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ADVANTAGES AND YIELDS OF GROWING ONIONS BY SEEDLINGS AND THE NEW METHOD IN THE CONDITIONS OF KARAKALPAKSTAN

Ismoilova N.
Assistant of the Karakalpakstan
Institute of Agriculture and Agrotechnologies

Hayitboyev D.
Assistant of the Karakalpakstan
Institute of Agriculture and Agrotechnologies

Seilbekov R.
Assistant of the Karakalpakstan
Institute of Agriculture and Agrotechnologies, (PhD)

Abstract
Methods of sowing onions and their advantages, as well as methods for increasing their yield using new methods.

Keywords: Sowing methods, sowing dates, their effective use, ensuring food security, and improving soil structure.

Introduction

Currently, in Uzbekistan, 60 percent of vegetables are planted as seedlings in open ground and 90 percent in protected ground. In our republic, vegetable crops are planted in half of the fields of dehkan, farmer, and household plots and in protected areas using the seedling method. Currently, the seedling method has several advantages. Firstly, seedlings overtake field plants in development by 30-

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40 days, which allows for early harvesting.

Secondly: Thanks to seedlings, it is possible to grow heat-loving vegetables and crops (tomatoes, watermelons, melons) in temperate climates.Thirdly: it is easy to organize the fight against diseases and pests using the seedling method.Fourthly: It saves seeds (by 3-7 times compared to direct sowing in the field) and there is no need to thresh, crust, and weed. Of course, this method has already become popular in many basic vegetables. In the conditions of the Republic of Karakalpakstan, this method is widely used to obtain high yields of agricultural crops. However, no significant results have been achieved in growing onions using this method, of course, this is due to the fact that scientific research on this method has not yet been conducted on this crop.

Of course, in our research work, we made the method of growing onions by seedlings one of our main tasks.

We also need to add that; In Uzbekistan, onions are mainly sown in three seasons: in early spring - at the end of February - beginning of March; in the summer-autumn seasons - in August - September; and before the winter season - at the end of November - beginning of December. Onions planted in early spring are better and better preserved in unfavorable winter conditions compared to onions planted before summer-autumn and winter.

Therefore, storing onions planted in early spring during winter is more effective than othersHowever, in our complex soil and climatic conditions, if onions are planted in early spring, their germination time increases, resulting in weed infestation in the field. This leads to a decrease in the number of onion seedlings, which leads to a decrease in yield. In the conditions of Karakalpakstan, it is better to plant early onions through seedlings to obtain an early harvest, as it prevents the above-mentioned negative consequences.

Growing onions as seedlings; Late-ripening onion varieties are sometimes grown from seedlings. For this purpose, onion seeds are soaked and sprouted in special nurseries one and a half to two months before planting, 20-25 grams per square meter of oil. In this case, onion seeds should be large, uninfected, and undamaged. Treatment of seedlings in the nursery is carried out by maintaining a temperature of 20-25°C during the day and 8-10°C at night, as well as uniform watering.

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When the seedling develops 2-3 leaves, it is ready for transplanting to the field.
Onion
Seedled onions yield high yields, but due to the high labor intensity, this method is used relatively rarely. The best land areas for onion cultivation are soils rich in organic matter, with an ambient pH of 6.4-7.9. Onions bear good fruit on light, loamy, and weed-free gray soils. High onion yields cannot be achieved in heavy loamy, marshy, and saline soils. If the soil indicator is pH=5, onions cannot be grown on such lands. If pH=5-5.5, then lime must be applied to the plants, or lime can also be applied to the soil during autumn plowing. Too much nitrogen slows down onion ripening, and such onions do not store well in winter. If other varieties of onions recommended above have also been planted in the area where onion seedlings will be grown, then it is advisable to plant them farther from the areas where onions were grown, and the worst predecessors for them are green plants. Constantly replanting onions in the same place leads to an increase in diseases and pests harmful to onions.
This leads to a decrease in the quality of onions and a sharp decrease in yield. Therefore, it takes 3 years in light soils and 4-5 years in heavy soils for onions to be planted again in the same place.
After onions, other types of agricultural crops can be freely planted. If onions are planted in fields with fresh manure or instead of alfalfa fields, it becomes difficult to care for them, because the soil where onion seedlings are grown becomes overgrown with weeds - the quality of such onions is also not very good. If weed control preparations are not applied, it is advisable to plant onions in such areas in the second or third year.
And in the fields where onions were sown, onions can be sown once more only after three years. Onions are sown as seedlings in early spring or late autumn. However, before sowing onions, it is advisable to thoroughly clean the land from crop residues, apply rotted manure and mineral fertilizers, deeply plow the land, and level the ground before sowing. To reduce the number of weeds in fields where early spring onion seedlings are planted, after harvesting the residues of preceding crops, the land is plowed, furrows are made, and the field is thoroughly irrigated. After 9-11 days, the field where seedlings are sprouting is chiselled, and

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weed seedlings are eliminated. Onions arrive ready for transplanting.

In our experiments on growing onions from seedlings, we selected 5 onion varieties, including Kaba-132, Karatol, Ok dur, Lione, and Wolf onions, and at the end of March, i.e., in the third ten-day period, seeds were sown on March 25. At the same time, phenological and biometric indicators of the sown onion varieties were studied, such as germination (as a percentage), germination, the formation of the first, second, and third true leaves, as well as the total number of leaves formed, plant height, and the degree of ripeness. In the standard Kaba-132 variety, full seed germination was observed on April 5, greenhouse germination was 90.4%, this indicator was observed in the Karatol variety on April 1, in the Lione variety on April 2, and in the Okdur and Wolf varieties on April 3, and onion seedlings appeared 2-3 days earlier than in the standard Kaba-132 variety. table-1

Table-1

Indicators of growth and development of onion varieties in the nursery

Types	Initial onion germination (day)	Full sprouting of onions (days)	Preparation time of the onion seedling (days)
Kaba-132	10	23	30
Karatol	6	18	31
Oqdur	8	20	34
Lione	7	25	35
Volf	9	24	35
Red onion (local)	7	21	35

To prepare the seedlings faster, 2g of nitrogen compounds were added to 10l of water; the seedlings developed well and were transplanted to the open field on 30.04.

After a week, when the seedlings fully sprouted, mineral fertilizers were applied, and watering was carried out depending on the soil moisture. When comparing plant height among varieties, the highest plant height was observed in the Karatol variety 58.1 cm, Kaba plants 48.9 cm, average plant height 55.4 cm, and the lowest plant height was observed in the Okdur variety Lione 44 cm and Wolf 41

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cm.

When comparing leaf formation between varieties, the highest leaf formation was noted in plants of the Karatol, Kaba-132, and Okdur varieties. The Lione and Wolf varieties developed very slowly. When growing onion varieties, the ripening of the plant compared by varieties was as follows.

Among the varieties, the earliest ripening and ripening of the harvest was observed in the Karatol variety on July 17, the mid-ripening Oqdur variety on July 21, the standard Kaba-132 variety on July 25, Loine on August 2, and the Wolf variety on August 5. Here, in terms of late ripening and yield, the Lione and Wolf varieties showed significantly lower results/

Table-2 Morphobiological indicators of onion seedlings in the open field

Varieties	Full grafting when planted in open ground (days)	Average onion plant height (cm)	Number of leaves of an onion plant (units)	Width of onion leaves (cm)	Bulb weight of an onion plant (1 pc.)
Kaba-132 (st)	5	48,9	8,7	2,3	159
Karatol	5	58,1	8,4	2,3	164
Oq dur F1	5	55,4	8	2,3	170
Lione F1	6	44	7,4	2	112
Volf F1	6	41	7,4	2	110
White onion	5	55,6	9	2,3	165
Red onion	5	59	8,8	2,3	146

As can be seen from the data from the results of our studies, the phenomorphological indicators of onion varieties when growing plants also depend on the crop variety. The best aspect of seedling cultivation is that the product ripens earlier than by the scattered method, and a high yield can be obtained. When onions are planted in seedlings, there are no weeds and they require very little water. Besides that, we know by examining the bulbs, bulbs grown by the scattered method are not uniform. For example, we distinguish small, medium, and large sections. Large grown onions have high market value. Of course, there is high demand for such onions in the market, and their export potential is also high.

Medium onions can be exported to local markets, for example, small ones are in

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low demand in the market. Taking this information into account, when planting seedlings, it will be possible to obtain standard onions.

Now onions grown from seedlings will have the same yield and higher productivity. When released to the market, it will be possible to sell it for the same amount.In addition, onions grown by seedlings are ready 25-30 days earlier than onions grown by the bulk method. Seedling onion cultvation requires more labor, but it is much more efficient.

In developed countries of the world, such as China, Japan, the USA, and Russia, onions aregrown from seedlings. In these countries, onion seedlings are sown using special sowing machines. Thanks to such onion planting techniques, it becomes possible to plant seedlings in large areas. However, in our conditions, planting on large areas requires a lot of labor because we haven't yet received machines for planting onion seedlings. If we bring such machines, we will also have the opportunity to plant them in large areas.

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