



# Cooperative Extension Service

NORTH DAKOTA STATE UNIVERSITY - FARGO, NORTH DAKOTA 58102  
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CIRCULAR  
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# North Dakota GRAIN VARIETIES 1978

NORTH DAKOTA  
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THE RELATIVE PERFORMANCE of crop varieties in any year is influenced by the season's growing conditions. Growing seasons vary in temperature and rainfall as well as in the prevalence of rust and other diseases. Crop varieties vary in yield, resistance to high temperatures and drouth, resistance to diseases and insects, and in several other characteristics.

Early maturity is an advantage some years but a disadvantage in others. In general, the later maturing varieties do best in the northern part of the state where ripening temperatures usually are more moderate.

Rust on all crops and pasmo on flax are expected most often in eastern North Dakota where rainfall and humidity generally are higher. It is also a greater threat in western North Dakota as winter wheat acreage moves north. Leaf diseases, head blights, and root rots are more prevalent in southeastern and eastern North Dakota, while smut and ergot can be statewide.

Statements about rust and other diseases in this circular are based on variety reaction to races known to be present and to which the variety has been tested. Each crop year brings the possibility of new races of rust and other disease outbreaks to which varieties may not be resistant.

No one can predict with accuracy the kind of growing season to expect next year. Therefore, choose varieties with characteristics best able to meet the crop hazards most likely to occur in your area.

In this circular variety recommendations are made for each crop based on yield performance, disease resistance, agronomic characteristics and adaptability shown by Experiment Station results. The tables describe all recommended varieties, plus others on which information may be desired.

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# HARD RED SPRING WHEAT

North Dakota wheat growers should give major consideration to milling and baking quality when selecting varieties for commercial production in order to maintain their reputation as a source of high quality wheat for both domestic and export markets. The importance of quality becomes more important in a surplus market. Past performance of a variety in the local area should be carefully considered in variety selection.

This classification of varieties does not imply that all varieties included in any group are equal in all respects. Refer to the description chart for variety characteristics.

Varities recommended for commercial production having satisfactory agronomic characteristics and having traditionally acceptable high quality for domestic and export markets:

Waldron and Ellar

Varities recommended but with marginal quality and/or agronomic deficiencies for production. These varieties have demonstrated variable quality and/or deficiencies of quality; for example, low protein, dough mixing characteristics, low loaf volume, etc. Some of these varieties have agronomic deficiencies while others may have agronomic advantages under favorable conditions:

Olaf, W.S. 1809, Bounty 208, Nowesta, Kitt, Sinton and Butte. For sawfly areas only - Lew and Tioga

Varities not recommended due to limited tests, agronomic deficiencies and/or poor quality:

Lark, Era, Glenlea, Profit 75, Protor, Prodx, Wared, W.S. 25 and Newana

## VARIETY DESCRIPTIONS

VARIETY	ORIGIN <sup>1/</sup>	YIELD % OF AVG. (2 YRS.) <sup>2/</sup>			BEARDS	HEIGHT	STRENGTH OF STRAW	MATURITY	REACTION TO			QUALITY FACTORS		REMARKS
		E	C	W					STEM RUST <sup>2/</sup>	LEAF RUST <sup>2/</sup>	TEST WT.	WHEAT PROTEIN	QUALITY RATING <sup>3/ 5/</sup>	
Justin	N.Dak.	87	—	—	no	med.	strong	med.late	R <sup>4/</sup>	MS	avg.	high	satis.	Ergot suscept.
Chris	Minn.	—	89	88	no	med.	weak	med.	R <sup>4/</sup>	MR	avg.	avg.	satis.	Weak straw
Polk	Minn.	—	—	—	yes	med.	m.strong	med.	R <sup>4/</sup>	R	high	avg.	satis.	Shatters
Waldron	N.Dak.	87	91	90	no	med.	strong	m.early	R	MR	avg.	high	satis.	Ergot suscept.
Ellar	N.Dak.	91	90	89	no	med.	strong	m.early	MR	MR	avg.	high	satis.	
Tioga	N.Dak.	—	—	—	no	med.	m.strong	med.	S	S	avg.	high	satis.	Sawfly & black chaff resist.
Manitou	Canada	—	—	—	no	med.	m.strong	med.	R	S	avg.	avg.	margin.	Leaf rust
Fortuna	N.Dak.	—	—	—	no	med.	weak	m.early	R <sup>4/</sup>	MS	avg.	low	margin.	Sawfly resist. Suscept. to black chaff
Bonanza	P.R.	—	—	—	yes	s.dwf.	strong	m.early	R <sup>4/</sup>	R	low	low	margin.	
W.S. 1809	P.R.N.D.	—	—	—	no	s.dwf.	strong	early	R <sup>4/</sup>	MR	avg.	low	margin.	
Bounty 208	P.R.	—	—	—	yes	s.dwf.	strong	early	R <sup>4/</sup>	MR	high	low	margin.	
Nordak	P.R.N.D.	—	—	—	yes	tall	m.strong	m.early	R <sup>4/</sup>	MR	high	avg.	margin.	Suscept. loose smut
Olaf	N.Dak.	99	96	99	yes	s.dwf.	strong	m.early	R	R	avg.	avg.	margin.	
Nowesta	P.R.N.D.	—	—	—	yes	med.	strong	m.early	R	MS	avg.	avg.	margin.	
Kitt	Minn.	102	111	85	yes	s.dwf.	strong	med.	R	R	low	avg.	margin.	
Sinton	Canada	—	—	87	yes	med.	strong	med.	R	MR	avg.	avg.	margin.	
Lew	Mont.	—	—	100	no	med.	m.strong	med.	R <sup>4/</sup>	MR	high	avg.	margin.	
Butte	N.Dak.	105	101	92	yes	med.	m.strong	early	R	R	high	low	margin.	
Neepawa	Canada	—	—	—	no	med.	strong	m.early	R	S	avg.	avg.	unsatis.	Not recommended
Era	Minn.	109	109	117	yes	s.dwf.	strong	late	R	MR	avg.	low	unsatis.	Not recommended
Lark	P.R.N.D.	—	—	—	yes	s.dwf.	strong	early	R <sup>4/</sup>	R	high	low	unsatis.	Not recommended
Glenlea	Canada	—	—	—	no	med.	strong	med.	R	R	avg.	low	unsatis.	Utility wheat
Norana	Mont.	—	—	—	yes	s.dwf.	strong	med.	R <sup>4/</sup>	S	avg.	low	unsatis.	Leaf rust
Protor	P.R.N.D.	98	104	110	yes	s.dwf.	strong	m.early	R	MR	high	avg.	unsatis.	Not recommended
Wared	Wash.	105	107	115	yes	s.dwf.	strong	late	R <sup>4/</sup>	R	avg.	low	unsatis.	Not recommended
Prodx	P.R.N.D.	110	100	109	yes	s.dwf.	strong	med.	MR	MR	low	low	unsatis.	Not recommended
Profit 75	P.R.N.D.	103	101	100	yes	s.dwf.	strong	m.early	R	R	avg.	low	unsatis.	Not recommended
Newana	Mont.	—	—	111	yes	s.dwf.	strong	med.	R	S	avg.	low	unsatis.	Not recommended
W.S. 25	P.R.N.D.	104	—	107	yes	s.dwf.	strong	m.early	R	R	avg.	low	unsatis.	Not recommended

<sup>1/</sup> P.R. refers to private release.

<sup>2/</sup> R=resistant; S=susceptible; MS=moderately susceptible; MR=moderately resistant; first reaction is predominant.

<sup>3/</sup> Satis.=satisfactory; unsatis.=unsatisfactory; marg.=marginal.

<sup>4/</sup> Occasionally mixed with some susceptible plants.

<sup>5/</sup> Tests conducted by Cereal Chemistry & Technology.

<sup>6/</sup> E=Fargo, Langdon; C=Carrington, Minot; W=Williston, Dickinson.

# DURUM

Varities recommended for commercial production:

Statewide: Ward, Rolette, Wakooma, Botno, Rugby, Crosby, Cando\*, and Coulter

Varities not recommended due to limited tests or agronomic deficiencies:

Wascana, Hercules, Macoun, Leeds, and WMB100

\*Cando appears to perform best where soil moisture availability and weed control is very favorable.

## VARIETY DESCRIPTIONS

VARIETY	ORIGIN	YIELD % OF AVG. (2 YRS.) <sup>3/</sup>			BEARDS	HEIGHT	STRENGTH OF STRAW	MATURITY	REACTION TO			NORMAL CROP <sup>2/</sup>		REMARKS
		E	C	W					STEM RUST <sup>1/</sup>	LEAF RUST <sup>1/</sup>	TEST WT.	KERNEL SIZE	OVERALL QUALITY	
Wells	N.D.	—	98	97	yes	med.	m.strong	m.early	R	R	avg.	sm.	satis.	
Leeds	N.D.	—	—	—	yes	med.	strong	m.early	R	R	high	large	satis.	Weak seedlings
Rolette	N.D.	92	97	100	yes	med.	v.strong	early	R	MS	high	large	satis.	
Ward	N.D.	99	99	98	yes	med.	v.strong	m.early	R	R	avg.	med.	satis.	High yield
Wakooma	Canada	99	103	105	yes	med.	weak	med.	MR	MS	low	large	satis.	
Crosby	N.D.	105	102	92	yes	med.	strong	m.early	R	R	avg.	med.	satis.	High yield
Botno	N.D.	97	94	98	yes	med.	v.strong	early	R	MS	avg.	med.	satis.	High yield
Rugby	N.D.	103	104	97	yes	med.	v.strong	m.early	R	R	avg.	med.	satis.	High yield
Macoun	Canada	—	—	—	yes	med.	strong	m.early	MR	MS	avg.	large	satis.	
Cando	N.D.	105	103	112	yes	s.dwf.	v.strong	m.early	R	MS	avg.	sm.	satis.	High yield
Coulter	Canada	—	—	—	yes	med.	v.strong	m.early	R	MS	avg.	large	satis.	

<sup>1/</sup> R=resistant; MR=moderately resistant; MS=moderately susceptible. <sup>2/</sup> Avg.=average; sm.=small; med.=medium; satis.=satisfactory. <sup>3/</sup> E=Fargo, Langdon; C=Carrington, Minot; W=Williston, Dickinson



# WINTER WHEAT

The varieties listed as having good or very good winter hardiness are more reliable and generally have good yield capacity. In relatively mild years, the varieties with fair winter hardiness will perform well.

VARIETY DESCRIPTIONS

VARIETY	ORIGIN	YEAR RELEASED	REACTION TO		MATURITY	STRAW STRENGTH	HEIGHT	WINTER** HARDINESS
			LEAF RUST	STEM RUST				
Roughrider	N.Dak.	1975	S	R	Medium	Strong	Medium	Very good
Froid	Mont.	1968	S	R	Late	Weak	Tall	Very good
Sundance	Can.	1971	S	S	V.late	Weak	Tall	Very good
Winalta	Can.	1961	S	MS	Medium	Medium	Medium	Good
Winoka	S.Dak.	1969	S	R	Medium	Medium	Medium	Good
Bronze	S.Dak.	1972	MS	R	Medium	Medium	Medium	Good
Eklund	P.R.	1976	S	S	Late	Medium	Tall	Good
Centurk	Nebr.	1971	MS	R	Early	Strong	Short	Fair
Lancer	Nebr.	1963	S	R	Early	Strong	Short	Fair
Gent	S.Dak.	1974	MR	R	Early	Strong	Short	Fair
Agate	Nebr.	1976	S	R	Early	Strong	Short	Fair

# BARLEY

MALTING OR FEED: Beacon, Larker, Bonanza and Manker

Market malting varieties as pure one-variety carlots. Varieties grading blue malting barley or 2-rowed varieties with acceptable quality have a limited market outlet as a premium crop.

FEED: Statewide: Dickson and Nordic  
Western areas only: Vanguard, Shabet and Hector

The 2-rowed varieties should be grown only in western North Dakota because of susceptibility to disease.

NOTE: Dickson, Nordic and Beacon have resistance to leaf diseases which cause yield losses in some years, especially in the eastern part of the state. Nordic has superior resistance to Septoria. Beacon and Bonanza are resistant to loose smut.

VARIETY DESCRIPTIONS

VARIETY	ORIGIN	WHEN RE-LEASED	AWN TYPE <sup>1/</sup>	ALEURONE COLOR	HEIGHT	STRAW STRENGTH	REL. MATURITY	REL. YIELD	REACTION TO <sup>2/</sup>			QUALITY <sup>3/</sup>
									STEM RUST	LOOSE SMUT	LEAF DISEASES	
<b>6-row</b>												
Larker	N.D.	1961	S	white	med.	med.	m.early	good	R	S	MS	M or F
Bonanza	Canada	1970	S	blue	m.tall	strong	med.	v.good	R	R	MS	M or F
Beacon	N.D.	1973	R	white	med.	strong	early	good	R	R	MR	M or F
Manker	Minn.	1974	R	white	med.	m.strong	early	good	R	S	MR	M or F
<b>Dickson</b>												
Dickson	N.D.	1964	R	white	med.	med.	med.	v.good	R	S	MR	F
<b>Nordic</b>												
Nordic	N.D.	1971	R	white	med.	med.	med.	v.good	R	S	MR	F
<b>Klondike</b>												
Klondike	Canada	1976	S	white	med.	m.strong	med.	good	R	R	MS	F
<b>2-row</b>												
<b>Shabet</b>												
Shabet	Mont.	1971	R	white	med.	m.weak	m.late	good	S	S	S	F <sup>4/</sup>
<b>Vanguard</b>												
Vanguard	Wash.	1971	R	white	med.	med.	m.late	good	S	S	S	F <sup>4/</sup>
<b>Klages</b>												
Klages	Idaho	1973	R	white	med.	m.strong	late	good	S	S	S	F <sup>4/</sup>
<b>Fergus</b>												
Fergus	Canada	1968	R	white	med.	med.	m.late	good	S	S	S	F
<b>Hector</b>												
Hector	Canada	1973	R	white	med.	m.weak	m.late	good	MR	S	MS	F
<b>Summit</b>												
Summit	P.R.	1976	R	white	med.	m.strong	m.late	good	S	S	MS	F

<sup>1/</sup> R=rough or smooth awned.  
<sup>2/</sup> R=resistant, S=susceptible, M=moderately.

<sup>3/</sup> M=malting, F=feed, NC=not classified for malting due to limited testing.  
<sup>4/</sup> May be acceptable for malting if grown under irrigation or a favorable environment.

# OATS

For southeastern and east-central counties where hazards of rust and high early summer temperatures are greatest:

Early: Nodaway 70 and Spear  
Medium: Kota  
Late: Sioux, Kelsey, Lodi, Russell, Garry, Hannon, Froker, Random

For south-central and western counties where rust hazards are less:

Medium: Kota and Burnett  
Late: Sioux, Kelsey, Lodi, Russell, Cayuse, Garry, Hannon, Random, Froker

For northeastern and north-central counties, later ripening varieties yield best:

Late: Sioux, Kelsey, Lodi, Russell, Cayuse, Garry, Hannon, Random, Froker  
Medium: Kota and Burnett

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# OATS con't

Hay or silage - tall late maturing varieties such as Kelsey, Garry or Lodi.  
Early hay for wild oats control and late seeding - Burnett or Otter.

Races of rust are present in U. S. to which no varieties are resistant.

## VARIETY DESCRIPTIONS

VARIETIES LISTED IN ORDER OF MATURITY	ORIGIN	WHEN RELEASED	COLOR GRAIN	HEIGHT	STRAW STRENGTH	MATURITY <sup>3/</sup>	RESISTANCE TO STEM RUST <sup>1/</sup>		CROWN RUST	YIELD <sup>2/</sup>	BU. WT.
							RACES	RACES			
Nodayway 70	Mo.	1969	white	short	good	E	S		MS	fair <sup>2/</sup>	good
Lang <sup>4/</sup>	Ill.	1976	yellow	short	strong	E	S		S	good	fair
Spear	S.D.	1974	white	short	m.strong	E	S		MR	good	good
Burnett	Iowa	1956	yel-white	short	strong	M	S		MS	good	good
Holden	Wisc.	1966	yellow	med.	strong	M	S		MS	good	good
Kota	S.D.	1969	yellow	m.tall	good	M	S		MS	v.good	v.good
Chief	S.D.	1971	yellow	med.	good	M	S		MR	fair	good
Wright	Wisc.	1975	tan	m.tall	m.strong	M	S		MR	good	good
Lyon	Minn.	1976	white	m.tall	m.strong	M	S		MR	good	good
Mariner	Mich.	1972	white	med.	strong	M	S		S	good	good
Kelsey	Can.	1967	white	m.tall	m.strong	L	S		MR	v.good	good
Russell	Can.	1960	white	m.tall	m.strong	L	S		MS	v.good	fair
Sioux	Can.	1967	white	med.	m.strong	L	S		MS	v.good	good
Froker	Wisc.	1970	yellow	m.tall	m.strong	L	S		MR	good	good
Cayuse	N.Y.	1966	yellow	short	strong	L	S		MS	v.good	fair
Garry	Can.	1952	white	tall	m.strong	L	S		MS	v.good	good
Lodi	Wisc.	1963	yellow	tall	m.strong	L	S		MR	good	good
Rodney	Can.	1953	white	tall	mod.	L	S		MS	good	good
Harmon	Can.	1965	white	tall	mod.	L	S		MS	good	good
Random	Can.	1971	white	short	strong	L	S		MS	good	good
Dal	Wisc.	1972	tan	med.	good	L	S		MR	fair	good
Hudson	Can.	1974	white	med.	strong	L	MR		MR	v.good	fair
Otana	Mont.	1977	white	m.tall	m.strong	M	S		S	v.good	v.good

1/ Stem rust races most prevalent now. 2/ Good in S.E. and E. Central North Dakota. 3/ E=early, M=medium, L=late. 4/ Excellent barley yellow dwarf tolerance.

# FLAX

Only rust resistant varieties should be sown. Early seeding will increase yield per acre.

Culbert, Linott, and Dufferin are resistant to the new races of rust and yield well.  
Foster and Raja are also resistant to rust but are generally low yielding.

## VARIETY DESCRIPTIONS

VARIETY	ORIGIN	WHEN RELEASED	RELATIVE MATURITY	COLOR		SEED SIZE	PLANT HEIGHT	RESISTANCE TO DISEASE		YIELD ABILITY	OIL YIELD	OIL QUALITY
				FLOWER	SEED			WILT	RUST			
Raja	Can.	1954	early	bl.	br.	large	short	MS	R	low	---	---
Summit	S.D.	1964	early	bl.	br.	med.	med.	R	VS	v.good	fair	good
Linott	Can.	1966	early	bl.	br.	small	med.	MS	R	v.good	good	good
Foster <sup>1/</sup>	N.D.	1969	late	bl.	yel.	small	short	MR	R	good	v.good	good
Norstar	Minn.	1969	late	bl.	br.	med.	med.	R	R	good	good	fair
Nored	Minn.	1968	late	bl.	br.	med.	med.	R	S	v.good	good	v.good
Culbert	Minn.	1975	early	bl.	br.	small	med.	MR	R	v.good	good	good
Dufferin	Can.	1975	late	bl.	br.	med.	med.	R	R	good	good	good

1/ Foster is permitted a tolerance of 2 per thousand brown seeds and white flowers for certification.