



Triticale's characteristic nodding head is a durum-rye type. Head size normally is larger than either durum or rye, but the plant puts out fewer productive tillers. The Plant Science Department, University of Manitoba, recommends a seeding rate of 168 lbs. per acre.

## THE PRESENT AGRONOMIC STATUS OF TRITICALE

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Triticale is a man-derived new species resulting from crosses between durum wheat and rye. The first intensive program in North America to obtain a possible commercial product from this new species was started at the University of Manitoba about 10 years ago. Considerable publicity has been given to the potential commercial utilization of this "man-made" crop. Other public and private development programs have been started since the initial effort by the University of Manitoba.

Triticale does not compare favorably with bread wheat in either milling or baking characteristics. It is considered as a possible feed grain with perhaps some commercial use in breakfast cereals,

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distilling, and brewing. No market has been established for this potential crop and the farmer must consider it only as a feed grain for his own use at the present time.

Its feeding value for livestock has not shown any advantage over wheat-barley mixtures. Because of an ergot problem in the varieties now grown, its feeding value is not clearly established. The triticale lines averaged about 0.2% ergot in the cooperative trial at Fargo in 1969, which is above the feeding tolerance level of 0.1%. Feeding trials with triticales are being continued by the NDSU Animal Science Department at Fargo and the Dickinson Experiment Station. The results of the feeding trials completed at Dickinson, as well as additional agronomic data, are available in the Twentieth Annual Livestock Research Roundup and Twenty-Year Summary, December, 1969, Dickinson Agricultural Experiment Station.

**Table 1. Agronomic comparisons of the performance of triticale lines with oats and barley, 1967 to 1969.**

Comparison	Western Location Williston, N. Dak.				Eastern Location (Fargo, N. Dak.)			
	Lodging	Plant height	Date headed	% Yield <sup>2</sup>	Lodging	Plant height	Date headed	% Yield <sup>2</sup>
	<b>1967</b>				<b>1967</b>			
Best triticale compared to oats	None	1" shorter	3 days earlier	61.2	None	Same	3 days earlier	50.0
Best triticale compared to barley	None	Same	Same	55.4	None	Same	5 days later	54.8
Average of all triticales vs. feed grains	—	—	—	47.8	—	—	—	46.4
	<b>1968</b>				<b>1968</b>			
Best triticale compared to oats	Less	Same	1 day earlier	82.0	None	8" shorter	3 days earlier	58.0
Best triticale compared to barley	Less	Same	3 days later	69.3	None	1" taller	4 days later	81.3
Average of all triticales vs. feed grains	—	—	—	70.2	—	—	—	58.2
	<b>1969</b>				<b>1969</b>			
Best triticale compared to oats	5% Less	3" taller	Same	76.5	Less	4" taller	2 days later	<sup>1</sup>
Best triticale compared to barley	5% More	10" taller	4 days later	84.6	Less	6" taller	10 days later	80.2
Average of all triticales vs. feed grains	—	—	—	70.7	—	—	—	69.5

<sup>1</sup>Harvesting of oats in Fargo, 1969, was delayed past optimum time.

<sup>2</sup>Percentage is on a lbs./acre basis.

Triticale has been tested by the Department of Agronomy at NDSU since 1967 in cooperation with the Plant Science Department of the University of Manitoba. In 1969, five triticale lines from the Jenkin's Foundation also were included in these trials. Relatively late seeding dates at Fargo in 1967 and 1968 possibly reduced the yields of triticale to a greater extent than the other feed grains. The other trials were planted at optimum times.

We do not expect triticales to compete for acreage with either hard red spring or durum wheat in the next few years as a cash crop. It is more likely to compete with oats and feed barley as a home grown feed crop. The comparative performance of triticales with oats and barley at western and eastern locations in North Dakota is presented in Table 1. The best triticale lines in each test are compared against oats and barley as well

as the average of the triticale lines with the average of oats and barley.

The average yields in pounds per acre of wheat, oats, barley and the best performing triticale line are presented in Table 2. The data from 1969 indicate that the best performing lines of triticale were from the Jenkin's Foundation, and were taller and later than the lines from the University of Manitoba. All the triticale lines to date have yielded at least 15 to 25 per cent less than oats or barley.

A triticale line called Rosner from Plant Science Department, University of Manitoba, Winnipeg, has been licensed in Canada, and some seed companies are selling seed of varieties developed by the Jenkin's Foundation. No triticale varieties will be recommended for North Dakota until varieties which are ergot-free and more competitive for yield are developed.

**Table 2. Average yield (pounds/acre) of Manitou wheat, Harmon oats, Conquest barley, and the best yielding triticale lines grown in North Dakota, 1967 to 1969.**

	Fargo				Williston				Minot
	1967	1968	1969	Average	1967	1968	1969	Average	1969
Manitou wheat	2386	1753	1989	2041	1230	1623	1822	1557	2874
Harmon oats	3711	2963	<sup>1</sup>	3371 <sup>2</sup>	1302	1703	3033	2011	3484
Conquest barley	3392	2115	3437	2978	1439	2021	2742	2065	2625
Best triticale	1942	1721	2753 <sup>3</sup>	2137	798	1402	2322 <sup>3</sup>	1505	3399 <sup>3</sup>
Average of triticales	1647	1479	2381	1834	656	1308	2029	1330	2962

<sup>1</sup>Harvesting of oats in Fargo, 1969, was delayed past optimum time.

<sup>2</sup>Two-year average for oats yield.

<sup>3</sup>Best yielding triticale line is from the Jenkin's Foundation in 1969.