 109 day required.

There are differences between the varieties in the range of 1-10 days, “Orzu” variety late ripening was detected.

In our experiment, the number of angles in the organized variety was 41.0 in the Orzu variety, 40 in the Selekta variety, 44 in the Tumaris variety and 43 in the Nafis variety. Fruit weight in the experiment “Tumaris” variety 24,2 g “Nafis” variety 23,2 g which is 1-2 grams higher in other varieties. The growth and development of soybeans, biometric indicators depend on the variety, and the yield varies depending on the variety. Among the cultivars studied in practice, the Tumaris cultivar differs from other cultivars by its high yield. Malasan, Orzu variety 21.2 c / ga, Selekta 20.9 c / ga, Tumaris 22.1 c



/ ga and Nafis 2.8 c / ga in the back zone of Uzbekistan shows the peculiarities of harvesting. (table 1)

Yield of soybean varieties (C / ha)

Varieties	centner				Average
	1	2	3	4	
Orzu	21	21,4	21,6	20,8	21,2
Selekta-302	20,5	21,2	20,8	21,8	20,9
Tumaris	21,2	22,8	22,3	22,1	22,1
Nafis	21,8	22	22	21,4	21,8

### Conclusion.

1. 12-13 days after sowing, the germination of soybean varieties is 98% in variant 1, 88% in variant 2, 98% in variant 3 and 100% in variant 4.
2. For full ripening of varieties "Orzu" variety 126-days, Selekta variety 122-days, Tumaris variety 114-days and Nafis variety 116-days were required. variety between 4-10days there will be differences in the range, and the late ripening of the Orzu variety has been identified.
3. Among the soybean varieties, Tumaris and Nafis yielded 22.1 and 22.8 centners per hectare, while Selekta and Orzu yielded 0.9-1.2 c / ha.
4. Thus, in the low-salinity soils of Karakalpakstan, it was found that it is possible to grow "Tumaris" and "Nafis" varieties of soybeans, to grow crops that are considered good for these conditions.

### References

- 1.Siddikov R.va boshq. O'zbekistonda soya o'simligini asosiy xamda takiroriy qilib o'stirish agrotexnologiyasi bo'yicha tavsiyanoma.Andijon-2017 y. b.3-4
- 2.Atabaeva X.N. Soya- morfologiyasi, biologiyasi,etishtirish texnologiyasi. «O'zbekiston milliy enciklopediyasi- davlat ilmiy nashrieti Toshkent– 2004.b. 45
- 3.Yormatova D.E. Soya. T., "Mehnat", 1989, 96 s.
- 4.<https://www.agrobase.ru>