"INFLUENCE OF DEFOLIATION RATES AND TIMING ON PROTEIN AND OIL CONTENT OF SOYBEAN GRAIN"

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Abstract: This article presents the results of scientific research on the influence of defoliation rates and timing of application on the protein-oil content of early and mid-early soybean varieties planted as a re-crop.

Key words: soybean, defoliation, protein, oil, Oyjamol variety, Tumaris MAN 60 variety, bean ripeness terms.

It is known that soybean is a valuable plant and is of great importance in the food industry, animal husbandry, and especially in agriculture in improving soil fertility. The soybean plant is the world's leading producer of protein. Today it is widely used in the production of artificial meat.

Paying attention to soybeans in the republic, it is necessary to pay attention to the sowing of its grain, hay and vegetable varieties. The main purpose of soybeans grown for grain is to produce vegetable oil, and the remaining secondary product can be used as feed for poultry and livestock.

In the development of soybean production, when growing high-quality grain crops from soybeans, the correct selection of planted varieties is one of the important conditions. Therefore, one of the chains of application of the most advanced agricultural technologies for soybean cultivation is the use of well-adapted, zoned and promising varieties, taking into account the characteristics of each soil and climatic conditions.

Based on this, in scientific research on the cultivation of soybeans, the scientist pays special attention to the study of the chemical composition of soybean grains.

The chemical composition of soybean varies depending on its varietal characteristics, soil and climatic conditions, applied agrotechnical measures, including sowing rates, plant nutrition measures and other factors.

Russian scientists Baranov V.F. Kochegura A.V., [1] found that soybean seed sowing parameters and seedling thickness affect the chemical composition of the grain. It has been proven that the amount of protein in the grain increases and the amount of oil decreases with increasing thickness of shoots per hectare in soybeans.

Mannopova M. [2] in her studies conducted in the soil and climatic conditions of the Andijan region, proved that the type of soil affects the amount of oil in soybeans. Compared with meadow soils, it was found that on light gray soils, the oil content of soybean grains increased by 2.3-2.5%.

Therefore, it is important to apply the necessary agrotechnical measures to obtain a high yield of soybean grain and early maturity of soybean to achieve high oil content.

Based on the foregoing , studies were carried out to study the effect of defoliation rates and terms on the protein and oil content in the grain of soybean cultivars.

In studies during the ripening of soybean pods of the Oyjamol variety by 50-55%, an increase in the amount of protein in the grain was noted as the defoliant rate increased in the variants where the defoliant UzD E F was used at a dose of 3, 4, 5 l/ha, and in the variant with the use of the defoliant UzDEF at the rate of 3 l/ha, the protein content was 38.2 %, when using the defoliant UzDEF at the rate of 4 l/ha, it was 38.4 %, when using the defoliant UzDEF at a rate of 5 l/ha - 38, 6% was higher up to 0.3% (Table 1).

With the use of defoliants in the ripening of beans 60-65% of soybeans, the amount of protein in the grain increased to 38.1-39.3% in the variants with the use of the UzDEF defoliant. It is noted that the protein content is higher by 0.6-0.8% When the beans ripen, 50-55% compared to the defoliant variants.

Table 1

Influence of norms and terms of defoliation on the content of protein and oil in soybean grain.

Var no	Variety	Defoliant rate l/ha	Terms of use of the defoliant	Protein content %	Oil content %
1.	Oyjamol	Control	When the beans ripen, 50–55%.	37.3	22.7
2.		UzDEF 3 l/ha		38.2	22.9
3.		UzDEF 4 l/ha		38.4	22.6
4.		UzDEF 5 l/ha		38.6	22.5
5.		Control	When beans ripen 60-65%	38.1	23.3
6.		UzDEF 3 l/ha		38.8	23.5
7.		UzDEF 4 l/ha		39.2	23.2
8.		UzDEF 5 l/ha		39.3	23.0
9.	Tumaris MAN -60	Control	When the beans ripen, 50–55%.	38.6	23.3
10.		UzDEF 3 l/ha		39.0	23.2
11.		UzDEF 4 l/ha		39.3	23.3
12.		UzDEF 5 l/ha		39.7	23.1
13.		Control	When beans ripen 60-65%	39.5	24.0
14.		UzDEF 3 l/ha		39.7	24.2
15.		UzDEF 4 l/ha		40.1	24.3
16.		UzDEF 5 l/ha		40.4	24.2

The reason for the increase in the amount of protein in soybean grains is the decrease in plant moisture in defoliant varieties and the creation of favorable conditions for the efficient use of sunlight during the ripening of the pods.

When analyzing the amount of oil in the chemical composition of soybeans, it was found that with an increase in the rate of defoliation, the amount of protein and oil in soybeans was inversely proportional to each other, and the amount of oil decreased slightly in high protein variants.

For example, in the variant with the use of the defoliant UzDEF at a rate of 3 l/ha, the amount of oil was 22.9 % and increased by 0.2% compared to the non-defoliant control variant, when the defoliant UzDEF was applied at a rate of 4 l/ha, it increased by 22 ,6 %, when using the defoliant UzDEF at the rate of 5, it was found that when used at the rate of l/ha, it is 22.5% , and the amount of oil is reduced by 0.1-0.2% compared to the control variant .

So, summarizing the effect of defoliation rates and timing of application on the amount of protein and oil in the grain of different soybean varieties, we can say that a decrease in moisture during the ripening period of soybean grain has a positive effect on increasing the protein content in the plant, causing a deficit in the absorption of moisture by the plant and a slight decrease in the amount of oil.

REFERENCES

1. Баранов В.Ф., Кочегура А.В. Соя биология и технология возделывания.– Краснодар.: Советская Кубань, 2005. С. 433.
2. Маннопова М. Оксилга сероб, сувга кам талаб. ЎзПИТИ Фарғона филиали тўпл. Фарғона 2008, Б. 89.
3. Мелибоев Б., Каландаров А., Умарова Н.С.-Сояни такрорий экишда тупсонининг хосилдорликка таъсири,- Т.Рес. илм.-амал.анжум., 2 кисм, 2010, Б. 236-238.
4. Оборская, Ю.В. Исследования механического повреждения семян при уборке и подработке сои //Биологические и агротехнические исследования сельскохозяйственному производству Дальнего Востока. Сб. науч.- трудов. – Благовещенск: ГНУ ВНИИ сои, 2009. – С. 6-10.