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AGRONOMY NOTES

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COMPARISON OF AMMONIUM NITRATE AND UREA AS NITROGEN SOURCE FOR TOPDRESSING ESTABLISHED GRASS SODS

Grant Thomas and Harold Miller

When urea is broadcast and not worked into the soil there is a risk of some of the nitrogen being lost to the atmosphere as ammonia. In an effort to measure the effectiveness of urea compared to ammonium nitrate as sources of nitrogen for top-dressing on established grass sod, an experiment comparing these two sources at rates to supply 0, 50, 100 and 150 pounds of nitrogen per acre was conducted in 1971.

March 18, 1971, the nitrogen treatments were broadcast on an old sod mixture of bluegrass - orchardgrass. The plots were harvested four times during the growing season and yields calculated on the basis of pounds of dry matter per acre. Each treatment was replicated 4 times. Yields for each harvest, total yield for the season and yield increases over the check plots for the nitrogen applications are shown below.

AVERAGE YIELD FOR FOUR REPLICATIONS

Actual Nitrogen Lb/A	Source	Pound of Dry Matter Per Acre				Total for Season	Yield Increase Over check
		1st Cut May 17	2nd Cut June 8	3rd Cut Aug. 2	4th Cut Oct. 28		
None	-	743	282	725	651	2401	-
50	A. N. *	1981	404	841	826	4052	1651
50	Urea	1746	383	874	1031	4034	1633
100	A. N.	3198	437	1187	897	5719	3318
100	Urea	2655	458	1218	848	5179	2778
150	A. N.	3650	586	1770	999	7005	4604
150	Urea	2937	599	1514	1138	6188	3787

*A. N. - ammonium nitrate

Total production of dry matter for the season was higher at each rate of nitrogen from the ammonium nitrate treated plots than from the urea treated plots. Yield differences were 18, 540 and 817 pounds per acre in favor of the ammonium nitrate at the 50, 100 and 150 pound nitrogen rates respectively. Under the condition

of this experiment for the 1971 season considering the average yield increases over the check plots for the three rates, urea was 86% as effective as ammonium nitrate when applied as a topdressing.

Dry matter production on the ammonium nitrate plots increased roughly 3/4 ton for each 50 pound addition of nitrogen through the 150 pound rate. When this additional production is utilized as pasture, hay or silage it is very low cost feed.