

## Lespedeza Control in Pastures

### *Introduction*

Sericea lespedeza (*Lespedeza cuneata*), otherwise known as Chinese lespedeza, is a perennial leguminous forb native to Asia. Introduced in the late 1800s as a potential forage species, it was later used as a reclamation species planted on acidic and low fertility soils. It is grown in Kentucky for pasture, hay, and soil stabilization but can be invasive in some environments.

Sericea lespedeza can complement cool-season grasses in pasture with proper management. However it is naturally high in tannin, which can cause poor acceptance and performance in ruminants. In general, performance of cattle grazing sericea in Kentucky and other states has been poor because of poor animal acceptance and due to its naturally high tannin content. In grass-sericea pastures, grazing animals tend to eat the grass first and avoid sericea. In these cases, sericea becomes overmature and cannot support animal gains because of low forage quality (Henning et al. 1992).

Aminocyclopyrachlor (DPX-MAT28) is a synthetic auxin active ingredient developed by DuPont for the noncrop and invasive plant market as well as the range and pasture market. This herbicide has good activity against most legumes. Different rates of MAT28 by itself and in combination with other products were evaluated and compared with existing products for the control of sericea lespedeza in cool season grass pastures (Table 1).

### *Materials and Methods*

The trial was established on a cooperators' pasture in Hopkins County. This pasture contained mostly tall fescue and lots of sericea lespedeza. The site was mowed to about 6 inches one month before treatments were applied. An eleven treatment randomized complete block trial with 4 reps and 10 ft x 40 ft plots was laid out. The treatments were applied at 15 gallons per acre on June 17, 2009. Most herbicide treatments included Activator 90 at 0.25% v/v while two MAT28 treatments (Trt. 2 and 4) had methylated seed oil (MSO) at 1% v/v as the adjuvant to compare with Treatments 1 and 3 (Table 1). Remedy and Overdrive are pasture herbicides with sericea lespedeza on their labels. The tall fescue was at 12 inches height while the lespedeza was at 14 inches. Visual percent control was assessed 13 (6/30/2009), 35 (7/22/2009), 54 (8/10/2009), and 406 (7/28/2010) days after treatment (DAT). Grass injury was assessed 13, 35, and 54 DAT. Data were analyzed using ARM software and treatment means were compared using Fisher's Protected LSD at  $p = 0.05$ .

### *Results*

No grass injury was observed for any of the treatments 13, 35, or 54 DAT. The top group of treatments had 75 to 91% control 13 DAT. These included the Remedy, Overdrive, MAT28 at 3 and 4 oz/acre and MAT28 + Escort treatments (Table 1). The MAT28 + Telar and MAT28 + 2,4-D treatments were never in the top group of treatments and were not different

from the nontreated control 406 DAT. The MAT28 at 2 oz/acre with Activator 90 and Overdrive treatments were also not different from control 406 DAT.

The top group of treatments ranged from 63 to 94% control 406 DAT. These included the Remedy, MAT28 at 3 and 4 oz/acre and MAT28 + Escort treatments (Table 1). The MAT28 at 2 oz/acre treatments using different adjuvants (Trt. 1 and 2) were different 406 DAT with MSO showing greater control than Activator 90. It is possible that there was greater plant uptake with MSO. The most “promising” MAT28 mixture was with Escort at 85% control 406 DAT (Table 1).

Table 1. Treatments and Results for Lespedeza Control Trial

Trt. No.	Product Name	Rate	Rate Unit	Visual Percent Control			
				13 DAT	35 DAT	54 DAT	406 DAT
1	MAT 28	2	OZ/A	63 <i>d</i>	45 <i>d</i>	51 <i>cd</i>	20 <i>cd</i>
	Activator 90	0.25	% V/V				
2	MAT 28	2	OZ/A	73 <i>bcd</i>	55 <i>cd</i>	73 <i>abcd</i>	48 <i>bc</i>
	MSO	1	% V/V				
3	MAT 28	3	OZ/A	79 <i>abc</i>	68 <i>bc</i>	75 <i>abc</i>	63 <i>ab</i>
	Activator 90	0.25	% V/V				
4	MAT 28	3	OZ/A	83 <i>abc</i>	75 <i>ab</i>	79 <i>ab</i>	65 <i>ab</i>
	MSO	1	% V/V				
5	MAT 28	4	OZ/A	81 <i>abc</i>	78 <i>ab</i>	83 <i>ab</i>	63 <i>ab</i>
	Activator 90	0.25	% V/V				
6	Remedy	1.5	PT/A	91 <i>a</i>	93 <i>a</i>	98 <i>a</i>	94 <i>a</i>
	Activator 90	0.25	% V/V				
7	Remedy	0.75	PT/A	88 <i>ab</i>	88 <i>ab</i>	93 <i>a</i>	91 <i>a</i>
	Activator 90	0.25	% V/V				
8	Overdrive	8	OZ/A	75 <i>abcd</i>	53 <i>cd</i>	60 <i>bcd</i>	23 <i>cd</i>
	Activator 90	0.25	% V/V				
9	MAT 28	2	OZ/A	89 <i>ab</i>	80 <i>ab</i>	87 <i>ab</i>	85 <i>a</i>
	Escort	0.33	OZ/A				
	Activator 90	0.25	% V/V				
10	MAT 28	2	OZ/A	69 <i>cd</i>	45 <i>d</i>	50 <i>cd</i>	23 <i>cd</i>
	Telar	0.16	OZ/A				
	Activator 90	0.25	% V/V				
11	MAT 28	2	OZ/A	63 <i>d</i>	48 <i>cd</i>	48 <i>d</i>	10 <i>d</i>
	2,4-D Amine (4 LBA/GAL)	1	PT/A				
	Activator 90	0.25	% V/V				
12	Nontreated Check			0 <i>e</i>	0 <i>e</i>	0 <i>e</i>	0 <i>d</i>

Means within a column followed by the same letter are not different according to Fisher's Protected LSD at  $P < 0.05$ .  
No grass injury was observed 13, 35, and 54 DAT

### References

Henning, J.C., N. L. Taylor, and G. D. Lacefield. 1992. Growing Lespedeza in Kentucky. University of Kentucky, College of Agriculture Extension Publication AGR-86