

Control of Cheatgrass with Low Rates of Plateau™ in Arid Rangelands in North Central Wyoming

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**Wildfire in 1996 that burned 100,000 acres of
rangeland SE of Worland, WY**



Site of test in late October 2001, before treatment



Location Information:

Site: 19 miles S.E. of Worland, WY

Rainfall: 20-year average = 10 inches
2001 = 6 inches
2002 = 8 inches

Soil: Very fine sandy loam and loams in the top 2 inches with clay loams below.

Vegetation: Moderate to dense population of cheatgrass. Light population of needle & thread. Sparse to light population of w. wheatgrass. Sparse population of blue grama.

Treatment Information:

Pre-emergence treatment date: October 29, 2001

Post-emergence treatment date: April 5, 2002

Silicone surfactant added at 1.5 pts/acre.

Sprayer: Hand-held 10-foot boom with Tee-Jet 8002 nozzles. Calibrated to apply 13 gallons /acre at 3 mph.

Experimental design: Randomized complete block with four replications. Plots 10 ft x 560 ft.

Nontreated control plot June 13, 2002.



Plateau applied post-emergence @ 1 oz/A on 4-05-02



Plateau applied post-emergence @ 2 oz/A on 4-05-02



Plateau applied pre-emergence @ 2 oz/A on 10-29-01



Plateau applied pre-emergence @ 3 oz/A on 10-29-01



Plateau applied pre-emergence @ 4 oz/A on 10-29-01



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<u>Treatment</u>	<u>Rate oz/acre</u>	<u>Cheatgrass 4-30-02 no/m²</u>	<u>Cheatgrass 5-24-02 % control</u>	<u>Cheatgrass 11-05-02 no/m²</u>	<u>Nat. grass 5-24-02 % tolerance</u>
Plateau-Pre	2.0	94	81	62	93
Plateau-Pre	3.0	71	95	29	89
Plateau-Pre	4.0	104	99	18	83
Plateau-Post	1.0	91	75	138	96
Plateau-Post	2.0	26	86	78	84
Nontreated	---	152	0	2150	100

**Plateau applied post-emergence @ 4 oz/A on 4-05-02
with silicone surfactant @ 1.5 pts/A**



**Plateau applied post-emergence @ 4 oz/A on 4-13-02
with 1 qt/A methylated seed oil**



**Plateau applied post-emergence @ 6 oz/A on 4-13-02
with methylated seed oil @ 1 qt/A**



PRECAUTIONS

- Results of this study are based on Plateau being applied with a research sprayer. Field experience by others indicate that applications of Plateau on rolling hills with helicopters are more effective than applications with fixed-wing planes.
- Results are based on low-rainfall conditions in north central Wyoming where very little plant litter was on the soil surface. Higher rainfall and/or higher levels of soil litter may reduce the effectiveness of low rates of Plateau.

OBSERVATIONS

- For fall pre-emergence applications, Plateau @ 3 oz/A was the best treatment in these experiments.
- For post-emergence applications in the spring, Plateau @ 2 oz/A was best, and early spring was safer on desirable grasses than later applications.
- Plateau was less injurious to desirable grasses with silicone surfactants than with MSO.
- Plateau at 2 or more oz/A appeared to persist in sufficient concentration to reduced the growth of cheatgrass that emerged the fall after treatment.

OBSERVATIONS

- Plateau applied @ 4 oz/A to a site where seedling sagebrush was transplanted 2 weeks later controlled the cheatgrass and greatly improved the survival and growth of the sagebrush.
- Gardner saltbush and winter fat were tolerant of Plateau in this study.
- Plateau in this study did not control six-weeks fescue.
- Plateau at these low rates killed western yarrow and annual mustards.

OBSERVATIONS

- Order of grass tolerance to Plateau in this test was blue grama >> needle & thread > w. wheatgrass.
- Cheatgrass-infested rangelands treated with Plateau will probably have to be rested from grazing for one or more years, or changed to a fall-winter grazing program to give the grasses a chance to recover from the competitive effects of the cheatgrass.
- This change will be necessary to prevent cheatgrass from quickly re-invading the area.

CONCLUSIONS

- **In arid rangelands infested with cheatgrass, low rates of Plateau appear to provide an economical and effective method to begin restoring these areas to more desirable vegetation.**