



EFFECT OF HERBICIDES ON THE PHOTOSYNTHETIC CAPACITY OF WHEAT

¹Turdieva Nilufar Mominovna

Professor,

²Saidov Sadridin Muydinovich

Doctor of Philosophy- Senior Researcher

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ABSTRACT

The net productivity of photosynthesis depends not only on the size of the assimilation apparatus (leaf), the duration of its work, the intensity of the work of the leaves, but also on the correct application of agricultural practices. Especially timely removal of weeds contributes to the free growth of the wheat plant.

The accumulation of dry matter and its quantity determine the quality and productivity of the crop during the period of plant growth. The accumulation of dry matter during the day and night varies depending on the leaf surface area and the net productivity of photosynthesis in different phases of plant development. Dry matter production was increased in the herbicide treated variants compared to the control. In some variants, this is due to strong accumulation, thickening of the stems, yellowing of the lower leaves. As a result of the abundance of weeds in the control variant, the upper and lower parts of the soil develop poorly under the influence of low temperature and do not form a sufficient vegetative mass.

In the experiments, a large number of weeds in the absence of herbicide treatment did not affect the growth and development of wheat. As a result of annual and perennial weeds growing taller than wheat, especially ryegrass, plants accumulated less dry matter than herbicide-treated fields, which averaged 6.4 grams per growing season. Biostar containing Tribenuron-methyl 75% s.e.g., applied at a dose of 20 g/ha, was effective against annual dicotyledonous weeds, but was ineffective against gorse and perennial weeds, with an organized accumulation of dry matter by plants of 6.8 g.

Table 1

Dry matter accumulation, g.

No	Options	Development phases				
		a tube	thorn	blossom	milk mature	average
1	Control (without herbicides)	2.9	6.1	8.2	11.5	6.4
2	Biostar 75% s.a.g. , 20 g/ha	3.0	6.2	8.7	12.2	6.8
3	Derby 175 SK, 17.5% w.c., 60 ml	3.5	6.8	8.2	12.2	7.5
4	Fluroxypyr 36%	3.1	6.0	8.3	11.6	7.0

	em.c., 0.55 ml					
5	Starane 200, 20% em.c	3.1	6.1	8.2	11.7	7.1
	NSR01=	0.36	0.56	0.21	0.43	0.28

Herbicides with the active ingredient fluroxypyr Fluroxypyr 36% em.ts, 0.55 ml and Staran 200, when using 20% em.ts, were highly effective in the destruction of annual and perennial weeds and were 30-40% effective against gorse, so plants 7- Accumulated 7.1% dry matter. The effectiveness of Derby 175 SC, 17.5% ss.k.60 ml, which contains flumetsulam + florasulam active ingredient, was high both on annual dicotyledonous weeds and on gandumac. As a result, the plants accumulated a high level of dry matter, which was especially noticeable in the tuberization phase. Since the herbicides introduced during the tillering period had already destroyed the weeds in the tuberization phase, the greatest accumulation of dry matter occurred in the milk ripeness phase of the grain in all variants. When using the drug Derby 175 SC, 17.5% ss.k.60 ml, the dry weight of one plant was 0.5-07 g higher than that of the other options, and 0.9 g higher than the control.

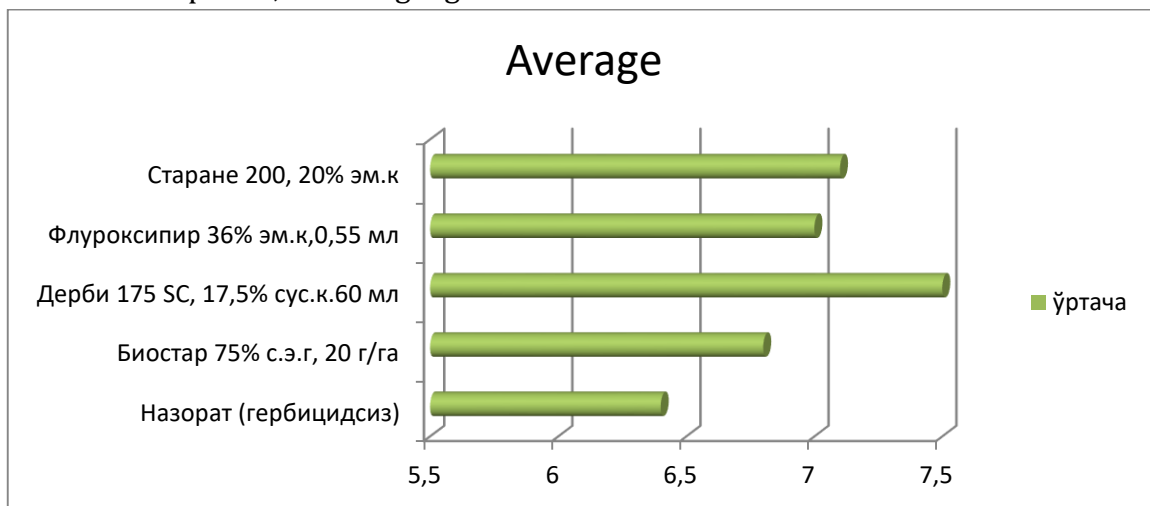


Figure 1. Average dry matter accumulation in wheat.

This result, in turn, dictates that in weed control, we first study the type and composition of plants, and then apply the appropriate herbicides. Only with the accumulation of a sufficient amount of dry matter can plants obtain the desired grain yield or ensure high grain quality (Table 2).

The net productivity of photosynthesis depends not only on the size of the assimilation apparatus (leaf), the duration of its work, the intensity of the work of the leaves, but also on the correct application of agricultural practices. Especially timely removal of weeds contributes to the free growth of the wheat plant. The net productivity of photosynthesis fluctuates with the phases of development during the growing season, it is not very high at the beginning of plant development, in later stages it gradually increases and continues until the flowering phase. In the subsequent phases (milky and waxy ripeness), the net productivity of photosynthesis decreases, since in this phase the leaves of the plants begin to dry out and become dehydrated.



There was no significant difference between the control and other variants in the phase of accumulation of photosynthetic productivity. Herbicides were applied in this phase, and the differences between the variants were significant in the tillering phase.

Table 2

Net productivity of photosynthesis (g/m² per day).

№	Options	Development phases						
		t connection	cross	increase b	grow	etc. mature	m m ripening	middle
1	Control (no herbicide)	4, 8	6, 4	6, 1	6, 7	5, 1	2, 3	5, 2
2	Biostar 75% s.e.g., 20 g/ha	4, 8	6, 7	7.0	7, 3	5, 5	3, 1	5, 4
3	Derby 175 SK, 17.5% w.c., 60 ml	4, 9	6.5	7.5	8.8	7.3	5.8	6.7
4	Fluroxypyr 36% em.c., 0.55 ml	4, 8	6, 3	7, 4	8.4	6.9	5, 1	6, 1
5	Starane 200, 20% em.c	4, 9	6, 5	7.5 _	8.0	6, 1	4, 4	5, 9
	NSR ₀₁ =	0.33	0.6	0.2	0.4	0.2	0.5	0.3

Plants were observed to increase their leaf area in the spike phase and this process continued until the flowering phase. During this period, that is, from the ear phase to the flowering phase, the net productivity of photosynthesis increased.

In the control variant, the average net photosynthetic productivity was 5.2, and when using Derby 175 SC, suspension 17.5%, 60 ml - 6.7 g/m². In the control variant, the net photosynthesis productivity was lower in all phases compared to the herbicide-treated variant.

In the experiments, the net productivity of photosynthesis was higher at all stages of development when using the maximum rate.

During photosynthesis, only the visible part of sunlight is absorbed by plants and is called photosynthetically active radiation. The more energy of solar radiation is absorbed by green plants in the process of photosynthesis, the greater the grain yield. The yield of dry biomass depends on the average leaf area during the growing season, the length of the period and the net productivity of photosynthesis.

The characteristics of the photosynthesis system differ from those of an individual plant. If you increase the area of nutrition of one plant, the seed productivity of the plant will increase if, in relation to it, the illumination is also increased.

It can be concluded that when cultivating winter wheat, it is necessary to carry out weed control measures depending on the type of weeds, taking into account the active ingredient of herbicides. On the irrigated lands of the Samarkand region, it was found that the most common weed polluting the fields of winter wheat is a weed, and against it it was found that the drug Derby 175 SC, 17.5% s.k.



In the fields where this preparation was used, the number of weeds decreased sharply, the leaf surface of the plants was sufficient, the dry matter was well accumulated, the process of photosynthesis was accelerated and the yield was high.

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