STUDYING SOYBEAN SEEDS GROWTH IN THE LABORATORY

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Abstract: *This article provides information on determining the germination of soybean varieties in laboratory conditions - this is a way to determine the readiness of seeds for planting, how quickly and efficiently they will grow.*

Keywords: *Soybean, variety, seed, Nafis st, Dostlik, Selekta-302, laboratory, germination.*

Soybean production and trade in the world market are of great economic importance. Soybeans are widely used in the food industry, animal feed production, biodiesel production, and other industries. Soybeans are high-yielding and more profitable than other crops that are important for agriculture. In particular, soybeans are a leading source of high-protein feed and are used to feed animals for meat and dairy production. Soybeans have also become an important part of economic development in some regions, such as Brazil and the United States.

To determine the germination of soybean seeds in laboratory conditions, 50 seeds of the Nafis st, Do'stlik, Selekta-302 soybean varieties were selected. The quality of the seeds was checked, and on March 15, containers were selected for sowing in a thermostat in laboratory conditions. Filter paper was placed inside the containers and moistened with ordinary distilled water, and the selected seeds were picked from above. They were placed in a thermostat at a temperature of 28oC for germination. After 2 days from the day the seeds were sown, the containers were moistened with water. On March 17, water was poured into them again at a room temperature of 28oC. When observing the germination of the seeds, we observed that out of 50 seeds, 28 seeds of Nafis (st), 30 seeds of Selekta-302, and 26 seeds of Do'stlik germinated. On this day, only the main root sprouted from the seeds, which were 1 sm long. No lateral roots were formed. We continued to observe again.

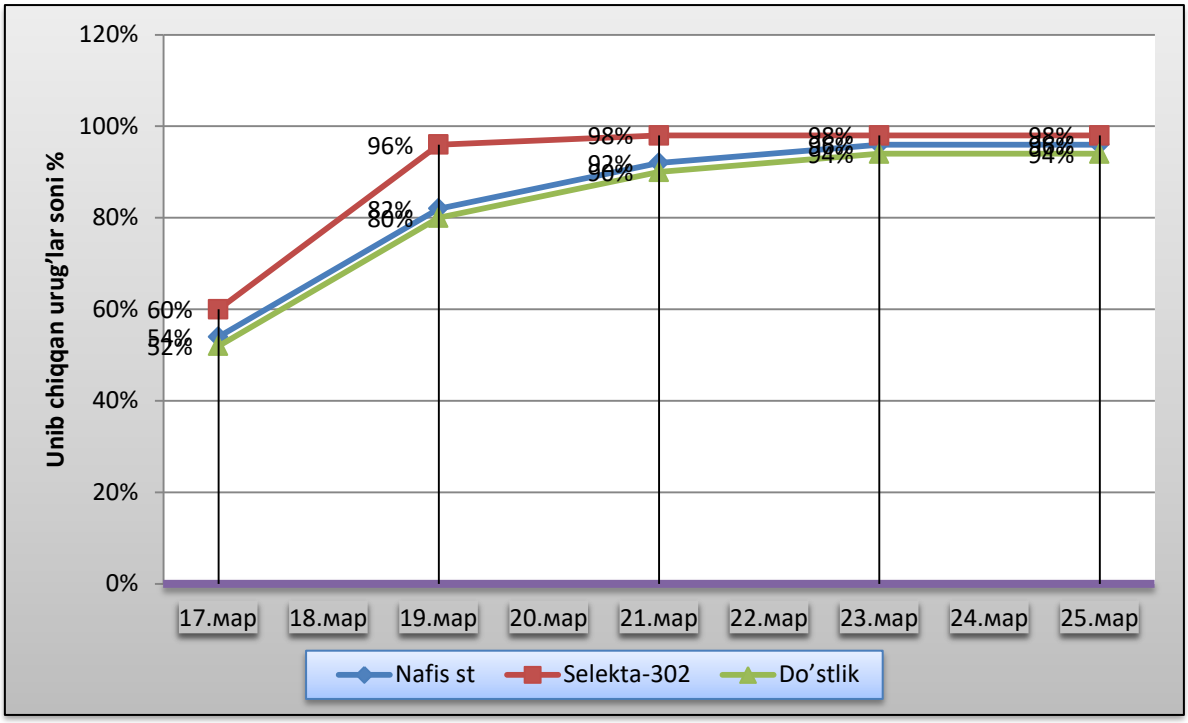

Figure 1. Germination of soybean seeds in the laboratory

The seeds were moistened with water every 2 days, and on March 19, we observed that the germination of the seeds was 43 for the Nafis st variety, 48 for the Selekta-302 variety, and 41 for the Dostlik variety. The main root length of the Nafis st variety was 12 cm, and the number of lateral roots was 29, the main root length of the Selekta-302 variety was 15 cm, and the number of lateral roots was 44, and the main root length of the Dostlik variety was 11 cm, and the number of lateral roots was 25. The table below shows how many of the 50 seeds of soybean varieties germinated.

From Figure 1., it can be seen that out of 50 seeds of the Nafis st variety, 48 seeds of the Selekta-302 variety germinated, 49 seeds of the Dostlik variety, and 47 seeds of the Dostlik variety, 2 seeds of the Nafis st variety, 1 seed of the Selekta-302 variety, and 3 seeds of the Dostlik variety did not germinate. It is clear from this that temperature and humidity are necessary factors for the germination of soybean seeds. If the humidity and temperature are sufficient during the germination of seeds, their germination will be high.

Figure 2. Germination of soybean seeds in the laboratory

After determining the germination of soybean seeds in the laboratory, we also studied the germination of these varieties in the field. Determining the germination of soybean varieties in the field is the process of assessing how soybean seeds grow and develop in the field. To determine germination in the field, seeds are planted in the field and then their growth and development are monitored. This method shows how quickly and efficiently soybean seeds grow in the field.

Figure 3. Germination of soybean seeds in the laboratory

The seeds were planted in a designated area and the growth process was monitored. To determine the germination of the planted seeds, a few days after planting the growth rate and condition of the plants were assessed during the experiment. The percentage of sprouted seeds was calculated and the germination efficiency of the seeds was checked.

Conclusion. This experiment will help to determine the genetic characteristics of soybean seeds and how they adapt to the ecosystem, as well as allow for increased yields and crop improvement. Studying the germination process in laboratory conditions plays an important role in improving the efficiency of soybean plants.

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