



SCIENTIFIC SUPPORT FOR THE EFFECTIVE DEVELOPMENT OF SEED PRODUCTION OF VEGETABLE SOYBEANS IN UZBEKISTAN

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ABSTRACT: - Vegetable soybeans are non-traditional crop in the Uzbekistan. The universality of the use of this crop testifies to its potential and value for agriculture, since cultivated soybeans are a food, technical, oilseed, fodder and siderate crop. The article describes the data for the production of high-quality seeds of vegetable soybeans in the conditions of Uzbekistan. It is necessary to comply with the rules of seed production, including individual and group selection in primary seed production and mass selection of elite seed production. It is necessary to select plants with a high yield of beans and well-ripened full-fledged seeds, the selection of beans with pronounced and corresponding to the variety morphological features.

KEYWORDS: Vegetable soybeans, seed production, elite, reproduction, quality, proteins, oil.

INTRODUCTION

The successful development of soybean culture is closely related to the variety, as one of the very strong factors in increasing the yield and improving the quality of products.

The zoned precocious variety Emerald surpasses the local ordinary ones in many economic features, such as protein content, oil, taste and technological qualities,

**“SCIENTIFIC SUPPORT FOR THE EFFECTIVE DEVELOPMENT OF SEED PRODUCTION OF VEGETABLE SOYBEANS IN
UZBEKISTAN”**

resistance to diseases and pests, drought and frost, suitability for mechanized harvesting, maturation dates [8, 10, 13].

The effectiveness of individual agricultural techniques and the importance of soybeans in sebo turnover depend on the varietal characteristics, as well as the direction in use, the placement of the crop by district. To obtain an even greater effect of soybean seed production, it is necessary to apply improved agricultural techniques, as well as the introduction of correct grass field crop rotations [6, 9, 10].

The main task of seed work: reproduction of purebred seeds in sizes sufficient for seeding mass production crops, maintenance and preservation of high varietal purity, i.e. a set of morphological, economic and biological properties of the variety and continuous work to improve the variety [1, 12, 14].

Primary seed production at the Institute of Soybeans (Globino, Poltava region of Russia) is carried out according to all the rules and regulations that are necessary to obtain original seeds with the subsequent production of additional, basic and certified seeds. As you know, the traditional method of seed production is a closed cycle, which includes a number of nurseries with mandatory sequential procedures in them. The selection of elite plants is carried out by the individual-family method in five stages (four field and one laboratory) according to all identification signs, and there are 20 of them in soybeans [3, 10, 15].

Elite plants are labeled already in the budding phase, and in subsequent phases of development, plant analysis is used. If the plant does not correspond to a certain trait according to the official description, then it is culled. Atypical families are rejected, as well as

those in which more than 3 atypical plants are recorded, regardless of what type of impurity is mechanical or genetic [3, 4, 7].

The process of culling families in nurseries is carried out during the entire growing season according to the main phases of development, the last field rejection is carried out during the period of maturity. Marriage of families is carried out rigidly: out of 600 elite plants, about 250 families remain in the nursery of the study of second-year families by the last stage of the study. And at the stage of rejection by productivity (after weighing), another 30-40 families are eliminated [3, 5, 10, 11].

Material and methodology

The experiments were laid within the framework of the state project on seed production of vegetable soy at the Research Institute of Vegetables and Melons and Potato in 2022. The sowing date is April 20. Sowing scheme 70×20 cm.

During the research, field experiments were laid and laboratory tests were carried out using the following methodological guidelines "Methodology for international partners in the study of vegetable soybeans from the World Center for Vegetable Growing", "AIP Guidelines"; "Methods of biochemical research of cultivated plants"; "Methodology of field experience".

Research results

Organization of seed work. The fourth, fifth and sixth generations from the elite are already commodity reproductions. On seed plots, the fourth and fifth generations are allowed, then varietal renewal occurs and the cycle of generations from the new release of the elite by experienced institutions is repeated (Table 1).

“SCIENTIFIC SUPPORT FOR THE EFFECTIVE DEVELOPMENT OF SEED PRODUCTION OF VEGETABLE SOYBEANS IN UZBEKISTAN”

The fourth, fifth and sixth generations are grown on production sites.

Table 1.

Scheme of production of varietal seeds of vegetable soybeans

Name of the reproduction	The concept of reproduction	Where it is grown	How it is used	Where it is harvested
Elite	The highest yielding, high-quality and purest seeds of the variety, which are the initial ancestor of the generation, grown under the direct guidance of the originator	Breeding stations and other research institutions	For seed seeding for the purposes of the State Variety and Gen fund	In the state variety fund, in the research institute of originator
First reproduction	First offspring from the elite	On seed plots by the originator	For sowing on production sites	Also
Second reproduction	Second generation from the elite	Production sites	For sowing on seed plots	Also
Third reproduction	Third generation from the elite	On seed plots	For sowing on production sites	Falls asleep on the seeds

Variety renewal is the replacement of seeds of a given variety with more pure and better seeds of the same variety, it is installed for soybeans once every three years on seed plots.

Features of agricultural techniques and other methods of soybean cultivation on seed crops. To increase the yield and commercial yield of seeds, the following main measures should be taken:

1. Observance of the correct alternation of crops in crop rotation. Soybean sowing should not be allowed for sunflower,

leguminous crops and soybeans earlier than in 4-5 years.

2. High quality and timely conduct of basic and pre-sowing tillage.
3. Thorough preparation of seeds for sowing, including infection with nodule bacteria and timely sowing with selected seeds.
4. The correct seeding rate, ensuring the optimal density of standing plants.
5. Timely care for plants, which is especially important in the first phases of growth, until the plant becomes stronger. Cultivation in the inter-rows and shelves

“SCIENTIFIC SUPPORT FOR THE EFFECTIVE DEVELOPMENT OF SEED PRODUCTION OF VEGETABLE SOYBEANS IN

UZBEKISTAN”

in the rows should be completed by the time of full flowering.

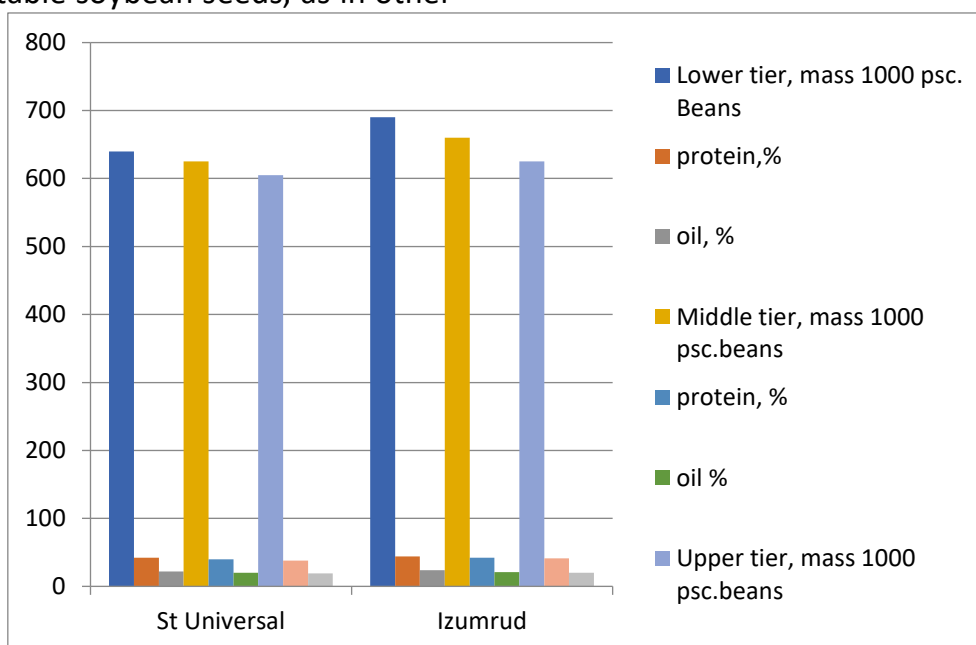
6. Direct control of diseases and pests in case of their mass spread.
7. Application of mineral fertilizers.
8. Drying, cleaning and sorting of soybean seeds, bringing to the established conditions and ensuring normal storage conditions.

For sowing, it is necessary to select the largest and heaviest, healthy seeds, well aligned, with high germination energy, with an intact shell. Selection by absolute weight of soybean seeds is very effective. The absolute weight of the seeds of vegetable soybean seeds, as in other

crops, is a very important indicator of the quality of the seed material, by which it is possible to judge the supply of pting substances for the embryo in the first days of its life, the viability of seeds in the field.

When sowing with large seeds, not only an increase in yield in the first generation is achieved, but also the quality of the seeds of the plants of the subsequent generation grown from them improves.

Izumrud variety, flowers bloom from bottom to, the heaviest seeds are in the lower tier of the bush, the seeds of this tier contain a higher percentage of fat (Fig. 1).



Rice. 1. Harvest and quality of vegetable soybean Izumrud variety

According to our data, it can be seen that the Izumrud variety in tiers (upper, middle and lower), as well as in terms of indicators such as, the mass of 1000 pieces of beans, the protein and oil content, was the highest on the lower tier and amounted to (690 g, 44%, 24%), surpassed the control version of the Universal variety, respectively (640 g, 42%, 21%).

CONCLUSIONS

1. For sowing, it is necessary to select high-quality calibrated seeds, the first and second year of storage.
2. Sowing of seeds is carried out in the optimal sowing period for each variety.

“SCIENTIFIC SUPPORT FOR THE EFFECTIVE DEVELOPMENT OF SEED PRODUCTION OF VEGETABLE SOYBEANS IN UZBEKISTAN”

3. It is necessary to carry out timely agrotechnical measures during the growing season of plants.
4. Carry out direct control of diseases and pests in case of their mass spread.
5. Apply the required amount of mineral fertilizers according to the results of agrochemical analysis of the soil.
6. Carry out drying, cleaning and sorting of soybean seeds, bring to the established conditions and provide the necessary storage conditions.

REFERENCES

1. Antonov S.I., Korotkova O.V. Influence of various elements of technology of cultivation on the development and yield of soybeans // *Zernovye i kordovye kul'tury Rossii*. – Zernograd, 2002. – p. 20-22.
2. Baranov V.F., Efimov A.G. On the possibility and efficiency of the private seva soi // *Agriculture*, 2004. № 2. – p. 30-31.
3. Bochkareva L. NII soi: sovremennyi vzglyad na primary semenovodstvo. Dumka eksperta. 2022 1394-nii-soi-sovremennyj-vzglyad-na-pervichnoe-semenovodstvo.
4. Butovets E.S. Modern varieties of soybeans for conditions primorye // *Actual issues of development of agrarian science in the Far Eastern region: sb. nauch. Tr.* – Vladivostok: Dalnauka, 2009. – p. 157-160.
5. Golubev V.V. Influence of techniques of technology of cultivation on the yield of soybeans // *Voprosy biologii i tekhnologii vozdelovanie soi na Dal'nogo Vostok Rossii: sb. nauchnykh tr.* – Blagoveshchensk: Dalnevostochnyi NMTS VNII Soi, 2000. – 115 p.
6. Joseph J.E. Soy protein products: characteristics, nutritional properties and applications. – M.: Maktsentr, 2002. – 421 p.
7. Dolginova V.A. Soya v Rossii: no GMO. – M.: NIA — Priroda, 2016. 111 p.
8. Zelentsov S.V. Modern aspects of selection and genetic improvement of soybeans. – Krasnodar, 2005. – 296 p.
9. Kim V.V. Efficiency of natural hybridization of vegetable soybeans in Uzbekistan. *European International Journal Of Multidisciplinary Research And Management Studies*. ISSN: 2750-8587 DOI: <https://doi.org/10.55640/eijmrms-02-10-03>. Volume: 02 Issue: 10 October 2022. Page No.-16-21.
10. Kim V.V., Narimanov A.A., Lyan E.E. Vegetable soybean new non-traditional crop - in Uzbekistan. Monograph. Published Primedia E-launch LLC Shawnee, USA P. 157. ISBN: 979-8-88722-512-8 DOI: <https://doi.org/10.5281/zenodo.7013670>.
11. Lukomets V.M. Soya: biology and technology of cultivation. – Krasnodar, 2005. – 433 p.
12. Chaika A.K. Increasing the efficiency of selection and seed production of the main agricultural crops in Primorsky NIISKh // *Actual issues of development of agrarian science in the Far Eastern region: sb. nauch. Tr.* – Vladivostok: Dalnauka, 2009. – S. 68-79.
13. Boerma H., Specht J.E. Soybeans: Improvement, Production, and Use. – USA: American Society of Agronomy-Crop Science, 2004. – 442 p.
14. Wansink B. Marketing Nutrition: Soy, Functional Foods, Biotechnology, and Obesity. – USA: University of Illinois Press, 2005. – 156 p.
15. Zhou X., Liu W., Lian J. Monitoring of Roundup TM Ready soybean in Guangdong province in China // *Food Control*, 2007. V.18. – P.1219–1222.

“SCIENTIFIC SUPPORT FOR THE EFFECTIVE DEVELOPMENT OF SEED PRODUCTION OF VEGETABLE SOYBEANS IN UZBEKISTAN”