

The effectiveness of the herbicide Atlantis against weeds in the cultivation of winter wheat in the south of Uzbekistan

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Abstract. The use of the herbicide Atlantis 275-300 g/ha against weeds in the fields of winter wheat in the south of Uzbekistan, it was found that 88.0-92.4% of monocotyledonous and 87.8-91.6% of dicotyledonous weeds were destroyed, 87.8-91.2 % of the total number of weeds. According to the norms for the use of herbicides, the effectiveness against weeds exceeded 8.0-12.2%. The effectiveness of herbicide Atlantis at a dose of 300 g/ha was 92.4% against monocotyledonous weeds and 93.8% against dicotyledonous weeds. The effectiveness of herbicide Atlantis was 92.4% against *Chenopodium Botrys* and 88.6% against *Atriplex tatarica*. Efficiency on poisonous weeds *Acroptilon repens* 79.8%, *Heliotropium dacycarpum* 91.3%.

Keywords: winter wheat, grain, herbicide, Atlantis, monocotyledonous, dicotyledonous, weed, experience, variant, struggle, sensitivity, norm, term, type, efficiency.

Currently, a wide variety of herbicides from domestic and foreign manufacturers are used [2,3]. Most of them are selective herbicides. It mainly affects annual and perennial monocotyledonous or dicotyledonous weeds. New generation herbicides are supplemented with ingredients effective against monocots and dicots, annuals, and perennials. Therefore, much attention is paid to the selection of effective herbicides of a mixed type, which have an effective effect on annual and perennial monocotyledonous and dicotyledonous weeds [2,5,7].

Herbicides can be applied at different times before planting, during planting, and after planting [2,7]. However, in grain crops it is used after sowing; from early spring, the mass growth of weeds can be effectively controlled in a short time [1,2,6].

Object of study and methodology

Field experiments were carried out from 2015-2017. in the south of Uzbekistan, Kashkadarya region, Koson district. In the experiments, herbicides were used in three periods: early spring (March 20), middle period (April 1), and late period (April 10), at three rates: 250, 275, 300 g/ha, and a working solution of 300 l/ha [4].

Research results and discussion

The effectiveness of Atlantis against common weeds in the field of winter wheat in terms of application time was 79.4, 79.2, 78.4% when applied at the rate of 250 g/ha, 87.7, 87.8, 87.3% when applied at the rate of 275 g/ha, 91.7, 91.1, 90.6% when applied at the rate of 300 g/ha. Efficiency according to the norms of the herbicide against weeds increased to 8.3-12.3%.

The use of herbicide Atlantis at a dose of 275-300 g/ha against weeds in the conditions of the south of Uzbekistan during the transition from the period of eating to the period of booting of winter wheat gives an efficiency

of up to 87.8-91.1%.

Herbicide Atlantis is not equally effective on different types of weeds. Therefore, it is important to study the effect of the herbicide Atlantis on the fields of winter wheat by weed species.

The effectiveness of Atlantis herbicide against weed species in a winter wheat field is presented in Table 1.

When applied at a dose of 250 g/ha of the herbicide Atlantis on the monocotyledonous weed *Avena fatua* in terms of application, efficiency was observed up to 80.4, 80.2, 79.6%, when applied at a rate of 275 g/ha up to 87.9, 88.0, 87.6%, when applying the norm of 300 g/ha up to 92.4, 91.8, 91.8%.

Table 1

The efficiency of Atlantis herbicide on weed species in winter wheat field, % (2015-2017).

№	Weed types	Experience options											
		March 20			April 1			April 10					
		st	25 g/ ha	27 g/ ha	30 g/h a	st	25 g/ ha	27 g/ ha	300 g/h a	st	25 g/ ha	27 g/ ha	30 g/ ha
1	<i>Avena fatua</i>	-	80, 4	87, 9	92, 4	-	80, 2	88, 0	91, 8	-	79, 6	87, 6	91, 8
2	<i>Stellaria media</i>	-	80, 7	89, 6	93, 1	-	83, 2	91, 5	93, 0	-	82, 6	90, 9	92, 3
3	<i>Galium aparine</i>	-	80, 6	90, 1	92, 9	-	82, 6	91, 5	92, 9	-	81, 8	91, 1	92, 8
4	<i>Polugonum aviculare</i>	-	74, 7	83, 6	89, 3	-	79, 3	88, 5	89, 5	-	78, 8	87, 7	89, 3
5	<i>Convulvulus arvensis</i>	-	66, 7	66, 7	75, 0	-	66, 3	73, 2	75, 3	-	67, 0	71, 0	75, 2
6	<i>Sinapis arvensis</i>	-	81, 6	90, 6	91, 9	-	82, 5	90, 5	94, 2	-	82, 9	91, 7	93, 1
7	<i>Chenopodium album</i>	-	-	-	-	-	81, 3	87, 8	93, 3	-	80, 2	88, 0	92, 0
8	<i>Chenopodium Botrys</i>	-	-	-	-	-	78, 9	87, 6	91, 7	-	80, 2	89, 6	92, 4
9	<i>Artiplex tatarica</i>	-	-	-	-	-	72, 3	81, 3	88, 6	-	71, 7	82, 4	86, 2
10	<i>Solsola pestitar</i>	-	92, 6	50, 0	85, 7	-	75, 0	82, 1	88, 6	-	73, 8	83, 1	87, 1
11	<i>Heliotrapium lasiocarpum</i>	-	-	-	-	-	71, 1	84, 4	91, 2	-	69, 0	83, 9	87, 5
12	<i>Amaranthus retroflexus</i>	-	85, 7	80, 0	83, 3	-	80, 0	90, 3	91, 6	-	80, 2	88, 5	92, 4

13	Acroptilon repens	-	-	-	-	-	62,5	73,8	77,8	-	63,1	77,2	79,8
14	Heliotropium dacycarpum	-	87,5	66,7	85,7	-	73,1	87,2	91,3	-	71,1	86,4	90,6
15	Capsella bursa pastoris	-	80,9	90,5	93,6	-	81,9	90,9	93,3	-	81,0	90,5	93,8
16	Descurainia Sophia	-	81,6	89,2	93,8	-	83,7	91,3	95,0	-	85,4	90,6	93,0
17	Daucus carota	-	71,2	83,8	89,2	-	75,0	88,1	91,9	-	74,3	86,9	91,6
18	Xanthium strumarium	-	60,0	25,0	62,5	-	80,0	88,8	89,9	-	75,2	87,8	91,3
19	Fumaria vaillantii	-	79,0	86,0	89,9	-	84,3	90,7	93,2	-	82,9	89,7	92,5
20	Lactuca serriola	-	-	-	-	-	72,8	79,3	87,2	-	73,7	79,9	86,7
	Жами	-	79,4	87,7	91,7	-	79,2	87,8	91,1	-	78,4	87,3	90,6

The effect of Atlantis herbicide on dicotyledonous weeds *Atriplex tatarica*, *Salsola pestitar*, *Heliotropium lasiocarpum*, *Heliotropium dacycarpum*, *Lactuca serriola*, *Xanthium strumarium* was 86.2-90.6%.

Established high efficiency of 91.3-93.8% on herbicide-sensitive dicotyledonous weeds such as *Stellaria media*, *Galium aparine*, *polygonum aviculare*, *Sinapis arvensis*, *Chenopodium album*, *Chenopodium Botrys*, *Amaranthus retroflexus*, *Capsella bursa pastoris*, *Descurainia Sophia*, *Daucus Carota* *Fumaria vaillantii*.

At an application rate of 300 g/ha, Atlantis herbicide showed an efficiency of up to 92.4% for monocotyledonous weeds and 93.8% for dicotyledonous weeds.

Herbicide-resistant weeds *Convolvulus arvensis* and *Acroptilon repens* grow in the fields of winter wheat in the Kashkadarya region from early spring to the second half of summer, which have a great negative impact on grain. At a dose of herbicide Atlantis of 300 g/ha, up to 75.3% of *Convolvulus arvensis* weeds and 79.8% of *Acroptilon repens* weeds were destroyed.

In the Kashkadarya region, *Chenopodium Botrys* and *Artiplex tatarica* are very common, which negatively affect winter wheat and interfere with its harvesting by a combine. The effectiveness of herbicide Atlantis was 92.4% against *Chenopodium Botrys* and 88.6% against *Atriplex tatarica*.

It was noted that the herbicide Atlantis acts on poisonous weeds *Acroptilon repens*, *Heliotropium dacycarpum* 79.8-91.3% and the aerial part of these weeds has lost the ability to develop.

Conclusions

There was no significant difference in the timing of application of the herbicide Atlantis against weeds in the fields of winter wheat in the Kashkadarya region in the south of Uzbekistan.

After application of the herbicide Atlantis at a dose of 275-300 g/ha, it was found that 88.0-92.4% of monocotyledonous weeds, 87.8-91.6% of dicotyledonous weeds, and a total of 87.8 weeds were destroyed. 91.2%. According to the norms for the use of herbicides, the effectiveness against weeds exceeded 8.0-12.2%. The effectiveness of herbicide Atlantis at a dose of 300 g/ha was 92.4% against monocotyledonous weeds and 93.8% against dicotyledonous weeds. The effectiveness of herbicide Atlantis was 92.4% against *Chenopodium Botrys* and 88.6% against *Atriplex tatarica*. Efficiency on poisonous weeds *Acroptilon repens* 79.8%, *Heliotropium dacycarpum* 91.3%.

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