

FORAGE PRODUCTION AND NUTRIENT VALUES OF COOL SEASON ANNUALS FOR SILAGE PRODUCTION IN NORTH MISSISSIPPI

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ABSTRACT: Two varieties of triticale, Trical 498 and Trical 351 were planted in replicated plots to compare with forage wheat, forage oats and Marshall ryegrass for forage production and nutrient values. Plots were planted October 3, 2000 and harvested April 11, 2001 at the boot stage of each species. Yields ranged from 4000 to 5536 lb/ac of dry matter. Crude protein ranged from 13.5% to 24.7% and TDN ranged from 57 to 67 percent.

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MATERIALS AND METHODS: Forage oats, forage wheat, Marshall ryegrass, and two varieties of triticale were planted at recommended rates for each variety with a cone seeder. Each variety was planted in 5 ft by 20 ft plots with 4 replications (reps) in a RCB design. The soil was a Memphis silt loam and the planting and harvesting dates were October 3, 2000 and April 11, 2001 respectively. Each variety was planted on a prepared seedbed with no irrigation and 32 N, 96 P, and 96 K/ac at planting and top dressed with 168 lb N/ac on February 20, 2001. Harvesting was at the boot stage of growth for each variety. Samples were taken from each variety for dry matter determination and nutrient analyses.

RESULTS AND DISCUSSION: All varieties survived the relatively mild winter in excellent condition. Triticale is not traditionally grown in Mississippi, but in this study it compared well with the wheat, oats, and ryegrass in both production and nutrient values. Mean dry matter production was similar for Marshall ryegrass (5536.7 lb/ac), Trical 498 (5297.9 lb/ac), and wheat (5529.1 lb/ac) but was significantly different for Trical 351 (4000.6 lb/ac) and forage oats (4338.8 lb/ac). Nutrient analyses values indicated Marshall ryegrass and Trical 351 to top the five varieties and wheat, oats, and Trical 498 to be similar in crude protein and total digestible nutrient values (Tables 1 and 2).

Table 1. Dry Matter Nutrient Production for Cool Season Annuals for Silage

	lbs DM/A	lbs CP/A	lbs TDN/A
Marshall Ryegrass	5536.7 *a	985.5	3709.6
Triticale (Trical 498)	5297.9 *a	768.2	3019.8
Forage Wheat	5229.1 *a	768.7	3085.1
Forage Oats	4338.8 *b	585.7	2559.9
Triticale (Trical 351)	4000.6 *b	988.1	2400.4

*Means within columns followed by the same letter are not significantly different at the 5% probability level. LSD = 870.38

Table 2. Nutrient Values of Cool Season Annuals for Silage

	Marshall Ryegrass	Forage Wheat	Forage Oats	Triticale (Trical 498)	Triticale (Trical 351)
% DM	13.0	15.3	12.6	16.1	12.5
% CP	17.8	14.7	13.5	14.5	24.7
% NDF	54.3	61.6	59.0	58.1	50.4
% NSE	15.7	11.8	15.5	17.4	14.8
% TDN	67	59	59	57	60
NEL (Mcal/lb)	.65	.53	.54	.53	.59
NEM (Mcal/lb)	.68	.54	.54	.51	.56
NEG (Mcal/lb)	.41	.29	.29	.26	.30
% IVTD	78.7	75.0	80.4	79.5	79.0
% DNDF	60.8	59.4	66.8	64.7	58.4
% IVNEL (Mcal/lb)	.68	.57	.63	.62	.67

