



# Extension Extra

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COLLEGE OF AGRICULTURE & BIOLOGICAL SCIENCES / SOUTH DAKOTA STATE UNIVERSITY / USDA

## Forage Value of Spring Oats and Triticale

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Spring oats commonly are grown in South Dakota for either grain or forage. The value of oats as forage depends on maturity when harvested and varietal characteristics. As oats matures, yield increases and quality decreases. Research indicates that tall, late-maturing varieties produce the highest forage yields.

Triticale was originally developed as a grain for human and animal consumption, but it has the potential to be used as forage. Research suggests that spring triticale has forage yield and quality characteristics similar to oats and barley.

A two-year field study conducted in central South Dakota in 1988 and 1989 is in agreement with research from other states showing that as small grains mature, forage yield increases and quality decreases.

The South Dakota trial looked at the forage yield and quality of seven spring oat varieties and a spring triticale variety currently recommended for grain production in the state.

Fertilizer was not used in either year of the study. Small grains were seeded both years at 2 bushels per acre. Forage was harvested at two maturity stages, the late-boot and early-soft dough.

### OATS

Significant forage yield differences were apparent among oat varieties (see table), but none of the seven oats varieties was superior in both yield and quality.

Maturity dramatically changed these measurements, however.

### TRITICALE

Triticale forage was similar in forage quality to oats, but all oat varieties produced significantly more forage than Marvel triticale. Precipitation was below normal in both years of the S.D. study, and although adequate stands of Marvel were established, it didn't seem to tolerate dry conditions as well as oats. Marvel may not be adapted to drought; it might perform better under more normal rainfall.

There also may be some palatability problems with triticale harvested at a late-maturity stage. To avoid potential livestock feeding problems, harvest triticale before it heads.

Further research is needed before Marvel triticale can be recommended as a viable small grain forage crop for S.D. Presently, you are advised to limit acreages of triticale for forage.

### HIGHER QUALITY VS. HIGHER YIELD

The kind of livestock you're feeding will most likely determine if you want higher quality forage or higher yielding forage. If your livestock have high nutritional needs and forage is an important part of the ration, it's critical for best quality to harvest at an early maturity stage. But, if your livestock have lower nutritional needs and you want to increase forage tonnage, simply delay harvest.

Table 1. Forage yield, crude protein, neutral detergent fiber (NDF), and acid detergent fiber (ADF) contents of seven spring oat varieties and a spring triticale. All values are averages of two years.

Variety	Yield		Crude protein		NDF		ADF	
	Late boot	Early dough	Late boot	Early dough	Late boot	Early dough	Late boot	Early dough
	---lb/Ac---		-----% dry wt.-----					
Wright	1863	2637	14.8	12.0	54.0	59.1	29.6	32.7
Burnett	1995	2789	13.4	12.2	56.1	57.7	30.2	31.6
Steele	1711	2481	15.1	11.4	50.4	58.8	26.6	32.4
Proat	1854	2905	14.9	11.6	51.2	58.5	27.8	32.0
Sandy	1792	2329	14.1	12.1	52.1	57.0	28.3	31.8
Kelly	2288	2784	12.8	11.9	57.2	59.3	31.4	33.1
Hytest	2294	2845	13.4	11.3	56.6	57.8	30.8	32.5
Marvel	1132	1552	16.6	11.8	55.5	58.5	28.1	30.5
LSD (0.05)	550	710		1.0		1.9		1.6

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