



THE EFFECT OF DEFOLIATION ON THE "USTOZ MM-60" VARIETY OF SOYBEEN PLANTED AS A MAIN CROP.

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Аннотация

The article is devoted to the first defoliation and its effects on soybean variety "Ustoz MM-60" planted as a main crop in the conditions of meadow-gray soils of Andijan region. In addition, the result of the application of UzDEF defoliant at different rates and the application of 6 liters per hectare showed the highest result for soybean leaf shedding.

Аннотация

Статья посвящена первой дефолиации и ее влиянию на сорт сои Устоз ММ-60, возделываемый в качестве основной культуры в условиях лугово-сероземных почв Андижанской области. Кроме того, результаты применения дефолианта УзДЕФ в разных дозах показали самый высокий результат по опадению листьев сои при использовании 6 л на гектар.

Over the past 20 years. These changes are related to the increased demand for soybeans, which make up 60-70 percent of animal feed. It is known that until 1985, the United States was the leader in the production and export of soybeans. The combined soybean production of Brazil and Argentina now exceeds that of the United States. The growing economies of China, India and other developing countries have dramatically increased the demand for livestock products, which in turn has increased the demand for soybean meal. In addition, soybeans are playing an important role in the emerging biofuels sector. [1].

In 2000, 46% of the total soybean demand (165 million tons) was used, 90% of which was used for non-food products mainly for animal feed and biodiesel production in recent years (last 20 years). During these years, the European Union (EU) was the leading importer of soy products. (USDA, 2005). [2]. However, in 2002, China's imports surpassed those of the EU, making China the leading global importer of soybeans. Soybean production is determined by imports from China. The agrotechnologies of soybean cultivation in different soil and climate conditions have not yet been fully studied in our country. In particular, insufficient experiments have been conducted on new local high-yielding varieties. To obtain a high yield from soybeans, it is necessary not only to use high-quality seeds, traditional agrotechnologies, but also to increase productivity using modern specialized technologies. One of the intensive technologies of soybean cultivation can increase productivity by 5-8 t/h due to acceleration of early plant vegetation, i.e., quality harvesting with the help of defoliants, taking into account the sudden drop in temperature.

Serious attention is paid to desiccation measures in order to harvest the soybean crop grown in the USA, China, Argentina, Ukraine and a number of regions of Russia without losses

and in good quality. Studies have shown that soybean seed yield decreased when Reglon Super and Tornado were applied at 40-45% moisture. Tornado 2.0-2.5 l/ha, Reglon super 1.5-2 l/ha when the soybean seed moisture content is 50-55% and 60-65%, and the yield is the same as the control and other seed moisture content Between 50-70% of the experimental variants, the protein and oil content remained unchanged, but did not differ from the control values. [4].

In the conditions of the meadow gray soils of the Andijan region, UzDEF defoliant standards were used as a research object in the variety "Ustoz MM-60", which is a medium-sized variety of the new local fertility varieties of soybean, field and laboratory method. Methods developed by UzPITI for conducting experiments "Metody polevykh, laboratornykh i vegetatsionnykh issledovaniy" (1972), "Methods of conducting field experiments" (2007), methodological guidelines for testing defoliants" (2004), phenological observations "Metodika Gosudarstvennogo sortoispytaniya selskohozyaystvennykh kultur", "Metodicheskie rekomendatsii po primeneniyu desikantov v posevax soi" (2017), "Metody issledovaniy v polevykh opytakh s soey" (V.T. Sinegovskaya., E.T. Naumchenko). (2016) manuals and statistical analysis of results B.A. Dospekhov (1985) methods were used.

Scientific research was carried out in 2019-2021 at the experimental farm of the Andijan Institute of Agriculture and Agro-Technology of the Andijan region. The soils of the experimental field are grassy gray soils and have been irrigated since ancient times. The depth of underground water is 1.2-1.4 m. The experiment consisted of 6 options, 4 repetitions, and was carried out in small areas. The area of each option is 120 m² (length 50 m, width - 2.4 m). The estimated number of plants is 25 per plot.

Soybean variety "Ustoz MM-60" was planted in two different ways: 250-300 thousand and 350-400 thousand pieces per hectare. Sowing rate is 700 - 800 m³/ha. The variety "Ustoz MM-60" was planted on April 14. 25 kg/ha of nitrogen along with planting, two cultivations during the growing season and 30-35 kg/ha of nitrogen fertilizer were given in each cultivation. Phosphorus 100 kg/ha and potassium 100 kg/ha were fed. In the experiment, defoliants were applied when the pods were 50-60% ripe. 4 of UzDEF defoliant per 50 l of water for each coat; 5; and 6 l/ha norms were applied. The prepared solution was sprayed by hand using a special sprayer in the cool of the evening.

1 - Table.

Соянинг "Устоз MM-60" навида дефолиация ўтказилгандан кейин барг тўкилиши, 2021 йил.

| № | Вариант-лар | Дефолиациядан 6 кундан кейин, % | | | | Дефолиациядан 12 кундан кейин, % | | | |
|---|-------------|---------------------------------|------------------|--------------|-------------------|----------------------------------|------------------|--------------|-------------------|
| | | Яшил барглари | Қуриган барглари | Ярим қуриган | Тўкилган барглари | Яшил барглари | Қуриган Барглари | Ярим қуриган | Тўкилган барглари |
| Назарий кўчат қалинлиги 250-300 минг туп/га | | | | | | | | | |
| 1 | Назорат | 57,0 | 5,0 | 10,0 | 28,0 | 34,2 | 6,0 | 22,8 | 37,0 |
| 2 | УзДЕФ 4,0 | 24,0 | 9,0 | 14,0 | 53,0 | 6,7 | 2,9 | 14,4 | 76,0 |

| | | | | | | | | | |
|---|----------------------|------|------|------|------|------|------|------|------|
| | л/га | | | | | | | | |
| 3 | УзДЕФ 5,0 л/га | 14,5 | 19,0 | 13,0 | 53,5 | 1,2 | 1,7 | 11,6 | 85,5 |
| 4 | УзДЕФ 6,0 л/га | 10,6 | 22,0 | 15,0 | 52,4 | 0,0 | 6,4 | 4,2 | 89,4 |
| Назарий кўчат қалинлиги 350-400 минг туп/га | | | | | | | | | |
| 5 | Назора т | 46,7 | 5,4 | 18,0 | 30,0 | 28,0 | 10,8 | 18,7 | 42,5 |
| 6 | УзДЕФ 4,0 л/га | 18,7 | 9,6 | 15,0 | 56,7 | 5,2 | 2,2 | 11,2 | 81,3 |
| 7 | УзДЕФ 5,0 л/га | 8,5 | 20,3 | 13,9 | 57,2 | 0,7 | 1,0 | 6,8 | 91,5 |
| 8 | УзДЕФ 6,0 л/га | 5,6 | 23,5 | 14,8 | 56,1 | 0,6 | 2,8 | 2,2 | 94,4 |

According to the results of the research, when the theoretical seedling thickness is 250-300 thousand bushes, based on the average data, in the control option (without defoliant), natural shedding of leaves after 6 days of defoliation was 28.0%, and green leaves were 57.0%. Three different 4.0 with UzDEF defoliant; In observations 6 days after defoliation at the rate of 5.0 and 6.0 l/ha, relatively dry leaves were 9.0-19.0-22.0%, semi-dry leaves were 14.0-13.0-15.0%, shed leaves were 53.0-53.5-52.4 percent,

When the theoretical planting thickness is 350-400 thousand bushes, and in the options, based on average data, in the control (without defoliant) option, 6 days after defoliation, natural shedding of leaves was 30.0%, and green leaves were 46.7%. Three different 4.0 with UzDEF defoliant; The results of 6 days after defoliation at the rate of 5.0 and 6.0 l/ha are as follows: dry leaves 9.6-20.3-23.5%, semi-dry leaves 15.0-13.9-14.8%, shed it was found that the leaves were 56.7-57.2-56.1 percent.

12 days after defoliation, when the theoretical seedling thickness of 250-300 thousand bushes was planted and cared for in the control option, natural shedding of leaves was 37.0%, and green leaves were 34.2%, three types with UzDEF defoliant 4.0; When defoliation was carried out at rates of 5.0 and 6.0 l/ha, proportionally dried leaves were 2.9-1.7-6.4%, semi-dried leaves were 14.4-11.6-4.2%42, shed leaves were 76 It was 0-85.5-89.4 percent. When the theoretical seedling thickness is 350-400 thousand bushes, in the options, based on the average data, in the control (without defoliant) option, 12 days after defoliation, natural shedding of leaves was 42.5%, and green leaves were 28.0%. Three different 4.0 with UzDEF defoliant; When defoliation is carried out at the rate of 5.0 and 6.0 l/ha, dry leaves are 2.2-1.0-2.8%, semi-dry leaves are 11.2-6.8-2.2%, and shed leaves are 81.3- It was found that it was 91.5-94.4 percent.

Summary. As a result of the research, a high level of shedding of leaves was found in the case of UzDEF defoliant 6.0 l/ha, when the theoretical seedling thickness of 350-300 thousand bushes was maintained in the "Ustoz MM-60" variety, which was planted as the main soybean crop in the conditions of the meadow gray soils of the Andijan region. It was found that in the variant where UzDEF defoliant standard was applied to 5.0 l/ha, the shedding of leaves was higher compared to other variants.

Based on the conducted researches, taking into account the late ripening of soybeans together with the fertility created in local conditions, taking into account the biological condition of soybeans in the "Ustoz MM-60" variety, in exchange for the application of 5.0-6.0 l/ha UzDEF defoliant, it is possible to apply UzDEF defoliant in earlier periods. it allows to collect a quality crop without leaving.

References:

1. Ash, M., Livezey, J. and Dohlman, E. (2006) Soybean backgrounder. ERS report # OCS-2006-01, USDA, Washington, DC, USA.
2. USDA (2005) Agricultural Trade. USDA Baseline Projections, February 2005, USDA, Washington, DC, USA.
3. V.T. Sinegovskaya., E.T. Naumchenko., G.P. Kobozeva "Metody issledovaniy v polevykh opytax s soey. 2016.
4. Yatchuk P.R. Vliyanie desikantsov "Reglon super" and "Tornado" na urazaynost i kachestvo zerno soi //Zernobobovy i krupyanye kultury №1(25), 2018 p.