THE EFFECT OF THE IMMUNOSTIMULANT "FITOVAK" ON THE GERMINATION OF "AVMU" MUNG BEAN VARIETIES

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Abstract: In this article, the germination indicators of 15 different mung bean varieties of “AVMU” were studied by treating the seeds with the immunostimulator “Fitovak”, and also compared with the control variants. As a result, among the varieties studied, the most positive result was observed in the AVMU 2003 variety, and the lowest result was observed in the AVMU 1678 variety. In addition, when these varieties were compared with the control variants, it was found that the germination percentage of the AVMU 2003 variety was 25% higher than the control.

Keywords: "AVMU" mung bean varieties, germination index, "Fitovak", immunostimulant.

Annotation. Germination is one of the main quality indicators of seeds, which is considered the ability of plants to germinate. In laboratory conditions, seed germination is defined as the rate at which seeds grown under favorable conditions germinate at a high percentage.

There are several methods for increasing fertility, including pre-sowing treatment of plant seeds with fungicides, bactericides, stimulants, biostimulants, and immunostimulants.

The germination of seeds of agricultural plants depends mainly on the biological and physiological processes occurring in the body of these plants, that is, as a result of these processes, the growth and development of young seedlings can be accelerated or slowed down.

To date, the agricultural sector in our Republic is further developing, and measures have been taken to properly organize seed production in order to obtain

high-quality crops, develop technologies for growing seeds of new plant specimens imported from foreign countries, and to culturalize them.

Before sowing seeds of agricultural crops, various types of chemical drugs, growth regulators and physiologically active substances, immunostimulants that increase resistance to various stressors encountered in the environment are used. It is noted that high-quality yields can be achieved by spraying the vegetative and generative organs of crops during different periods of vegetation.

We conducted field studies on mung bean crops using the immunostimulant "Fitovak". The drug "Fitovak" is environmentally friendly and harmless, and can be used even in areas where biolaboratory products have been used. This drug has rehabilitative, repellent, antidote and synergistic properties, and when used in combination with various types of biocides and mineral fertilizers, it helps to increase their effectiveness, absorption into the soil, and also their duration.

Due to the increased activity of enzymes under the influence of growth-stimulating biologically active substances, the rate of decomposition of organic matter in the seed increases, and the growth of roots and primary leaves from the bud decreases faster than in the control variant.

In a study conducted in 2024, the immunostimulant "Fitovak" was tested in equal doses on 15 different varieties of "AVMU". In order to determine the extent to which this immunostimulant affects the physiological processes of plant growth, a study was conducted in the experimental field, comparing it with the standard and control variants.

In the first part of the study, seeds taken as a standard were treated with the immunostimulant "Fitovak" at a rate of 200 ml/t, and the germination indicators of the control and treated seeds were determined. In this case, all varieties of "AVMU" in the standard and control variants were given the same amount of moisture, that is, irrigation was carried out.

Research was conducted in 2024 in field conditions with moderate salinity. Seeds were sown on the sixth of July, and observations were carried out on 11.07. As a result, different indicators were observed in each option (Table 1.1).

Table 1.1

№	Mash varieties	Control		Stimulator	
		Number of sprouts, pcs.			
		11.07.2024 y	Sleeplessness %	11.07.2024 y	Sleeplessness %
1	AVMU 1676	59	80.0	45	78.2
2	AVMU 1677	65	88.0	79	90.0
3	AVMU 1678	46	80.9	35	46.1
4	AVMU 1679	79	88.4	39	75.0
5	AVMU 1680	67	80.0	43	70.0
6	AVMU 1681	40	73.33	73	82.6
7	AVMU 1682	41	65.2	48	80.0
8	AVMU 1683	11	41.66	19	54.5
9	AVMU 1684	17	50	21	63.6
10	AVMU 1685	20	61.53	27	63.6
11	AVMU 2001	41	91.66	29	60.0
12	AVMU 2002	21	66.66	25	58.33
13	AVMU 2003	25	66.66	44	91.66
14	AVMU 2004	14	66.6	20	50.0
15	AVMU 2005	14	66.6	17	50.0

Fertility indicators of "AVMU" mung bean varieties

According to the results obtained, a total of 560 plants germinated in the control variants, and 564 in the variants treated with the stimulant. It can be seen that among the control variants, the highest percentage was observed in the AVMU 2001 variety (91.66%), and the lowest was observed in the AVMU 1683 variety (41.66%).

Data from field research indicate that field productivity indicators may vary depending on the time of year, air temperature, and soil moisture.

Despite the equal amount of the immunostimulant "Fitovak" (200 ml / l), all varieties of "AVMU" did not show the same percentage indicators. However, the fact that the germination in the variants treated with this drug was higher than in the control indicates that the physiological processes were accelerated and positive indicators were obtained as a result of the coordination and proper control of the internal endogenous and externally influenced exogenous hormones contained in the mung beans.

The positive effect of the immunostimulant "Fitovak" on the germination of mung beans is associated with the fact that upon contact with its shell, the processes of development in it, i.e. swelling, cracking, rooting, and sprouting of seedlings, begin earlier than in the control. At the same time, since the substances contained in the immunostimulant "Fitovak" regulate the work of phytohormones, an increase in osmotic pressure in the seeds, expansion of the cell shell, swelling, cracking, rooting, and acceleration of early sprouting processes are observed.

In conclusion, it was scientifically established in the research that when mung beans were treated with the universal immunostimulant "Fitovak" at a rate of 200 ml/l, depending on soil temperature, the germination rate was higher than the control option and germination occurred 3 days earlier.

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