Oat response to preemergence and postemergence herbicides.

A trial was conducted to evaluate oat response to preemergence herbicides applied at planting and at the 1-leaf stage of oats; trial also included evaluation of two postemergence herbicides, topramezone (Armezon) and tembotrione (Laudis) applied at the 1-leaf and 4-leaf growth stage. Oat was planted on April 30 and emerged on May 14. Herbicide treatments were applied on May 4, May 26, and June 5, for preemergence, 1-leaf, and 4-leaf timings. More than an inch of rainfall occurred after planting and prior to oat emergence. Following the preemergence application, Zidua caused severe injury to oats; Outlook also resulted in moderate injury to oats. This was observed at all evaluation dates. Dual II Magnum also resulted in minor to moderate injury to oats. Injury was much reduced when preemergence herbicides were applied after oats had emerged. Both Armezon and Laudis caused minor to moderate injury of oats. Oat height was reduced following PRE application of Zidua (3 oz/A) and Outlook. Other treatments did not reduce height compared to the untreated control. Zidua (3 oz/A) applied PRE reduced wheat yield by more than 50%. Dual II Magnum, Prowl H2O, and Outlook also reduced yield when applied PRE. At the 1-leaf application timing, Zidua, Dual II Magnum, Prowl H2O, Armezon, and Laudis all resulted in yield that was less than the untreated control. At the 4-leaf stage, Armezon reduced oat yield, but Laudis did not. The above normal rainfall that occurred in May, followed by drought conditions that occurred during June and July likely contributed to the observed yield losses.

Treatment[ab]	Rate	Time[c]	Injury[d]				Height	Yield
			21 DAA	9 DAB	10 DAC	20 DAC		
	oz/A		——————————%——————————				cm	Bu/A
1 Untreated		ABC	0 c	0 e	0 e	0 e	51 abc	1163 a
2 Zidua	1.5	A	21 b	49 b	41 b	23 c	46 cde	1034 a-d
3 Zidua	3	A	64 a	75 a	68 a	56 a	43 e	455 f
4 Warrant	48	A	0 c	0 e	3 de	0 e	54 a	1037 abc
5 Dual II Magnum	27	A	0 c	11 c	15 c	4 de	51 a-d	904 de
6 Prowl H2O	48	A	0 c	0 e	0 e	0 e	53 ab	918 de
7 Outlook	18	A	25 b	49 b	43 b	31 b	45 de	945 cde
8 Zidua	1.5	B		5 de	2 de	0 e	49 a-d	969 b-e
9 Zidua	3	B		0 e	4 de	6 d	48 b-e	943 cde
10 Warrant	48	B		0 e	3 de	0 e	53 ab	1052 abc
11 Dual II Magnum	27	B		0 e	0 e	0 e	52 abc	879 e
12 Prowl H2O	48	B		0 e	1 de	0 e	55 a	1000 bcd
13 Outlook	18	B		0 e	0 e	0 e	54 ab	1034 a-d
14 Armezon	1	B		12 c	7 d	2 de	49 a-d	947 cde
15 Armezon	1	C		0 e	14 c	3 de	51 a-d	986 b-e
16 Laudis	3	B		10 cd	4 de	0 e	53 ab	964 cde
17 Laudis	3	C		0 e	7 d	1 e	54 ab	1075 ab
LSD P=.10			6.4	5.5	6.7	4.8	6.2	107.0
Treatment Prob(F)			0.0001	0.0001	0.0001	0.0001	0.0637	0.0002

[a]Zidua, pyroxasulfone (85% DF); Warrant, acetochlor (3 lb/gal); Dual II Magnum, metolachlor, 7.64 lb/gal); Prowl H2O, pendimethalin (3.8 lb/gal); Outlook, dimethenamid (6 lb/gal); Armezon, topramezone (2.8 lb/gal); Laudis, tembotrione (3.5 lb/gal).

[b]COC (1% v/v) was included with Armezon treatments; MSO (1% v/v) was included with Laudis treatments.

[c]Time of application: A, at planting; B, at 1-2 leaf oats; C, at 4-5 leaf oats.

[d]Injury evaluations: 21 DAA, 21 days after 'A' PRE treatments, May 25, 11 days after oat emergence; 9 DAB, 9 days after 'B' application, June 4; 10 DAC, 10 days after 'C' application, June 15; 20 DAC, 20 days after 'C' treatment.