

## Herbicide use During Native Grass Establishment

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This study was conducted at the John Seaton Anderson Research Center in Mead, NE, on a tilled soil prepared for broadcast seed establishment. Separate but adjacent plots were seeded on 11 June with Blue Grama (1 PLS lb./4000 sq. ft.), Little Bluestem (1 PLS lb./3000 sq. ft.), Sideoats Grama (1 PLS Lb./2200 sq. ft.), Texoka Buffalograss ( 3 PLS Lb./1000 sq. ft.) or a combination of the 4 species (Prairie 3 Plus) ( 1 PLS Lb. /3000 sq. ft.). Following seeding 3 separate timings of herbicide applications were used to determine efficacy and safety to the desired species. At seeding (11 June) herbicide treatments were applied along with 1 lb. P2O5/1000ft<sup>2</sup> fertilizer. When uniform germination occurred and plants were in the 1-2 leaf stage At emergence (30 June) herbicide applications were applied. The final application occurred on 24 July, 3 weeks after the at emergence application

Plots were irrigated to encourage seed germination and establishment. The stand was mowed at 3 inches throughout the study. Plots were 5' x 5' and sprayed with a CO<sub>2</sub> backpack sprayer using a 3 nozzle boom with 8002vs nozzle at 30 psi in 2 gal/1000ft<sup>2</sup> water. Plots were rated for % desired grass cover on a 0-100% scale.

### 2014 Results

**Blue Grama:** All herbicides used at seeding except Tenacity resulted in >72 % cover of Blue Grama when rated at the end of the growing season. Manor and Plateau applied at emergence also resulted in the highest levels of cover at 62 and 65 % respectively. Tenacity applied at time of seeding resulted in damaged seedlings which ultimately reduced Blue Grama cover.

**Little Bluestem:** Plateau applied at seeding resulted in the highest Little Bluestem cover (75%). The next best treatments resulted in < 35% cover.

**Sideoats Grama:** No differences were observed between treatments but, herbicides applied at seeding resulted in higher cover than the two later application timings (Data not shown). Sideoats Grama plots were compromised by heavy spring rains causing water to stand at a key timing during germination resulting in seedling death.

**Buffalograss:** No differences were observed between any treatments. Buffalograss plots were compromised by heavy spring rains causing water to stand at a key timing during germination resulting in seedling death.

**Prairie 3 Plus:** Manor and Plateau applied at seeding and Tenacity applied at emergence resulted in the highest levels of cover (57-63%). The next best treatment provided <33% cover.

### Conclusion

On this site crabgrass and foxtail were the dominant weed species. Herbicides that were able to provide adequate weed control and safety resulted in acceptable turf cover at the end of the growing season. We found that Tenacity applied at seeding resulted in negative effects to Blue Grama seedlings, but when applied at the two later timings resulted in little damage to Blue Grama. Plateau was one of the better performing herbicides across species, although little information on Sideoats Grama and Buffalograss was collected due to poor establishment.

Final Data will be collected in the summer of 2015 to determine long term effects of these treatments

Application Description	A	B	C
Application Date:	6/11/2014	6/30/2014	7/24/2014
Application Method:	spray	spray	spray
Application Placement:	broad	broad	broad
Air Temperature, Unit:	65 F	72 F	75 F
% Relative Humidity:	58	73	72
Soil Temperature, Unit:	71 F	76 F	81 F

**Table 1. Effect of herbicide and application timing on native grass establishment**

Description			Blue Grama	Little Bluestem	Sideoats Grama	Buffalograss	Mix all 4 Species
Rating Date			10/30/2014	10/30/2014	10/30/2014	10/30/2014	10/30/2014
Rating Type			Ground	Ground	Ground	Ground	Ground
Rating Unit			%	%	%	%	%
Days After First/Last Applic.			141 98	141 98	141 98	141 98	141 98
<b>Application Timing</b>	<b>Herbicide</b>	<b>Rate</b>					
At Seeding	Tenacity	8 fl oz/a	7	30	5	5	27
	Drive DF	16 oz/a	73	17	18	5	15
	SquareOne	18 oz/a	72	7	17	5	18
	Manor	1 oz/a	95	35	30	5	57
	Plateau	4 fl oz/a	72	75	8	5	62
At Emergence	Tenacity	8 fl oz/a	45	25	6	5	63
	Drive DF	16 oz/a	45	5	12	5	13
	SquareOne	18 oz/a	42	5	5	8	8
	Manor	1 oz/a	62	7	5	5	32
	Plateau	4 fl oz/a	65	12	5	5	10
3 weeks after Emergence	Tenacity	8 fl oz/a	55	8	5	5	7
	Drive DF	16 oz/a	20	5	5	5	7
	SquareOne	18 oz/a	58	7	5	5	12
	Manor	1 oz/a	35	10	5	5	17
	Plateau	4 fl oz/a	23	5	5	5	8
<b>UNTREATED PLOTS (for reference only)</b>			<b>15</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>
Treatment Prob(F)			0.0014	0.0004	0.0842	0.4578	0.0065
LSD (P=.05)			33.4	19.2	NS	NS	28.7