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Study and Evaluation of a Collection of Promising Green-Leaved Basil *(Ocimum Basilicum L.)* Variety Samples on Important Economic Traits

F. A. Nurmamatov [1], M. Kh. Aramov [2], N. A. Muzafarova [3]

[1] Doctoral student of the Scientific Research Institute of Vegetables, Pulse Crops and Potatoes

[2] Doctor of Agricultural Sciences, Professor, Head of the Department of Fruit and Vegetable Growing, Viticulture, Greenhouse Farming, Termiz Institute of Agrotechnologies and Innovative Development

[3]Student of Termiz Institute of Agrotechnologies and Innovative Development

Abstract: The article presents the results of the assessment of 9 varieties of basil in terms of leaf yield, green and dry masses. High harvest leaves, green and dry masses marked in samples Vostochny Bazaar (mixture), Basil fragrance lemon. The yield of the leaves of these samples is 3.8-4.0 kg / m 2, which is 131.0-137.9% in relation to the standard. These same samples are distinguished by high yields of green (leaves, stems, shoots) and dry masses. Highlighted variety samples are a valuable source material for selection. They can be recommended for cultivation in personal plots, vegetable farms.

Keywords: basil, green color, green mass yield, leaf yield, dry yield masses.

Currently, it is possible to increase the existing range of vegetable crops by creating new varieties, introducing new and rare crops.

Basil, one of the valuable vegetable crops, is notable not only for its decorativeness, but also for its medicinal properties and its rich content of vitamins and minerals necessary for humans. Until now, there has been no research work on the selection, seeding and cultivation technology of basil in our country. Based on this, we set ourselves the goal of creating an initial resource for the study and selection of 9 varieties of green basil from different regions in 2020-2021 at the SPE and KITI Surkhondarya scientific experimental station. This paper presents data on green and dry mass yield of green leafy basil variety samples.

Method of research. The experiments were carried out on the basis of the methodical guide called "Osobennosti agrotechniki i seleksii basilika (Ocimum L.)" developed by T.V. Sachivko, V.N. Bosak and others (4) scientific staff of the Belarusian State Agricultural Academy (BGSXA:Gorki - 2015) was carried out.

A mixture of humus (50%), field soil (40%) and sawdust and crushed straw (10%) was prepared for growing seedlings under 28 fevaral films. This mixture was placed in cassettes of size 8x8, 10x10 x and watered, 2-3 seeds were sown in each of the pots, the mixture was placed at a depth of 0.2-0.3 cm, planted and 10% of most varieties sprouted in 7 days, 75% sprouted in 12 on the day it sprouted, watering and fertilizing were carried out.

Seedlings were transplanted to the open field on April 6. The experiment was carried out without return. The area of the account is 3.5 m^2. The number of plants in the compartment is 20. Planting scheme 70x25 cm. Muattar cultivar with green leaves was taken as a control and it was placed after every 10 cultivars. During the vegetation period, phenological observations, morphobiological description of plants, determination of productivity were carried out. Productivity determination was carried out with two objectives in mind. For the first purpose, that is, the determination of the yield

for consumption of fresh basil was carried out at the beginning of the appearance of flower buds on the plants.

For the second purpose, that is, determination of productivity by drying basil leaves was carried out in the phase of flowering of plants. It is during this period that essential oils are most concentrated in basil leaves and inflorescences (5). In this case, the yield was determined by measuring the harvested blue mass after drying it at home. During the growing season, mowing was done 5 times. The plants were harvested 10 cm above the root neck.

Research results. When determining the blue mass yield of basil variety samples, leaf yield and stem mass are determined separately. Samples of the variety with a low mass of stems and branches are considered promising. Because basil leaves are mainly eaten for food purposes (1, 2, 3). Among the studied varieties of basil with green leaves, only Vostochniy bazar (smes), Bazilik aromat limona varieties had a leaf yield of 3.8-4.0 kg/m^2, which means 31.0-37.9% more than the standard variety, 1- table. Yield close to the Standart Baxt variety was observed in the Azim variety and it was 2.8 kg/m^2 or 96.5% compared to the standard. In other studied variety samples, the leaf yield was low compared to the standard and was 1.4 (Bazilik zeleniy) - 2.5 (Feyerverk vkusa) kg/m^2.

In general, the mass of stems and branches was 37.7-46.2% of the blue mass. The highest mass of stems and branches was observed in the samples of Citrus fresh, Ovoshchnoy lime, Firework vkusa (smes), Green-leaved basil, Bazilik zeleny variety and was 64.0-75.0% of the blue mass. Such varieties cannot be a promising starting source for selection work.

Table 1. Blue mass yield (kg/m^2) of green-leaved basil variety samples, 2020-2021.

№	Varieties	Leaf productivity, kg/m ^{2}	Compared to the standard,%	Mass of stems and branches, kg/m ^{2}	Blue mass productivity, kg/m ^{2}	Compared to control,%
1	Muattar, **(control)**	2,9	100	1,8	4,7	100
2	Azim	2,8	96,5	1,7	4,5	95,7
3	Sitrusoviy fresh	2,4	82,7	1,8	4,2	89,3
4	Ovoщnoy laym	2,2	75,8	1,5	3,7	78,7
5	Bazilik zeleniy	1,4	48,2	1,2	2,6	55,3
6	Feyerverk vkusa (smes)	2,5	86,2	1,6	4,1	87,2
7	Vostochniy bazar (smes)	3,8	131,0	2,3	6,1	129,7
8	Bazilik aromat limona	4,0	137,9	2,5	6,5	138,2
9	Joziba	1,7	58,6	1,2	2,9	62,6
	$\sum$	23,7		15,6	39,3	
	$\bar{X}$	2,63		1,73	4,36	

In Vostochniy bazar (smes), Bazilik aromat limona cultivars with the highest leaf yield, stem and branch mass was 60.5-62.5% compared to leaf yield.

The highest indicator of blue mass yield was observed in Vostochniy bazar (smes), Bazilik aromat limona varieties and it was 6.8-6.5 kg/m^2. This means 29.7-38.2% higher than the standard variety.

The productivity of basil variety samples was also determined after drying. In the experiments conducted for this purpose, the highest blue mass yield was observed in samples of Vostochniy bazar (smes), Bazilik aromat limona varieties and it was 6.8-6.9 kg/m2. This means 23.6-25.4% more than standard variety Bakht. The yield after drying was also high in these varieties and was 1.0-1.1 kg/m2.

In the control variety Muattar, this indicator was 0.9 kg/m2, Table 2. The dried mass was 5.4-19.9% of the blue mass depending on the variety. According to this indicator, the best variety samples are Muattar, Azim, Vostochniy bazar (smes), Bazilik aromat limona, Veyerverk vkusa (smes), which had a dry mass yield of 0.7-1.1 kg/m^2. This, in turn, makes up 12.7-19.9% of the yield of blue mass.

Such varieties are valuable starting material for breeding. Thus, from the samples of green basil varieties studied, Vostochniy bazar (smes), Bazilik limonniy aromat variety samples, which have the highest yield of blue mass, were separated.

Table 2. Dried yield of green leaf basil variety samples, 2020-2021.

№	Varieties	Blue mass productivity, kg/m ^{2}	Relative to the comparative type,%	Productivity of dried mass, kg/m ^{2}	In relation to the blue mass, %	In relation to the comparative variety,%
1	Muattar, **(nazorat)**	5,5	100	0,9	16,3	100
2	Azim	4,2	76,3	0,6	10,9	66,9
3	Sitrusoviy fresh	3,4	61,8	0,5	9,1	55,8
4	Овощноу laym	3,2	58,2	0,5	9,2	56,4
5	Bazilik zeleniy	3,5	63,6	0,5	9,0	55,2
6	Feyerverk vkusa (smes)	4,8	87,2	0,7	12,7	77,9
7	Vostochniy bazar (smes)	6,1	123,6	1,0	18,1	111,0
8	Bazilik aromat limona	6,5	125,4	1,5	23,0	141,1
9	Joziba	2,8	51,2	0,3	5,4	33,1
	$\sum$	41,1		6,1		
	$\overline{X}$	4,56		0,67		

According to the yield of dried mass, samples of such varieties as Muattar, Azim, Vostochniy bazar (smes), Bazilik aromat limona, Veyerverk vkusa (smes) were distinguished. Isolated variety samples are a valuable initial source for basil breeding in Uzbekistan.

Joziba variety of basil

(Figure 1)- The height of the bush is 32-35 cm, the number of varieties of basil is 75-85 pieces, the number of leaves in basil is 6500-7500 pieces, the length of the leaf plate is 1.3-1.6 cm, the width is 0.3-0.8 cm, this variety is small-leaved is considered 1000 seeds weight 0.96 g. It is green in color and has a smell and taste, that's why. Fresh or dried leaves and upper side branches are used in various foods, preserves, and pickles. The flowers are white and pink in color and form inflorescences at the end of the stem.

Muattar variety of basil

(*Figure 2*)- The height of the bush is 55-60 cm, the number of varieties of basil is 45-55 pieces, the number of leaves in basil is 650-750 pieces, the length of the leaf plate is 6.0-6.8 cm, the width is 3.2-3.9, this variety is considered large-leaved. 1000 seeds weight 1.67 g. It is green in color and has a smell and taste, that's why. Fresh or dried leaves and upper side branches are used in various foods, preserves, pickles.

CONCLUSION

Thus, for the first time, as a result of studying the morphological characteristics of 9 varieties of green basil with different ecological and geographical origins in the south of Uzbekistan, 5 varieties with high promising main economic characteristics were selected for the selection of basil in our republic.

Muattar, Bazilik aromat limona, Joziba were selected from the basil varieties studied in the study for the purpose of breeding for industrial and homestead cultivation according to the main high economic characteristics.

Among them, Vostochniy bazar (smes), Bazilik limonniy aromat, Azim, Muattar, Joziba variety samples are recommended as a starting source for selection work and to be grown in vegetable farms and private plots.

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