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# METHODS OF GROWING DAIKON SEEDS IN UZBEKISTAN

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**Abstract**:

Results of comparison of efficacy annual without relocate and two-year-old relocate a method of cultivation of seeds are stated. It is proved, that in Uzbekistan seeds of daikon can be cultivated to both methods. The greatest seed yield from unit of the area is formed at use of queen cells from sowing on July, 30th - on August, 10th.

**Keywords**: daikon, root crop, seeds, leaves, sowing dates, seed yield.

## СПОСОБЫ ВЫРАЩИВАНИЯ СЕМЯН ДАЙКОНА В УСЛОВИЯХ УЗБЕКИСТАНА

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**Аннотация**

Излагаются результаты сравнения эффективности однолетнего беспересадочного и двухлетнего пересадочного способа выращивания семян. Доказано, что в Узбекистане семена дайкона можно выращивать обоим способами. Наибольший урожай семян с единицы площади формируется при использовании маточников от посева 30 июля – 10 августа.

**Ключевые слова:** дайкон, корнеплод, семена, листья, сроки посева, семенная урожайность.

**Аннотация**

Бир йиллик кўчирмасдан ва икки йиллик кўчириш усулларда уруғларни етиштиришнинг самарадорлигини таққослаш натижалари келтирилган. Ўзбекистонда дайкон уруғини ҳар икки усулда ҳам етиштириш мумкинлиги исботланган. 30-июлдан 10-августгача бўлган экиш муддатида оналик илдизмеваларидан фойдаланганда майдон бирлиги учун

энг катта уруғ ҳосили ҳосил бўлади.

**Калит сўзлар:** дайкон, илдизмева, уруғ, барг, экиш муддати, уруғ ҳосилдорлик

**Rationale for the research**

The consumption of vegetables is of important therapeutic and prophylactic importance, as they are real "springs of health" due to the content of biologically active substances. The working capacity and life expectancy of the population directly depend on the level and assortment of vegetable consumption [2]. To provide the population with a variety of food, it is necessary to increase the range of vegetable crops by introducing new non-traditional vegetable plants into the culture.

A very promising new root vegetable crop is daikon (Japanese radish), which differs from radish not only in its best taste, nutritional and medicinal properties. For the widespread introduction of any crop, it is necessary to organize the production of high-quality seeds.

Daikon seed production in Japan is carried out by a transplant method, in which seeds for obtaining queen cells are planted in late September – early October. In early November, root crops are harvested, selected and transplanted into the open ground, and in June, seeds are harvested [4].

In high-latitude regions, daikon seeds are grown in an annual non-planting culture and a two-year transplant [1, 3, 4].

In Uzbekistan, the technology of daikon cultivation has not been developed, which hinders the widespread introduction of daikon into culture.

With this in mind, we have set ourselves the task of giving a comparative assessment of the various methods of daikon seed production.

**Research methodology**

The research was conducted in 2023 with the daikon variety Kuz hadyasi. They compared the one-year non-stop and two-year transplant method. During transplant culture, the uterine root crops were stored in trenches and conventional storages in winter. The root crops obtained from sowing seeds on July 30; August 10, 20 and 30 were used. All the experiments were laid out in 4-fold repetition with an area of 2.5 m2 accounting plot. Sowing of seeds and planting of root crops was carried out simultaneously in early March. The layout of plants grown from root crops is 70×30 cm, and those grown from seeds are 70× 15 cm.

**The results of the research**

Phenological observations have shown that shoots from seeds appear earlier (after 6 days), and 3-4 days after that shoots from planted root crops appear. There are no significant differences in the time of regrowth of root crops stored in trenches and conventional storages. However, it was found that with both storage methods, root crops obtained from later sowing dates (August 20-30) grew 1-2 days later than root crops obtained from earlier sowing dates (July 30 and August 10).

With the two-year transplant method, it was noted that with both storage methods, seed stalks and queen cells from the last sowing period were later formed. When comparing the queen cells of the same sowing period, those that were stored in trenches grew later.

Plants obtained with the annual method by sowing seeds began to throw out flower-bearing stems 19-20 days later than plants obtained from root crops of early sowing dates with the two-year transplant method. Flowering in annual plants began on 16-17 days, and seed maturation – on 12-13 days later than in two-year-old plants (Table 1).

As shown by biometric calculations, plants grown from seeds were all single-stemmed, plants grown from root crops had single-stemmed, two- and multi-stemmed bushes. At the same time, the ratios of single-stemmed and multi-stemmed bushes were different depending on the timing of cultivation and methods of storing root crops.

When used with a two-year transplant method, the proportion of single-stemmed bushes increased from later sowing dates. Queen cells stored in conventional storages produced more single-stemmed bushes than queen cells stored in trenches.

Methods of storing queen cells with a two-year transplant method did not affect the number and height of the flower-bearing shoots formed. The timing of sowing had a significant impact on the height of the flowering stem. The queen cells of the sowing dates on July 30 and August 10, with both storage methods, gave plants with higher flowering stems than plants from the annual non-transplanting method of seed production. The queen cells from sowing on August 20 and 30 produced significantly less tall stems than the queen cells of early crops, as well as plants of an annual non-transplanting culture (Table 2).

**Table 1. The duration of interphase periods and the proportion of bushes of various types in daikon seed plants of various origins (2023)**

| Methods of seed production | From planting to germinatio, day | | From germination to..., day | | | Type of bush, % | | |
|---|---|---|---|---|---|---|---|---|
| | 10% | 75% | stalking | blooms | maturation | single stemmed | двухсте-бельный | multi-functional |
| Annual non-stop | 3,0 | 6,0 | 39,5 | 53,5 | 88,5 | 100 | 0,0 | 0,0 |
| Two-year transplant of root crops stored in trenches from sowing seeds: | | | | | | | | |
| July 30th | 6,3 | 8,8 | 21,8 | 38,5 | 76,0 | 43,0 | 5,4 | 51,6 |
| August 10th | 6,0 | 8,5 | 22,0 | 37,3 | 76,5 | 32,6 | 16,2 | 51,2 |
| August 20th | 6,5 | 10,3 | 23,0 | 38,8 | 76,8 | 60,4 | 13,3 | 26,3 |
| August 30th | 8,0 | 10,8 | 24,3 | 41,0 | 77,0 | 48,5 | 7,0 | 44,5 |
| Two-year transplant of root crops stored in conventional storages from sowing seeds: | | | | | | | | |
| July 30th | 6,8 | 9,5 | 19,8 | 37,3 | 76,3 | 58,6 | 6,5 | 34,9 |
| August 10th | 6,5 | 9,3 | 19,3 | 36,8 | 77,0 | 46,4 | 11,1 | 42,5 |
| August 20th | 7,3 | 9,8 | 21,0 | 37,3 | 78,3 | 64,9 | 9,4 | 25,7 |
| August 30th | 7,8 | 10,3 | 22,5 | 38,5 | 78,8 | 52,4 | 13,1 | 34,5 |

Plants of the annual non-transplanting method obtained from seeds had a larger number of leaves than plants of the biennial transplanting method. Plants of the two-year transplant method obtained from queen cells at later sowing dates not only formed a lower stem, but also formed fewer leaves and a smaller size than plants from queen cells at earlier sowing dates.

Pods were formed most of all in plants grown with a two-year transplant method from queen cells from early (July 30 and August 10) sowing dates and plants of the annual non-transplanting method.

The methods of storing queen cells did not affect the number of pods formed at early sowing periods, and at later ones, plants obtained from queen cells stored in conventional storages gave them more. The proportion of full pods, in total, was the lowest in plants that grew from direct sowing of seeds. A slight decrease in the proportion of full pods was noted in seed plants of the two-year transplant method obtained from late-sowing queen cells and stored in conventional storages (Table 2).

**Table 2. The height of the flowering stem, the number of leaves and pods, the yield of seeds from the bush and the unit area of daikon seed plants of various origins (2023)**

| Способы семеноводства | Height of flowering stem, cm | Number of leaves, pcs./plant. | Number of pods per plant, pcs. | | Урожай семян | | | Weight of 1000 seeds, g |
|---|---|---|---|---|---|---|---|---|
| | | | total | % full | from the bush, g. | kg/ha | % | |
| Annual non-stop | 83,7 | 25,0 | 315,7 | 78,4 | 4,4 | 410,7 | 100 | 12,6 |
| Biennial transplant with root crops stored in trenches from sowing seeds: | | | | | | | | |
| July 30th | 84,7 | 20,2 | 331,8 | 75,2 | 12,4 | 449,0 | 109,3 | 12,8 |
| August 10th | 87,6 | 21,1 | 327,8 | 77,2 | 13,7 | 466,5 | 113,6 | 13,4 |
| August 20th | 70,8 | 19,8 | 233,9 | 75,8 | 10,3 | 331,9 | 80,8 | 10,6 |
| August 30th | 63,5 | 19,4 | 209,7 | 76,5 | 8,9 | 276,1 | 67,2 | 9,6 |
| Two-year transplanted root crops stored in conventional storage facilities from sowing seeds: | | | | | | | | |
| July 30th | 86,6 | 20,8 | 330,0 | 81,7 | 13,5 | 552,4 | 134,5 | 13,6 |
| August 10th | 88,3 | 22,3 | 318,0 | 85,9 | 14,2 | 577,9 | 140,7 | 14,0 |
| August 20th | 75,0 | 20,3 | 275,8 | 78,5 | 9,6 | 345,7 | 84,2 | 12,2 |
| August 30th | 70,1 | 19,8 | 226,6 | 70,6 | 8,5 | 290,6 | 70,7 | 11,5 |
| $НСР_{05}$ | **4,6** | **0,8** | – | – | | **25,5** | – | – |
| $P_{\%}$ | **2,0** | **1,9** | – | – | | **4,8** | – | – |

The highest seed yield per bush was formed by plants of the biennial transplant method of seed

production, obtained from mother plants of early sowing dates (July 30 and August 10), stored both in conventional storage facilities and in trenches. A significantly lower yield was formed by plants of the biennial transplant method using mother plants from late sowing dates.

The lowest yield per bush was formed by plants of the one-year non-transplant method. They were 1.9-2.2 times lower than those of plants from mother plants of late sowings and 3.1-3.2 times lower than those of plants from mother plants of early sowings.

The yield per unit area is determined not only by the yield from each plant, but also by the number of plants per unit area. It was found that with both storage methods, mother plants obtained from earlier sowing dates were less sparse than plantings of mother plants from later sowing dates. At the same time, when using mother plants from the same sowing dates stored in uncooled storage facilities, the plantings were less sparse than those stored in trenches. This further increased the difference in seed yield per unit area.

The reliably highest yield per unit area (577.9 and 552.4 kg/ha) was obtained from mother plants grown by sowing on July 30 and August 10 and stored in conventional storage facilities. The second place in yield was occupied by plants grown from mother plants from sowing on July 30 and August 10 and stored in trenches.

A similar, but reliably lower yield per unit area than these two experimental variants was obtained from annual non-transplanted plants. The comparatively high yield per unit area in these experimental variants was due to the increased density of plant standing. The use of mother plants from late sowing dates (August 20 and 30) for growing seeds significantly reduces the seed yield per unit area.

The largest seeds were formed by plants grown from mother plants obtained by early sowing, and the smallest plants were obtained from mother plants of late sowing.

**Conclusions**

1. In the conditions of Uzbekistan, daikon seeds can be obtained both by the annual non-transplanting method and by the biennial transplanting method.
2. The highest seed yield per unit area is formed by plants grown from mother plants of early (July 30 and August 10) sowing dates, then from plants of the annual non-transplanting method.
3. Using mother plants obtained from late (August 20-30) sowing dates for growing seeds significantly reduces the seed yield.

**REFERENCES**

1. Akhmetova F.S. Growing daikon seeds without transplantation in the south of Kazakhstan. // Proceedings of the International Symposium "Current State and Prospects for the Development of Selection and Seed Production of Vegetable Crops". Moscow, VNISSOK, 2005. v.1. pp.391-393.
2. Litvinov S.S. The industry needs state support. // journal Potatoes and Vegetables. Moscow, 2002. no.4. pp.4-6
3. Pivovarov V.F., Lebedeva A.T. Growing seeds on a personal plot. Moscow, Kolos, 1995. pp.202-204.

4. Stepanov V.A. Development of individual elements of seed production technology for mid-season daikon in the conditions of the Central Non-Black Earth Region. // Proceedings of the International Symposium “Current State and Prospects for the Development of Selection and Seed Production of Vegetable Crops”. – Moscow, 2005. – v.1. – pp.422-430.