



## EFFECTIVE STANDARDS AND TERMS OF APPLICATION OF ATLANTIS HERBICIDE IN GRAIN PRODUCTION IN THE SOUTH OF UZBEKISTAN.

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<b>Article history:</b>		<b>Abstract:</b>
<b>Received:</b>	1 <sup>st</sup> February 2022	The article highlights the dependence of the yield of winter wheat on the use of the herbicide Atlantis. The use of Atlantis herbicide against monocotyledonous and dicotyledonous weeds is an effective way to develop grain production in the steppe zone of southern Uzbekistan, which contributes to an increase in winter wheat grain due to the application rate up to 18.7 centners per hectare and from the terms of application, which contributes to an increase in grain yield up to 11.8 c/ha.
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### INTRODUCTION.

In the conditions of the steppe zone in the south of Uzbekistan in winter wheat crops, methods have been developed to combat monocotyledonous weeds with herbicides with the active ingredient fenoxaprop-P-ethyl + antidote, which, by inhibiting acetyl-Co-A-corbaxylase, destroy monocotyledonous weeds, stopping cell growth and division [7]. Under these conditions, the destruction of dicotyledonous weeds with the active substance trebenuron-methyl has also been developed, which, by stopping the activity of the enzyme acylolactate cinthase, destroys weeds in winter wheat crops [4,5].

However, the simultaneous control of monocotyledonous and dicotyledonous weeds in winter wheat crops has become beneficial agrotechnological and economic side [1,2].

Therefore, there was a need for such a herbicide, in which monocotyledonous and dicotyledonous weeds in winter wheat crops were destroyed at one time. These herbicides include Atlantis 3.6% w.d.g. which is a selective herbicide for the control of monocot and dicotyledonous weeds in winter wheat crops [5].

The active substance Atlantis consists of 30 g/kg mesosulfuron-methyl sodium + 6 g/kg iodosulfuron-methyl sodium + 90 g/kg mefenpyr-diethyl. Mesosulfuron-methyl sodium inhibits the activity of the enzyme acetolactate synthetase and fatally destroys dicotyledonous weeds and, by inhibiting acetyl Co-A-carboxylase, destroys monocotyledonous weeds [2,5].

Iodosulfuron-methyl-sodium is a herbicide of the sulfonylurea class that has a systemic effect against dicotyledonous weeds on winter wheat crops. Mefenpyr-diethyl is an antidote that weakens the phytotoxic effects of fenoxaprop-p-ethyl, including sulfonylureas, in winter wheat crops [2,5].

In this regard, the effect of the herbicide Atlantis on monocotyledonous and dicotyledonous weeds in winter wheat crops in the south of the steppe zone of Uzbekistan was studied.

### METHODS OF RESEARCH

Field experiments were carried out in 2015-2017 in the Kasan district of the Kashkadarya region in four repetitions. Atlantis herbicide was applied in early spring (March 20), middle (April 1) and late (April 10) spring with a rate of 250, 275, 300 g/ha in a working solution of 300 l/ha.

Yield data were mathematically processed according to the method of Dospekhov [3] and Peregudov [6].

### RESULTS AND DISCUSSION

As the research results showed, the yield of winter wheat grain varies depending on the rate and timing of the use of the Atlantis herbicide against weeds (table 1).

When using the herbicide Atlantis in the early spring period (March 20) against weeds, the additional yield of winter wheat was from 4.1 c/ha to 7.4 c/ha, depending on the norm of the herbicide Atlantis.

Depending on the rate and timing of the application of the herbicide Atlantis against monocotyledonous and dicotyledonous weeds, the yield of winter wheat grain naturally increases.

When using the herbicide Atlantis in the middle of spring (April 1) against monocot and dicotyledonous weeds, the yield of winter wheat grain was 52.8-56.5 c/ha, depending on the rate of the herbicide Atlantis, and increased by 9.5-13.2 c/ha. ha in comparison with the control variants of the experiment.

At the late date (April 10) of the application of the herbicide Atlantis at a rate of 250 g/ha against monocot and dicotyledonous weeds, the yield of winter wheat grain was 58.7 c/ha, which is 15.1 c/ha higher than in the control variants of the experiment. When using an increased rate of Atlantis against weeds in the fields of winter wheat at a rate of 275 g/ha, the grain yield was 60.8 c/ha and increased by 17.2 c/ha, with the rate of application of the herbicide Atlantis 300 g/ha, the yield was 62.3 c/ha and increased by 18.7 c/ha compared with the control variants of the experiment.

If we analyze the data obtained on the change in grain yield depending on the timing of the application of the herbicide Atlantis against monocotyledonous and dicotyledonous weeds in the fields of winter wheat, the timing of application has a noticeable positive effect on the yield of winter wheat grain. For example, when using the herbicide Atlantis in the middle of spring (April 1), compared with the application in the early spring (March 20), 5.6-6.0 c/ha increased, and when applied in late spring (April 10), this figure was 11, 5-11.8 c/ha.

Therefore, the yield of winter wheat grains does not depend on the rate of application of the herbicide Atlantis against monocotyledonous and dicotyledonous weeds, and is also closely related to the timing of application.

Table 1 The dependence of the yield of winter wheat in the fight against weeds by a chemical method

No	Experience options	Productivity, c/ha				The difference from control, c/ha	The difference from the term, c/ha
		2015 year M±m	2016 year M±m	2017 year M±m	Average		
20 – March							
1	Control (st)	40,3±0,47	46,0±0,67	42,9±0,64	43,1	0	0
2	Atlantis 250 g/ha	43,2±0,65	51,7±0,42	46,8±0,83	47,2	4,1	0
3	Atlantis 275 g/ha	45,3±0,64	53,1±0,61	48,6±0,53	49,0	5,9	0
4	Atlantis 300 g/ha	46,5±0,32	54,4±0,78	50,6±0,75	50,5	7,4	0
1 – April							
5	Control (st)	39,4±0,75	47,3±0,61	43,2±0,77	43,3	0	0,2
6	Atlantis 250 g/ha	48,6±0,46	57,1±0,57	52,7±0,76	52,8	9,5	5,6
7	Atlantis 275 g/ha	50,6±0,34	58,9±0,59	54,3±0,52	54,6	11,3	5,6
8	Atlantis 300 g/ha	52,8±0,47	61,0±0,65	55,7±0,75	56,5	13,2	6,0
10 – April							
9	Control (st)	40,7±0,46	47,1±0,56	43,0±0,54	43,6	0	0,5
10	Atlantis 250 g/ha	54,8±0,58	63,2±0,62	58,2±0,60	58,7	15,1	11,5
11	Atlantis 275 g/ha	56,9±0,59	65,3±0,39	60,3±0,55	60,8	17,3	11,8
12	Atlantis 300 g/ha	58,4±0,52	66,9±0,61	61,6±0,44	62,3	18,7	11,8
	SSD <sub>0.5</sub> = c/ha* Factor A (term)	0,73	0,99	1,05			
	SSD <sub>0.5</sub> = c/ha Factor B (norm)	0,84	1,14	1,21			
	SSD <sub>0.5</sub> = c/ha Factor AB	1,45	1,98	2,09			

Note: \*smallest significant differences for 5% significance level

**CONCLUSIONS**

The use of the herbicide Atlantis on the fields of winter wheat against monocot and dicot weeds is an effective agrotechnologies, which helps to increase the grain yield due to the application rate up to 18.7 c/ha.

The effectiveness of Atlantis herbicide application on winter wheat fields against monocot and dicotyledonous weeds, along with the rate of application, also depends on the timing of application, which contributes to an increase in grain yield up to 11.8 c/ha.

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