

## **Evaluation of Palisade<sup>®</sup> on Kentucky and Rough Bluegrass, 2003**

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### **Abstract**

The growth regulator Palisade<sup>®</sup> (Syngenta) was evaluated on a commercial Kentucky bluegrass seed field (var. 'Geronimo') and rough bluegrass seed field (var. 'Laser') near Madras, Oregon. Treatments were applied at the two-node stage. Palisade increased yields ( $P \leq 0.10$ ) on Kentucky bluegrass by about 30 percent at both 2.1 pt/acre and 2.8 pt/acre. Although not statistically different ( $P \leq 0.10$ ), the trend was for Palisade to increase yield by 10-20 percent on rough bluegrass. Seed yield on the growth regulator Apogee<sup>®</sup> (BASF) plots was similar to the untreated for both Kentucky and rough bluegrass.

### **Introduction**

Research to evaluate Palisade on Kentucky bluegrass has been conducted annually since 1999. Yields have been increased by 32-36 percent 3 of the 4 years compared to untreated plots when Palisade was applied at 22 oz/acre from detection of the first and second node (Feekes 7) to when the head just becomes visible (Feekes 10.1). Late application, when the head is extended just above the flag leaf (Feekes 10.4), produced the greatest reduction in plant size, while plants tended to outgrow the effect of earlier Palisade applications. There were no differences between treatments in weight per 1,000 seeds. Percent germination, while variable, does not appear to be related to Palisade or Apogee treatments.

### **Methods and Materials**

Plots 10 ft by 25 ft were replicated four times in a randomized complete block design in commercial fields of 'Geronimo' Kentucky bluegrass and 'Laser' rough bluegrass near Culver and Madras, Oregon. Palisade was applied at 1.5 pt/acre, 2.1 pint/acre, and 2.8 pint/acre, and Apogee was applied at 0.9 lb/acre. Treatments were applied May 9 (second node detectable) to both Kentucky and rough bluegrass. Treatments were applied with a CO<sub>2</sub>-pressurized, hand-held boom sprayer at 40 psi and 20 gal/acre water using TeeJet 8002 nozzles. Prior to harvest, a Jari mower was used to cut 3-ft alleyways across the front and back of each row of plots. A research-sized swather was used to harvest a 40-inch by 22-ft portion of each Kentucky bluegrass plot on July 1. Rough bluegrass plots were harvested July 7. Samples were placed in large canvas bags and hung in an equipment shed to dry, then transported to Corvallis, Oregon for threshing with a Hege 180 at the Oregon State University Crop and Soil Science's Hyslop Farm. Thousand-seed counts were conducted at the seed-conditioning lab with the National Forage Seed Production Research Center in Corvallis, and germination testing was done at the Central Oregon Agricultural Research Center near Madras.

## Results and Discussion

At the 90 percent confidence level, Palisade increased seed yield on Kentucky bluegrass by about 30 percent at either 2.1 pt/acre or 2.8 pt/acre. Although not significantly different ( $P \leq 0.10$ ), the trend in rough bluegrass was for Palisade at 1.5 pt/acre to increase seed yield by 19 percent, as good or better than the two higher rates. Seed yield from the Apogee plots was similar to the untreated for both Kentucky and rough bluegrass.

Palisade has been evaluated in central Oregon from 1999 to 2003. Seed yields averaged across these dates for the same application rates indicate that 2.1- to 2.8-pt/acre rates consistently give positive results. Increases in seed yield for the best treatments have generally been in the 30 percent range. At times it has appeared that lower rates can give similar results, but not consistently. Application at the two-node stage has been quite consistent in providing the best results.

Palisade evaluation on rough bluegrass began in 2001. It appears that the two-node stage is the best timing, but there has been variability as to the best rate and level of yield increase one can expect. Overall, it appears that the effects may be somewhat less than for Kentucky bluegrass.

Table 1. Effect of Palisade growth regulator on yield of Kentucky bluegrass, Madras, Oregon, 2003.

Treatment	Rate product/acre	Seed yield		Weight g/1,000 seed	Germination %
		--lb/acre--	% check		
Palisade	1.5 pt	1,544	ab <sup>1</sup>	.3760	79
Palisade	2.1 pt	1,891	a	.3721	76
Palisade	2.8 pt	1,858	a	.3873	81
Apogee	0.9 lb	1,438	b	.3782	84
Untreated	----	1,441	b	.3811	83
				NS	NS

<sup>1</sup>Mean separation with LSD  $P \leq 0.1$ .

Table 2. Effect of Palisade growth regulator on yield of rough bluegrass, Madras, Oregon, 2003.

Treatment	Rate product/acre	Seed Yield		Weight g/1,000 seed	Germination %
		lb/acre	% check		
Palisade	1.5 pt	1,445	119	.2218	96 ab
Palisade	2.1 pt	1,363	112	.2275	94 b
Palisade	2.8 pt	1,382	114	.2210	99 a
Apogee	0.9 lb	1,263	104	.2207	96 ab
Untreated	----	1,213	100	.2216	97 a
		NS <sup>1</sup>		NS	

<sup>1</sup>Mean separation with LSD  $P \leq 0$ .