

## PROMISING, EARLY RIPENING NEW LINES OF EGG-PLANT WHICH IS RESISTANT TO BULGING NEMATODES

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### ABSTARCT:

The article presents the results of a competitive test of early-ripening egg-plant lines L-9/13 and L-7/13, conducted in 2014-2016 at the Surkhandarya scientific experimental station. According to the given information, the highest total yield was observed on the L-7 line and it was 69.0 t / hec, which is 15.9% higher than the comparative variety and the L-9 line was identified as a new aubergine variety with early ripening, round fruit shape, resistant to bulging nematodes and from 2019 onwards, agricultural crops have been handed over to the State Variety Testing Commission.

**KEYWORDS:** eggplant, root knot nematodes, selection, line, stability, grade, standard grade, repeatability, early maturity, hybrid, productivity.

### INTRODUCTION:

Egg-plant has its own unique taste, it is sent over long distances and it is of particular importance with good storage in the plant and suitability for processing. In recent years, the interest of farm enterprises and private landowners in this crop in the country has attracted the attention of breeders of the field, which has a useful nutritional value and high

technological quality that makes it an important task to create varieties and hybrids that are resistant to bulging nematodes and adverse factors of the external environment.

Lots of selection scientists and researchers in the world on eggplant selection: V.F.Pivovarov, M.I.Mamedov and others (1998), M.I.Mamedov, O.N.Pishnaya, A.M.Verba (2009, 2010) has reported in the literature that a number of important problems have been solved through their scientific researches.

Including: G.Bletsos, C.Thanassouloupoulos, and others (2003). M.C. Daunay, (2008), Singh and Gopalakrishnan, (1997), King and others(2008), Irene Calvo-Asensio, Jaime Prohens, and Carmina Gisberd (2014) note that soil pathogens can cause significant losses in eggplant cultivation, but when used as a graft in the wild varieties of egg-plant with resistance and tolerance to root pathogens improves egg-plant production by ensuring strong growth of grafts.

And they are wild egg-plant "Solanum torvum Sw." generation is recommended for use in grafting resistance to soil pathogens on a large scale (verticilliosis, fusarium wilt, nematode bumps). Because it has been claimed that eggplant provides growth, development and vigor.

According to the analysis of a number of

literatures, a lot of research has been done on egg-plant selection however, insufficient data are available on the selection of cultivars and hybrids resistant to eggplant nematode.

Based on this, to create varieties and hybrids of egg-plant resistant to early maturing, valuable economic features of the bulging nematode and we have made its introduction into production the goal of our research.

One of the new directions in our country is the creation of varieties and hybrids of eggplant resistant to early ripening, bulging nematodes. The creation of such varieties and hybrids will first of all satisfy the demand of the population of our country for fresh, vitamin-rich eggplant in early spring, secondly, it prevents the decline in productivity due to the pest nematode, which is widespread in the country.

For this, since 1997, the selection work has been carried out at the Surkhandarya scientific research station and experimental station SPE and KITI to create varieties and hybrids resistant to early maturing, marketable fruits, resistant to bulging nematodes.

#### **THE MATERIAL AND STYLE OF THE RESEARCH:**

About 60 varieties examples from Russia, Moldova, China, USA, Canada, Japan, Spain, France, Hungary, Zambia, Nepal, Afghanistan, Syria, Korea and more than 30 first-generation hybrids of our own selection were used as research material.

As a result of research conducted in 1997-2016, 14 varieties with early maturing, bulging nematode-resistant, valuable economic traits, 8 first-generation hybrids and more than 35 high-generation lines were isolated. The early maturing G1 Zamin hybrid created on this basis has been included in the State Register since 2011 and the early maturing "Surkhan go'zali" variety since 2015.

In 2014-2016 years, early selection of L-9/13 and L-7/13 lines of egg-plant belonging to our selection was conducted.

At the result of the lines in the selection test are premature, the early ripening "Surkhan go'zali" variety included in the state register was used as a comparative variety.

Research was carried out on the basis of "Методика Государственного сортоиспытания сельскохозяйственных культур". (M., 1975, part IV).

The experiment has four repetitions. The total account area 21,0 m<sup>2</sup>. The number of plants in the compartment is 81, the compartment has three rows.

During the operation, phenological observations and yield determination were carried out and took different types of conclusions.

The early maturity of promising varieties was determined by determining the yield of the first three harvests. The degree of resistance of plants to bulging nematodes was assessed by the method of Kondakova, Kvasnikov, Ignatova (1976), when the root system was dug at the end of the application period.

The data were processed mathematically based on the method of field experiments of Dospekhov (1985).

#### **THE RESULTS OF THIS RESEARCH**

The morphobiological characteristics of new lines of fast-ripening egg-plant are given in the Table 1.

As we can see the given table, the validity period on the lines was 102-103, which was equal to the comparative grade. According to the plant type, the L-7 line plants were upright, growing to 75 cm in height and comparable to the comparative variety. On the L-9 line, the plants are branched, reaching a height of 45 cm and it is considered short.

Table 1. Economic and morphobiological characteristics of new fast-ripening eggplant lines, 2014-2016.

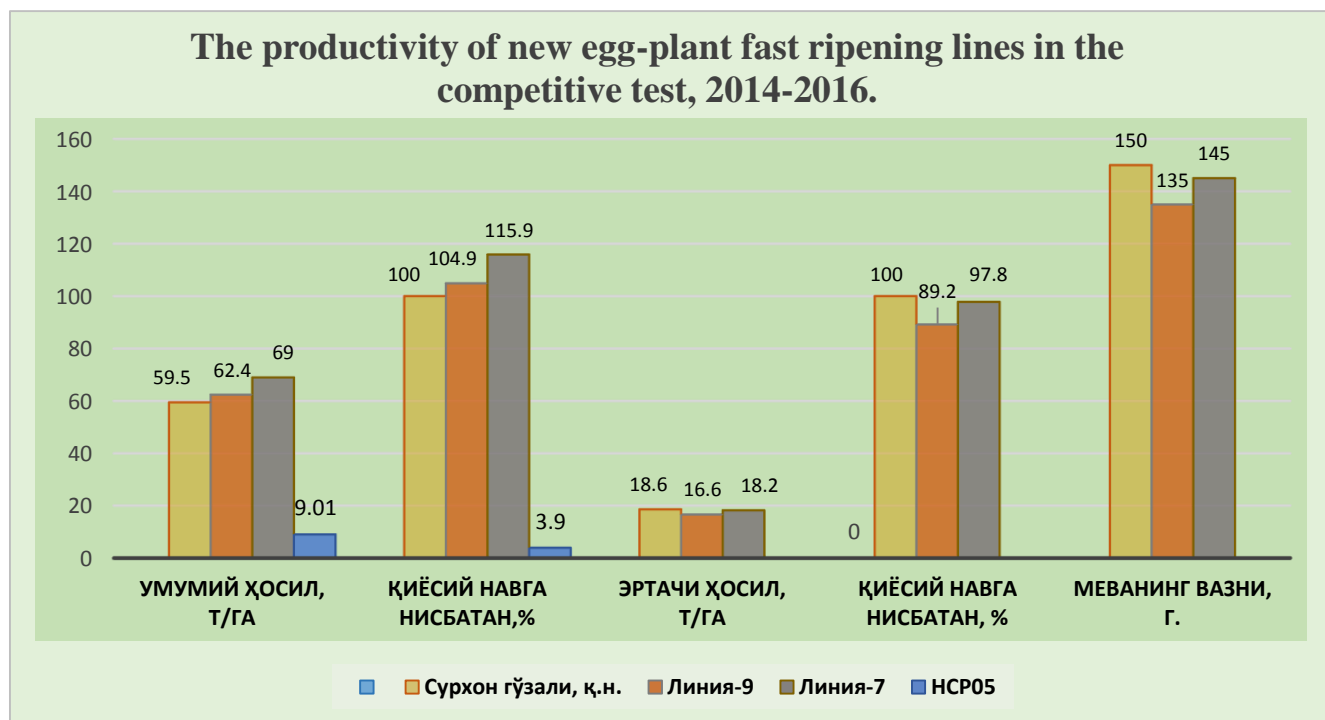
Name of varieties	Validity period, days	Plant height, sm	Fruit		
			shape	External shape	Color of kernel
"Surkhan go'zali"	102	75	cylindrical	Purple, smooth, gloss	light green
Line-9	102	45	round	Purple, smooth, gloss	white
Line-7	103	75	cylindrical	Black, purple, smooth, gloss	light green

The shape of the fruit is long cylindrical on the L-7 line, the appearance is dark purple smooth glossy, the amount of seeds in the fruit

is moderate. In contrast to the L-9 line, the shape of the fruit is round, the color is glossy with a smooth purple surface, the amount of seeds in the fruit is large and the core of the fruit is white.

In the selection test, the highest total yield was observed on the L-7 line, which was 69.0 t / hec, this is 15.9% more than the comparative variety. In the comparative variety, this figure was 59.5 t / hec, Fig.1.

Tomorrow's yield was close to the comparative variety on the L-7 line and was 18.2 t / ha. In the comparative variety, this figure was 18.6 t /hec. The weight of the fruit on the L-7 line was 145 g, close to the fruit weight of the comparative variety. On the L-9 line, it was 15 g less than the comparative variety, which was 135 g.



1<sup>st</sup> Picture

At the end of the collection period, the root of the prospective lines was excavated and the infestation with bulging nematode was assessed, Table 2.

No signs of damage were observed at all in 90% of the plants on the L-7 line and when the plant roots were excavated and 10% of the plants were found to be infested with 1 point. The average damage was 0.1 points and the

durability index was 97.5% and the endurance was considered the highest line. Although resistance was slightly lower on the L-9 line, no damage was observed in 83.3% of the plants and 13.3% of plants were found to be affected by 1 point and 3.3% of plants by 2 points.

The average damage on this line is 0.2 points, disease progression was 5.0%, disease prevalence was 16.6%, and the resilience index was 95.0%.

Table 2. Damage to fast-ripening egg-plant lines by bulging nematode in a competitive trial, 2014-2016.

Variety and line	Number of plants	Damage rate, points					Average damage, points	C, %	R, %
		0	1	2	3	4			
"Surkhon go'zali"	30	0	10,0	53,3	30,0	6,7	2,33	58,3	100
Line-9	30	83,3	13,3	3,3	0	0	0,2	5,0	16,6
Line-7	30	90,0	10,0	0	0	0	0,1	2,5	10,0

Both varieties are practically resistant. In the comparative variety, 100% of the plants were infested with bulging nematodes, which are considered resistant.

That's why, according to the results of the selection test, the eggplant L-7 line was distinguished as the line with the highest yield of early ripening, fruit-bearing, general (69.0 t/hect) and early (18.2 t/hect), resistant to bulging nematodes. The L-9 line was selected as a new eggplant variety with early ripening, round fruit shape, white color of the fruit core, resistant to bulging nematodes and from 2019 it was submitted to the State Variety Testing Commission.

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