Original Research Article

SOYBEAN DISEASES AND THEIR EFFECT ON YIELD ELEMENTS.

Abstract: *Soybean production in the world is growing at a very high rate. Currently, the largest areas of soybean cultivation are in the USA (about 35-40% of the world), Brazil (20%), Argentina (12%), China (12-13%) and India (8%). Europe accounts for only 2% of the world's soybean area. Russia's shadow area is 0.7-1% of the world's total shadow area. The world average yield is about 22.5 t/ha. The United States and Brazil lead the world in terms of soybean cultivation, accounting for approximately 50 and 20% of the total soybean production. Soybean production in Europe is about 1.5% of world production. In recent years, measures are being developed in our republic to plant and care for soybean as a main and repeated crop and to increase its yield. Fusarium L. also causes a loss of 30-60% of grain yield and serious damage to grain protein and fat content. With this in mind, this paper discusses the development, prevalence, yield and 1000-grain weight of soybean fungal diseases, and the effectiveness of seed treatments for disease control.*

Key words: *Soybean, grain yield, fusarium, disease, KTW, variety, fungus, pathogen, yield, drug, variant, Fusarium L, grain, plant, research, control, etolon, rate of consumption, To'maris-MMAN, Oyjamol, legume, flowering, Maxim XL 035 FS, Sunvaks , Oplot, Tebikur FS 060, Daltebu FS 6% s.e.sus, type, field, white rot, sclerotinosis, leaf, phenology, moisture, laboratory, style, ascochytosis, peronosporosis, bacteriosis, spotting, year, damage, world, infection, field, fertilizer.*

Introduction. Soybean is considered one of the oldest crops in the world, and it is one of the most important sources in solving the current problem, protein deficiency. Due to the fact that soy protein is similar to animal protein in terms of its chemical composition, all developed countries pay great attention to soy cultivation. In particular, soybean crops are planted in more than 60 countries in the world, and the average grain yield in the last 3 years is 340.86 million tons. Of this, USA 119.5 million tons (35%), Brazil 112.56 million tons (33%), Argentina 50.5 million tons (14%), China 14.6 million tons (4%). other countries produce 43.7 million tons (14%) of soybeans.

Now 26-30% of the yield is lost due to various diseases and external abiotic factors in the cultivation of soybeans in the world, like other crops. Currently, soybean growing countries are seriously affected by fungal, viral and bacterial soybean diseases. In particular, according to the distribution of types of diseases, 25 types of diseases cause serious damage to soybean productivity in the USA, of which 3 types are caused by bacterial, 19 types by fungi, and 3 types by virus diseases. In China, 6 out of 8 diseases are caused by fungi. 32 types of diseases have been identified in Russia, and 23 types of diseases are found in Ukraine, 16 of which are caused by fungi and cause loss of productivity. Taking into account that fungal diseases of soybeans such as white rot or sclerotinosis, false powdery mildew, leaf rust disease and septoriosis damage soybean fields in the dry and wet years of the year, measures to combat them and prevent the spread of diseases are one of the urgent tasks of world science.

MATERIALS AND METHODS. Conducting field experiments, phenological observation, harvest and calculation, and laboratory analyzes are carried out in "Generally accepted methods", statistical analysis of data is carried out based on B.A. Dospehov's "Metodika polevogo opyta" method and Microsoft Office Excell 2010 programs. The spread of fusarium disease of soybeans is determined by the method of Peresypkin, Tyuterev, Batalova (1991), the disease damage and the effect on productivity are determined by the method of Chumakov and Zakharov (1990).

Comment [H1]: SOYBEAN DISEASES AND THEIR EFFECT ON YIELD ELEMENTS.
Where?

Comment [H2]: The abs must follow the same pattern of the ms but in very brief text. The wrote abs here is similar to that of a review and not a research article!

Comment [H3]: *Keywords:*are these keywords or an abstract?! `

Comment [H4]: the most important source to solve the protein deficiency.

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Comment [H6]: Soybean crop is grown in more than 60 countries in the world with an average global grain yield, in the last 3 years, of 340.86 million tons. The details per country are as follows,
(mention the reference)

Comment [H7]: However, 26-30% of the crop yield is lost due to various diseases and external abiotic factors. Currently, soybean growing countries are seriously affected by fungal, viral and bacterial diseases. In particular, according to the distribution of types of diseases, 25 types of diseases cause serious damage to soybean productivity in the USA, of which 3 types are caused by bacterial, 19 types by fungi, and 3 types by virus diseases. In China, 6 out of 8 diseases are caused by fungi. 32 and 23 types of diseases have been identified in Russia and Ukraine, respectively.Of these 16 are caused by fungi. However, taking into account that fungal diseases of soybeans such as white rot or sclerotinosis, false powdery mildew, leaf rust disease and septoriosis damage soybean fields in the dry and wet seasons of the year, measures to combat them and prevent their spread are considered an urgent task of the international academia.
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Comment [H8]: MATERIALS AND METHODS.
Must be in details that include what you use and how you used together with the data collection and analysis.

RESULTS AND DISCUSSION. Fusarium, ascochytosis, peronosporosis, pustular bacteriosis, angular spotting of soybeans are widespread and extremely harmful [7]. L.V. Fadeev stated that the total loss of soybean crops in the world is about 26.4%, of which 8.9% is due to pathogenic microorganisms, 8.8% is due to insects, 7.5% is due to weeds, and 1% is due to viruses. 2% yield is lost [9]. About 30 diseases affect the coya crop. The most common and damaging causes of this are fungal diseases [10]. Fusarium wilt is one of the most harmful diseases of soybeans. There are several manifestations of this disease: death of the growing point, leaf spotting, pod and seed rot, but the most common are root rot and tracheomycotic build-up [5]. The source of fusarium is infected seeds, soil and plant residues. Due to fusarium, the yield reaches 20-30%, the loss of seed germination reaches 32-40% [12].

Plant disease is a disruption of normal physiological functions caused by a pathogen (causing pathogen) or unfavorable environmental conditions, which leads to a decrease in plant productivity or complete death [3]. Causes a shortage, a decrease in the quality of products, and often they become unfit for sale and consumption [11].

The increase in the area of agricultural crops and the widespread spread of diseases in plants, especially fungal diseases, cause a shortage of crops, a decrease in the quality of products, often making them unfit for sale and consumption. In this regard, the problem of plant resistance to fungal infection is economically and ecologically relevant.

The genus Fusarium includes many phytopathogenic species that are widespread in nature and economically important. They synthesize mycotoxins trichothecenes, zearalenones, fumonisins, and enniatins, which pose a major threat to food, humans, livestock, and other animals.

RESEARCH RESULTS: One of the main reasons for the relatively weak study of Fusarium fungi in our republic is the rapid change of its morphological characteristics and the extreme difficulty of identifying its species. They are common in soil, air, water, and plant residues, and according to their feeding method and their relationship with higher plants, they are classified as facultative phytoparasites or saprotrophs and have the ability to infect more than 400 types of plants.

Experiments were conducted in the irrigated fields of the Southern Agricultural Scientific Research Institute to study the effects of soybean Fusarium (Fusarium L) disease on plant yield elements. In the course of the study, during the experiments using seeding preparations and fungicides before planting in the soybean varieties "Oyjamol" and "To'maris-MMAN", 25 plants were selected for each option, and the extent of fusarium infection was observed. Peresin, Tyuterev, Batalova (1991)) was determined by the method.

During our observations, it was found that the number of plants infected with fusarium in the soybean variety "Oyjamol" in the control (untreated) option was 12.7 units on average, while the consumption rate of the option using Oplot seed fertilizer was 0.5 l/t 0.3 units, Maksim XL 035 FS seed fertilizer was 0.3 units it was observed that the rate of consumption was 0.7 units in the 1.75 l/t variant. It was determined that the prevalence of the disease is on average 51% to 1%, while the highest incidence rate was 51% in our control (untreated) option, the lowest rate was 1%. and Maksim XL 035 FS, with a consumption rate of 1.75 l/t, a disease rate of 3% was observed (*Table 1*).

Table 1 :Development and prevalence of Fusarium disease in soybean variety Oyjamol (Karshi, 2022 y.).

№	The name of the fungicide	Active substance	Consumption rate	Number of plants in the experiment	The number of diseased plants, pcs				Disease prevalence, %			
					Rep-1	Rep-2	Rep-3	Average	Rep-1	Rep-2	Rep-3	Average

1	Control (Untreated)	–	0	25	14	11	13	12,7	56	44	52	51
2	Etolon (Daltebu FS 6% s.e.sus)	Tebuconazole 60 g/l	0,4 l/t	25	8	4	4	5,3	32	16	16	21
3			0,5 l/t	25	7	5	5	5,7	28	20	20	23
4			0,6 l/t	25	6	2	4	4,0	24	8	16	16
5	Sunwax	Carboxin 205.9 g/l + Thiram 205.9 g/l	2 l/t	25	7	4	3	4,7	28	16	12	19
6			3 l/t	25	5	3	4	4,0	20	12	16	16
7			4l/t	25	4	3	5	4,0	16	12	20	16
8	Tebikur FS 060	Tebuconazole 60 g/l	0,4 l/t	25	3	5	3	3,7	12	20	12	15
9			0,5 l/t	25	2	4	2	2,7	8	16	8	11
10			0,6 l/t	25	4	3	3	3,3	16	12	12	13
11	Oplot	Difenoconazole 90 g/l + Tebuconazole 45 g/l	0,4 l/t	25	2	2	2	2,0	8	8	8	8
12			0,5 l/t	25	0	1	0	0,3	0	4	0	1
13			0,6 l/t	25	2	2	1	1,7	8	8	4	7
14	Maxim XL 035 FS	Fludioxonil 25 g/l + mefenoxam 10 g/l	1,25 l/t	25	2	3	3	2,7	8	12	12	11
15			1,5 l/t	25	3	2	3	2,7	12	8	12	11
16			1,75 l/t	25	0	1	1	0,7	0	4	4	3
Мин					**0,0**	**1,0**	**0,0**	**0,3**	**0,0**	**4,0**	**0,0**	**1,3**
Max					**14,0**	**11,0**	**13,0**	**12,7**	**56,0**	**44,0**	**52,0**	**50,7**
Average					**4,3**	**3,4**	**3,5**	**3,8**	**17,3**	**13,8**	**14,0**	**15,0**

Another reason for the spread of Fusarium fungal diseases is the warm and humid weather during the flowering, ripening and harvesting periods of the crop, poor quality (infectious) stress, too dense growth of crops and failure to harvest the previous crop on time. The effect of Fusarium disease on productivity in soybean variety "Oyjamol" was determined using the method of Chumakov and Zakharov (1990). When evaluating the yield of healthy plants, the yield of diseased plants and the effect of the disease on the yield, it was found that the lowest values in the control (untreated) variant were the average yield of healthy plants 140.0 g, the average yield of diseased plants was 49.3 g and the effect of the disease on the yield was 36.5% on average. , the best indicators are the consumption rate of the Oplot seed-fertilizing drug used option 0.5 l/t, the yield of healthy plants is 353.7g, the yield of diseased plants is 1.6 g, the effect of the disease on productivity is 0.5%, and the consumption rate of the seed-fertilizing drug Maxim XL 035 FS is 1, In the 75 l/t variant, the yield of healthy plants was 300.0 g, the yield of diseased plants was 3.2 g, and the effect of the disease on yield was 1.1%.

GRAIN YIELD. Productivity is the gross (total) yield obtained as a result of planting and growing a certain agricultural crop in an economy, region or country.

The main elements of soybean yield structure are: the number of stems per unit area, the number of side branches, the number of productive stems, the number of pods and seeds per plant, the weight of 1000 grains and the yield per plant [2]. Fusarium, septoriosis, ascochitosis, cercosporosis and other diseases can cause the spread of soybean diseases and can reduce the soybean yield by 20-40% in years favorable for the development of diseases [8].Diseases occurring in the leaves drastically reduce the assimilation surface of the plants and prevent the realization of the potential productivity of the variety [6].

According to the results of the conducted research, the average productivity of the soybean variety "Oyjamol" selected as an object was determined, on average from 16.0 t/ha to 28.1 t/ha.

In this case, the lowest indicator was found to be an average of 16.0 t/ha in the control (non-medicated) version, while the highest indicator was 28.1 t/ha with a difference of 12.1 compared to the control with a consumption rate of 1.75 l/t of the Maxim XL 035 FS drug. , it was noted that the rate of consumption of the Oplot seeder was 27.0 t/ha with a difference of 11.0 compared to the control of 0.5 l/t.

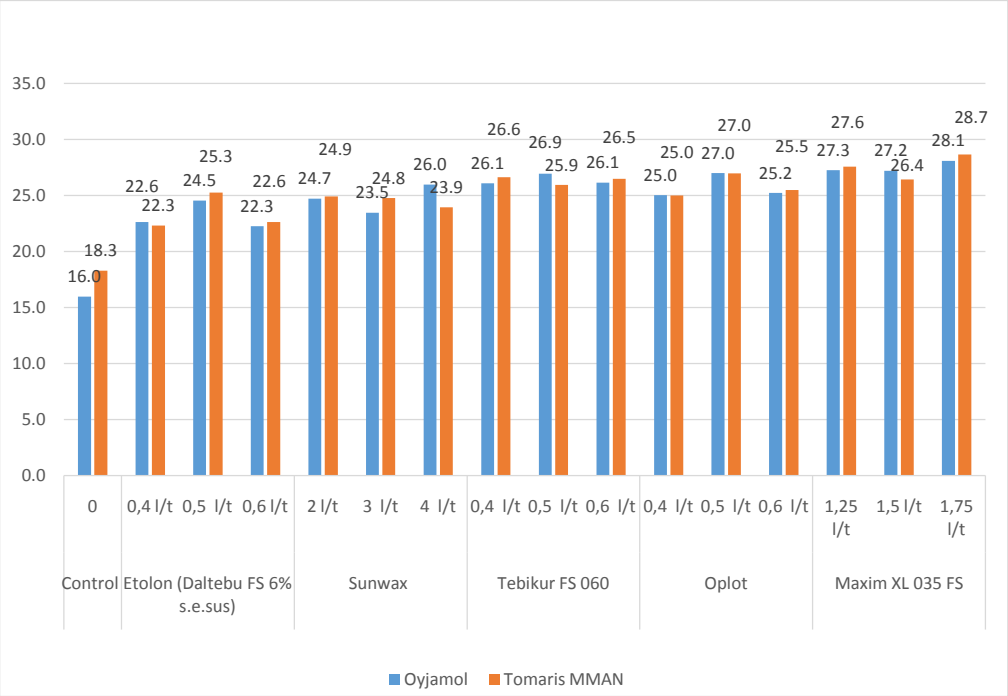

Figure 1. Productivity of soybean varieties Oyjamol and To'maris MMAN (Karshi, 2022).

Etolon (Daltebu FS 6% s.e.sus) consumption rate of the variant used is 22.6 t/ha with a difference of 6.6 compared to the 0.4 l/t control, and 8.5 differences compared to the 0.5 l/t control. with an average of 24.5 t/ha, with a difference of 0.6 l/t compared to the control, 22.3 t/ha with a difference of 6.3. 24.7 ts/ha, 3 l/t with a difference of 7.5 compared to the control, 23.5 ts/ha with a difference of 10.0 compared to the 4 l/t control was found to be 26.0 ts/ha on average. The rate of consumption of Tebikur FS 060 option is 26.1 t/ha with a difference of 10.1 compared to the control of 0.4 l/t, 26.9 t/ha with a difference of 10.9 compared to the control of 0.5 l/t, 0.6 If the average yield was 26.1 t/ha with a difference of 10.1 l/t compared to the control, the consumption rate of the option using Oplot drug was 25.0 t/ha with a difference of 9.0 compared to the control by 0.4 l/t, 0. Average productivity of 25.2 t/ha with a difference of 9.2 against the control of 6 l/t. Consumption rate of the drug Maksim XL 035 FS is 27.3 t/ha with a difference of 11.3 against the control of 1.25 l/t. A yield of 27.2 t/ha was achieved with a difference of 11.2 compared to the control of 1.5 l/t.

When determining the average productivity of the "Tomaris-MMAN" variety, it ranged from 18.3 to 28.7 tons/ha. In this case, the lowest indicator was found to be an average of 18.3 t/ha in the control (non-medicated) option, while the highest indicator was 28.7 t/ha with a difference of 10.4 compared to the control with a consumption rate of 1.75 l/t of the Maxim XL 035 FS preparation. , it was noted that the rate of consumption of the option using the Oplot seeder was 27.0 t/ha on average with a difference of 8.7 compared to the control of 0.5 l/t (Table 2).

Etolon (Daltebu FS 6% s.e.sus) consumption rate of the variant used is 22.3 t/ha with a difference of 4.0 compared to the control of 0.4 l/t, and 7.0 difference compared to the control of 0.5 l/t. with an average of 25.3 t/ha, with a difference of 4.3 compared to 0.6 l/t control, 22.6 t/ha yield was achieved.

Table 2 :Yielding of soybean varieties Oyjamol and To'maris MMAN

(Karshi, 2022 y.).

№	The name of the fungicide	Active substance	Consumption rate	The variety Oyjamol				The variety Tomaris MMAN			
				Rep-1	Rep-2	Rep-3	Average	Rep-1	Rep-2	Rep-3	Average
1	Control (Untreated)	–	0	16,1	14,9	16,9	16,0	17,4	19,3	18,2	18,3
2	Etolon (Daltebu FS 6% s.e.sus)	Tebuconazole 60 g/l	0,4 l/t	23,2	20,7	24,0	22,6	21,9	22,0	23,0	22,3
3			0,5 l/t	24,9	23,8	24,9	24,5	26,1	24,8	24,9	25,3
4			0,6 l/t	20,0	21,8	25,0	22,3	21,9	23,8	22,2	22,6
5	Sunwax	Carboxin 205.9 g/l + Thiram 205.9 g/l	2 l/t	23,8	24,3	26,0	24,7	24,8	25,0	24,9	24,9
6			3 l/t	25,4	22,0	23,0	23,5	26,2	23,1	25,0	24,8
7			4l/t	25,6	25,7	26,6	26,0	24,3	25,3	22,2	23,9
8	Tebikur FS 060	Tebuconazole 60 g/l	0,4 l/t	24,8	26,8	26,7	26,1	26,9	28,7	25,3	27,0
9			0,5 l/t	25,5	25,7	29,6	26,9	27,6	28,0	22,2	25,9
10			0,6 l/t	25,1	27,0	26,3	26,1	25,9	26,4	27,2	26,5
11	Oplot	Difenoconazole 90 g/l + Tebuconazole 45 g/l	0,4 l/t	26,5	24,7	23,9	25,0	26,9	23,2	24,9	25,0
12			0,5 l/t	27,8	27,7	25,5	27,0	28,4	27,5	24,0	26,6
13			0,6 l/t	26,9	23,8	25,0	25,2	26,8	25,8	23,9	25,5
14	Maxim XL 035 FS	Fludioxonil 25 g/l + mefenoxam 10 g/l	1,25 l/t	27,8	25,8	28,2	27,3	28,9	28,7	25,1	27,6
15			1,5 l/t	27,6	27,7	29,0	28,1	28,6	28,7	28,7	28,7
16			1,75 l/t	28,5	26,5	26,6	27,2	27,6	26,3	25,4	26,4
Мин				**16,1**	**14,9**	**16,9**	**16,0**	**17,4**	**19,3**	**18,2**	**18,3**
Max				**28,5**	**27,7**	**29,6**	**28,1**	**28,9**	**28,7**	**28,7**	**28,7**
Average				**25,0**	**24,3**	**25,5**	**24,9**	**25,6**	**25,4**	**24,2**	**25,1**

The consumption rate of the option using Sunvax is 24.9 t/ha with a difference of 6.6 compared to the control 2 l/t, 24.8 t/ha with a difference of 6.5 compared to the 3 l/t control, compared to the 4 l/t control It was determined that the average is 23.9 ts/ha with a difference of 5.6 t/ha. The rate of consumption of Tebikur FS 060 variant is 26.6 t/ha with a difference of 8.3 compared to the control of 0.4 l/t, 25.9 t/ha with a difference of 7.6 compared to the control of 0.5 l/t, 0.6 If the average yield was 26.5 t/ha with a difference of 8.2 l/t compared to the control, the consumption rate of the option using the drug Oplot was 0.4 l/t compared to the control and an average of 25.0 t/ha with a difference of 6.7, 0. Average productivity of 25.5 t/ha was recorded with a difference of 7.2 l/t compared to the control.

Consumption rate of Maxim XL 035 FS preparation was 1.25 l/t compared to the control with an average of 27.6 t/ha with a difference of 9.3, and 1.5 l/t with a difference of 8.1 compared to the control 26.4 t/ha yield was achieved (Figure 1).

THOUSAND GRAIN WEIGHT. The number of pods and grains produced in plants during the critical period of flowering, fruiting and growth serves as a prognostic indicator of potential seed yield. The maximum weight of 1000 grains depends on the variety. Grain weight depends on the number of formed pods and grains, their location on the plant, as well as grain filling. The number of grains and 1000-grain weight of pods on side stems are relatively lower than those on the main stem.

When studying the effects of different degrees of damage of soybean plants by fusarium disease on the yield elements, it was observed that the yield was significantly reduced with

moderate (2 points) and strong (3 points) damage. The greatest effect was recorded on the number of pods and seeds, the weight of seeds per plant and the weight of 1000 grains [4].

Bacteriosis and Fusarium are considered common and damaging diseases of soybeans, which significantly reduce seed germination, damage seedlings, and negatively affect all parameters of soybean productivity [1].

The most important components of soybean are: the number of pods per plant, the number of seeds per plant and the weight of 1000 seeds. These, in turn, are determined by the number of branches, productive stems and plant height [13].

When determining the weight of 1000 grains of "Oyjamol" soybean variety, it was found that the average is from 102.3 g to 154.3 g. In this case, the lowest indicator was 102.3 g on average in the control (non-medicated) version, the highest indicator was 154.3 g on average, with a difference of 0.5 l/t compared to the control with a difference of 0.5 l/t compared to the control. Consumption rate of 035 FS preparation was 152.3 g on average with a difference of 50.0 compared to the control of 1.75 l/t.

Etolon (Daltebu FS 6% s.e.sus) consumption rate of the variant used was 110.7g with a difference of 8.4 compared to the control of 0.4 l/t, and 108 with a difference of 5.7 compared to the control of 0.5 l/t. 0.0 g, 0.6 l/t was 121.0 g with a difference of 18.7 compared to the control, while the consumption rate of the variant using Sunvax drug was 20.7 with a difference of 20.7 compared to the control, on average 123.0 g, 3 l/ t was found to be 113.0 g with a difference of 10.7 compared to the control, 4 l/t was found to be 119.7 g with a difference of 17.4 compared to the control.

The consumption rate of Tebikur FS 060 variant is 129.0 g with a difference of 26.7 compared to the control of 0.4 l/t, 128.3 g with a difference of 26.0 compared to the control of 0.5 l/t, 128.3 g compared to the control of 0.6 l/t 120.7 g was determined on average with a difference of 18.4, the consumption rate of the option using the drug Oplot was 140.0 g with a difference of 37.7 compared to the control 0.4 l/t, 45.0 compared to the control 0.6 l/t with a difference, an average of 147.3 g was recorded. Consumption rate of Maxim XL 035 FS preparation was 150.0 g with 47.7 difference compared to 1.25 l/t control, 145.7 g with 43.4 difference compared to 1.5 l/t control.

When determining the weight of 1000 grains of "To'maris-MMAN" variety of soybean, it was found that the average is from 101.7 to 151.7 g. In this case, the lowest indicator was 101.7 g with a difference of -6.3, the consumption rate of the option using the drug Sunvax was 4 l/t compared to the control, and the highest indicator was the consumption rate of the option using the Oplot fertilizing agent 0.5 l/t compared to the control. 149.0 g with a difference of 41.3, consumption rate of Maxim XL 035 FS drug was 151.7 g with a difference of 43.7 compared to the control of 1.75 l/t.

Table 3 : 1000 grain weight of Oyjamol and To'maris MMAN varieties of soybeans (Karshi, 2022 y.).

№	The name of the fungicide	Active substance	Consumption rate	The variety Oyjamol				The variety Tomaris MMAN			
				Rep-1	Rep-2	Rep-3	Average	Rep-1	Rep-2	Rep-3	Average
1	Control (Untreated)	–	0	107	100	100	102,3	110	114	100	108,0
2	Etolon (Daltebu FS 6% s.e.sus)	Tebuconazole 60 g/l	0,4 l/t	110	102	120	110,7	115	100	112	109,0
3			0,5 l/t	100	120	104	108,0	100	112	105	105,7
4			0,6 l/t	120	115	128	121,0	105	120	114	113,0
5	Sunwax	Carboxin 205.9 g/l + Thiram 205.9 g/l	2 l/t	112	125	132	123,0	118	130	120	122,7
6			3 l/t	109	100	130	113,0	125	114	125	121,3

7			4l/t	125	114	120	119,7	100	100	105	101,7
8	Tebikur FS 060	Tebuconazole 60 g/l	0,4 l/t	120	135	132	129,0	130	135	130	131,7
9			0,5 l/t	125	120	140	128,3	125	130	120	125,0
10			0,6 l/t	132	125	105	120,7	134	120	125	126,3
11	Oplot	Difenoconazole 90 g/l + Tebuconazole 45 g/l	0,4 l/t	135	145	140	140,0	140	145	135	140,0
12			0,5 l/t	155	155	153	154,3	150	150	148	149,3
13			0,6 l/t	142	150	150	147,3	145	125	155	141,7
14	Maxim XL 035 FS	Fludioxonil 25 g/l + mefenoxam 10 g/l	1,25 l/t	150	150	150	150,0	135	130	140	135,0
15			1,5 l/t	150	135	152	145,7	148	142	135	141,7
16			1,75 l/t	152	150	155	152,3	153	152	150	151,7
Мин				**100,0**	**100,0**	**100,0**	**102,3**	**100,0**	**100,0**	**100,0**	**101,7**
Max				**155,0**	**155,0**	**155,0**	**154,3**	**153,0**	**152,0**	**155,0**	**151,7**
Average				**127,8**	**127,6**	**131,9**	**129,1**	**127,1**	**126,2**	**126,2**	**126,5**

The average weight of 1000 grains in the control variant was found to be 108.0 g. Consumption rate of the variant using Etolon (Daltebu FS 6% s.e.sus) is 109.0 g with a difference of 1.0 compared to the control of 0.4 l/t, and -2.3 compared to the control of 0.5 l/t. average was 105.7 g, 0.6 l/t with a difference of 5.0 compared to the control and 113.0 g, while the consumption rate of the option using Sunvax preparation was 2 l/t with a difference of 14.7 compared to the control on average 122.7 g, 3 l/t was determined to be 121.3 g with a difference of 13.3 compared to the control.

The consumption rate of the Tebikur FS 060 option is 131.7 g with a difference of 23.7 compared to the control of 0.4 l/t, 125.0 g with a difference of 17.0 compared to the control of 0.5 l/t, 125.0 g compared to the control of 0.6 l/t 126.3 g on average was determined with a difference of 18.3, the consumption rate of the option using the drug Oplot was 0.4 l/t compared to the control with an average of 140.0 g with a difference of 32.0, 33.7 compared to the 0.6 l/t control with a difference of 141.7 g on average.

The rate of consumption of the drug Maxim XL 035 FS was found to be 135.0 g with a difference of 27.0 compared to the control of 1.25 l/t, and 141.7 g with a difference of 33.7 compared to the control of 1.5 l/t (Table 3).

CONCLUSIONS: The rate of consumption of the option using the drug Oplot is 0.4 l/t compared to the control with an average of 25.0 t/ha with a difference of 6.7, and an average yield of 25.5 t/ha with a difference of 7.2 compared to the control of 0.6 l/t was recorded. Consumption rate of Maxim XL 035 FS drug was 1.25 l/t compared to the control with an average of 27.6 t/ha with a difference of 9.3, and 1.5 l/t with a difference of 8.1 compared to the control 26.4 t/ha yield was achieved.

The rate of consumption of Tebikur FS 060 option for 1000 grain weight is 131.7 g with a difference of 23.7 compared to the control of 0.4 l/t, 125.0 g with a difference of 17.0 compared to the control of 0.5 l/t, 0, 6 l/t was determined on average 126.3 g with a difference of 18.3 compared to the control, the consumption rate of the option using Oplot drug was 0.4 l/t with a difference of 32.0 compared to the control on average 140.0 g, 0.6 l/t 141.7 g was recorded on average with a difference of 33.7 compared to the control.

In the fight against fungal diseases stored in soybean seeds, it is recommended to use Oplot at the rate of 0.5 l/t, Maxim XL 035 FS at 1.75 l/t, and Tebikur FS 060 at the rate of 0.5 l/t.

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