



THE INFLUENCE OF DIFFERENT GROWTH STIMULANTS IN DIFFERENT NORMS ON PHOTOSYNTHETIC PARAMETERS OF WINTER WHEAT.

Baxramova Nilufar Nazarovna¹

Khojamkulova Yulduzoy Jahonkulovna²

Doctor of Philosophy in Agricultural Scienc (PhD)

Southern Research Institute of Agriculture¹.

Rice Research Institute²

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Received: 26 th July 2024	This article presents data on the effect of the use of various growth stimulants with different norms on the formation of the leaf surface of winter wheat.
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INTRODUCTION. Providing the population with food and meeting the demand for grain production is one of the most important tasks of our country today. Wheat is the main source of food for our people, and is considered one of the main agricultural sectors. Nowadays, thanks to the implementation of modern technologies in wheat cultivation, the importance is attached to obtaining a high-quality and abundant crop. To achieve high and quality productivity of agricultural cultures, it is necessary to execute agrometers that correspond to the biological characteristics and needs of the cultivated type of cultur.

We know that the fertilizer is injected into the soil or by non-feed feeding. Unfortunately, not all of them are digested by the plant, partially washed off by the weather or poorly reach the root zone. The resulting plant may not get the necessary nutrients. In such a situation, the plant is helped by leaves, because the plants grow, develop and harvest high and quality crops, it is necessary to supplement the foliage. In this case the plant absorbs nutrients through leaves and stems. When feeding through the leaf, the amount of chlorophyll increases and the sheet plate thickens, as a result of which conditions for the plant's destruction by parasitic insects are worsened.

Leaf is the main organ of the plant that absorbs sunlight. The increase in yield is seen in the result of increasing the leaf level of plants to acceptable sizes. But the increase in the level of leaf will have a ripple effect. The lower middle leaves are shaded, and the upper part of the plant grows a bulge of leafy and the stem grows again. The optimal amount of leaf surface improves air exchange between plants, increases lighting, accelerates plant development, early crop maturation [2].

According to A.A. Chleher [4] and A.A. Nichiporovich [3], total areas of leaf surface should be 30-35 thousand square meters per hectare, then the leaves develop well and can provide crops with nutrients. The extramural winter wheat feed affects all physiological processes in the plant. When the plant has a sufficiently formed leaf surface, the photosynthesis process is accelerated, as a result the accumulation of biological substances in the plant is accelerated and the overall biological productivity increases significantly [1].

MATERIAL AND METHODS. In order to study the effect of using various plant growth stimulants in different rates, the stimulants Fitobiosol, IFOCOMBI Fe, Tuplatuvchi+boshoklatuvchi and Fulvolumat were tested in the field experimental plot of the research institute in the southern regions. The experiment was carried out in 13 variants, control and with various plant growth stimulants per hectare at rates of 0.5 l/ha, 1.0 l/ha and 1.5 l/ha. Foliar feeding with stimulants was carried out during the tillering phase on February 15, during the booting phase on March 1-15, during the earing phase on April 1 and the second time on May 1.

RESULT AND DISCUSSION When analyzing the obtained data on the leaf surface of winter wheat in the control variant, it was 36.9 cm² in the booting phase. Significant differences were observed when using different plant growth regulators compared to the control variant. The highest result was observed when using the Tuplatuvchi stimulator with foliar treatment at a rate of 0.5 l/ha it was 100.8 cm², at a rate of 1 l/ha 125.4 cm², and at a rate of 1.5 l/ha it was 168.9 cm². A similar result was also observed when treating with Fitobiosol stimulants at a rate of 0.5 l/ha 100.7 cm², treating at a rate of 1 l/ha 137.7 cm² and treating at a rate of 1.5 l/ha 169.5 cm². PP mln.m²/day

Table-1
The influence of various plant growth regulators on leaf area and photosynthetic potential of winter soft wheat.

№	Norm, l/ha	Leaf area, cm ²			PP mln.m ² /day
		15.mar	15.apr	15.may	
1	Kontrol	36,9	53,7	73,7	1507902
Fitobiosol					
2	0,5	100,7	117,8	125,7	3088096
3	1,0	137,7	157,0	192,0	4497108
4	1,5	169,5	245,1	298,5	6383520
IFOCOMBI Fe					
5	0,5	94,7	105,6	104,7	2719134
6	1,0	124,6	125,3	160,3	3886036
7	1,5	144,9	147,8	218,4	4955412
Tuplatuvchi+boshoklatuvchi					
8	0,5	100,8	112,6	120,5	3017850
9	1,0	125,4	142	190,6	4310240
10	1,5	168,9	171,1	264,0	5904074
Fulvogumat					
11	0,5	84,4	90,9	100,7	2524764
12	1,0	96,1	132,4	146,5	3309064
13	1,5	105,3	144,3	201,2	4180660

According to the results of April 15 and May 15, the leaf level on April 15 was higher in the Fitobiosol stimulator and amounted to 117.8-245.1 cm², and on May 15 125.7-298.5 cm² according to the standards. A similar result was observed for the Tuplatuvchi+boshoklatuvchi stimulants and on April 15 it was 112.6-171.1 cm², and on May 15 it was 120.5-264.0 cm² (1-table). When using the stimulants IFOSOMBI Fe va Fulvohumate, the leaf level was lower and reached 105.6-147.8 cm² on April 15, and 104.7-218.4 cm² on May 15, according to the experimental variants.

The surface area of plant leaves is an important indicator of photosynthetic activity. A high and quality harvest can only be obtained with sufficient leaf surface. Due to the contamination of crop areas, lack of nutrients and light, the process of photosynthesis slows down, which in turn reduces crop yields.

Photosynthetic activity of winter soft wheat on irrigated lands varies depending on many environmental factors, including various plant growth stimulants. The experiments studied changes in the photosynthetic activity of winter soft wheat of the Hisorak variety depending on different rates of foliar feeding from the booting period to the period of illumination; the photosynthetic activity of the plant increased with an increase in the rates of stimulants. In this case, the photosynthetic potential in the control variant was 1.5 PP mln.m²/day, while on average, when treated with different stimulants at different rates, it was 2.5-6.4 PP mln.m²/day (Table 1). When treated with the Fitobiosol stimulant a high result was noted and averaged 3.1-6.4 PP mln.m²/day.

CONCLUSIONS. It was established that during the periods of growth and development of winter wheat, the most effective foliar treatment among various plant growth stimulants was the stimulants Fitobiosol and Tuplatuvchi+boshoklatuvchi. Acceptable rates of the applied suspensions indicate an increase in the leaf surface of winter wheat, which leads to an acceleration of the photosynthesis process and an impact on grain yield. The optimal rates of suspensions used increase the leaf surface, which leads to an acceleration of the photosynthesis process and an impact on the grain yield of winter wheat.

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