



Cooperative Extension Service

NORTH DAKOTA STATE UNIVERSITY - FARGO, NORTH DAKOTA 58102
UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING

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North Dakota GRAIN VARIETIES 1975

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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 south-

eastern 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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no. 170

H. D. WILKINS
Extension Service Agronomist
with assistance from Experiment Station Staff

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 as has been experienced in the past. 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.

Recommended Varieties for Commercial Production having satisfactory agronomic characteristics and having traditionally acceptable high quality for domestic and export markets:

Waldron, Chris, Polk, Justin and Ellar, (Fortuna and Tioga for sawfly areas only)

Varieties with marginal quality and/or agronomic deficiencies for production on a limited acreage. 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, Bonanza, Nowesta

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

Lark, Era, Glenlea

VARIETY DESCRIPTIONS

VARIETY	ORIGIN ^{1/}	YIELD % OF AVG. (3 YRS.) ^{6/}			BEARDS	HEIGHT	STRENGTH OF STRAW	MATURITY	REACTION TO		QUALITY FACTORS			REMARKS	
		E	C	W					STEM ^{2/}	LEAF ^{2/}	RUST ^{2/}	TEST WT.	WHEAT PROTEIN		QUALITY RATING ^{3/ 5/}
Waldron	N.Dak.	97	93	95	no	med.	strong	m.early	R ^{4/}	R	avg.	high	satis.	Ergot and leaf disease suscept.	
Chris	Minn.	92	93	93	no	med.	weak	med.	R ^{4/}	MR	avg.	avg.	satis.	Weak straw	
Polk	Minn.	---	---	92	yes	med.	m.strong	med.	R ^{4/}	R	high	avg.	satis.	Shatters	
Justin	N.Dak.	86	90	92	no	med.	strong	med.late	R ^{4/}	MS	avg.	high	satis.	Ergot suscept.	
Fortuna	N.Dak.	---	---	96	no	med.	weak	m.early	R	MS	avg.	low	marg.	Sawfly resist. Suscept. to black chaff	
Nordak	P.R.N.D.	---	---	---	yes	tall	m.strong	m.early	R ^{4/}	MS	high	avg.	marg.	Loose smut	
Bonanza	P.R.	102	105	105	yes	s.dwf.	strong	m.early	R ^{4/}	R	low	low	marg.		
WS 1809	P.R.N.D.	109	105	98	no	s.dwf.	strong	early	R ^{4/}	R	avg.	low	marg.		
Bounty 208	P.R.	107	108	107	yes	s.dwf.	strong	early	R ^{4/}	MR	high	low	marg.		
Manitou	Canada	87	97	95	no	med.	m.strong	med.	R	S	avg.	avg.	marg.	Leaf rust	
Canthatch	Canada	---	---	---	no	med.	med.	m.early	S	S	low	avg.	satis.	V. suscept. to leaf rust	
RR 68	P.R.N.D.	---	---	---	yes	s.dwf.	strong	early	R	R	high	low	unsatis.	Not recommended	
Neepawa	Canada	---	---	---	no	med.	strong	m.early	R	S	avg.	avg.	unsatis.	Not recommended	
Thatcher	Minn.	---	---	---	no	short	med.	m.early	S	S	avg.	low	satis.	Not recommended	
Barton	P.R.N.D.	---	---	---	yes	med.	m.strong	m.early	R ^{4/}	MS	avg.	avg.	unsatis.	Not recommended	
Empire	P.R.N.D.	---	---	---	yes	s.dwf.	strong	med.	MS	S	low	low	unsatis.	Not recommended	
Lark	P.R.N.D.	99	89	108	yes	s.dwf.	strong	early	R	MR	high	low	unsatis.	Not recommended	
Era	Minn.	116	121	125	yes	s.dwf.	strong	late	R	R	avg.	low	unsatis.	Not recommended	
Olaf	N.Dak.	110	103	105	yes	s.dwf.	strong	m.early	R	R	avg.	avg.	marg.		
Nowesta	P.R.N.D.	---	---	---	yes	med.	strong	m.early	R	R	avg.	avg.	marg.	Limited tests	
Ellar	N.Dak.	96	93	95	no	med.	strong	m.early	R	R	avg.	high	satis.		
Tioga	N.Dak.	100	103	94	no	med.	strong	m.early	R	S	avg.	high	satis.	Sawfly and black chaff resist.	
Norana	Mont.	---	---	---	yes	s.dwf.	strong	med.	R	S	avg.	---	---	Limited testing	
Glenlea	Canada	---	---	---	no	med.	strong	med.	R	S	avg.	low	unsatis.	Utility wheat	
Profit 75	P.R.N.D.	---	---	---	yes	s.dwf.	strong	m.early	R	R	---	---	---	Limited testing	

^{1/} P.R. refers to private release.

^{2/} R=resistant; S=susceptible; MS=moderately susceptible; MR=moderately resistant.

^{3/} Avg.=average; satis.=satisfactory; unsatis.=unsatisfactory; marg.=marginal; infer.=inferior.

^{4/} Occasionally mixed with some susceptible plants.

^{5/} Tests conducted by Cereal Chemistry.

^{6/} E=Fargo, Langdon, Carrington; C=Minot, Carrington; W=Dickinson, Williston, Minot.

Durum

Recommended varieties for commercial production:

Statewide: Ward, Rolette, Leeds, Wells, (Botno, Rugby, Crosby) limited seed.

Varieties not recommended due to limited tests or agronomic deficiencies:

Wascana, Wakooma and Hercules

VARIETY DESCRIPTIONS

VARIETY	ORIGIN	YEAR RE-LEASED	BEARDS	HEIGHT	STRAW STRENGTH	MATURITY	REACTION TO		NORMAL CROP ^{2/}			REMARKS
							STEM ^{1/}	LEAF ^{1/}	TEST WT.	KERNEL SIZE	OVERALL QUALITY	
Crosby	N.D.	1973	yes	med.	strong	m.early	R	R	avg.	med.	satis.	High yield
Botno	N.D.	1973	yes	med.	v.strong	early	R	MS	avg.	med.	satis.	High yield
Rugby	N.D.	1973	yes	med.	v.strong	m.early	R	R	avg.	med.	satis.	High yield
Ward	N.D.	1972	yes	med.	v.strong	m.early	R	R	avg.	med.	satis.	High yield
Rolette	N.D.	1971	yes	med.	v.strong	early	R	MS	high	large	satis.	Early maturity
Leeds	N.D.	1966	yes	med.	strong	m.early	R	R	high	large	satis.	Weak seedlings
Wells	N.D.	1960	yes	med.	m.strong	m.early	R	R	avg.	sm.	satis.	
Wakooma	Canada	1972	yes	med.	weak	m.early	MR	MS	low		satis.	Suscept. to leaf diseases
Macoun	Canada	1973	yes	med.	strong	m.early	R	MS	avg.		satis.	Suscept. to leaf diseases
Hercules	Canada	1969	yes	med.	strong	early	R	MS	high	large	satis.	Suscept. to leaf diseases
Lakota	N.D.	1960	yes	med.	m.strong	m.early	R	R	avg.	small	satis.	Low test weight

^{1/} R=resistant; MR=moderately resistant; MS=moderately susceptible

^{2/} Avg.=average; sm.=small; satis.=satisfactory.

Barley

Malting or Feed: Dickson, Larker, Beacon, Conquest and Bonanza.

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

Feed: Statewide: Primus II, Cree, Burk, Nordic and Prilar.

Western areas only: Steptoe, Fergus, Piroline, Shabet and Vanguard.

The 2-rowed varieties should be grown only in western North Dakota because of susceptibility to stem rust and leaf diseases.

NOTE: All barley varieties except Dickson, Nordic and Beacon are susceptible 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, Conquest, Keystone, and Bonanza are resistant to loose smut.

VARIETY DESCRIPTIONS

VARIETY	ORIGIN	WHEN RE-LEASED	HEAD TYPE ^{1/}	AWN TYPE ^{2/}	ALEURONE COLOR	HEIGHT	STRAW STRENGTH	REL. MATURITY	REL. YIELD	REACTION TO ^{3/}			QUALITY ^{4/}
										STEM RUST	LOOSE SMUT	LEAF DISEASES	
Dickson	N.D.	1964	6	R	white	med.	med.	med.	v.good	R	S	MR	M or F
Larker	N.D.	1961	6	S	white	med.	med.	m.early	good	R	S	MS	M or F
Conquest	Canada	1965	6	S	blue	m.tall	strong	m.early	good	R	R	MS	M or F
Primus II	S.D.	1966	6	S	white	med.	med.	early	fair	R	S	MS	F
Paragon	Canada	1968	6	S	blue	med.	med.	m.late	good	R	R	MS	F
Nordic	N.D.	1971	6	R	white	med.	med.	med.	v.good	R	S	MR	F
Bonanza	Canada	1970	6	S	blue	m.tall	med.	med.	good	R	R	MS	M or F
Cree	Minn.	1971	6	R	white	med.	med.	m.early	v.good	R	R	MS	F
Prilar	S.Dak.	1971	6	S	white	med.	med.	m.early	good	R	S	MS	F
Fergus	Canada	1968	2	R	white	med.	med.	m.late	good	S	S	S	F
Herta	Sweden	---	2	R	white	med.	m.weak	late	fair	S	S	S	F
Piroline	Germany	---	2	R	white	med.	med.	m.late	good	S	S	S	F ^{5/}
Shabet	Mont.	1971	2	R	white	med.	m.weak	m.late	good	S	S	S	F ^{5/}
Vanguard	Wash.	1971	2	R	white	med.	med.	m.late	good	S	S	S	F ^{5/}
Burk	Wisc.	1971	6	S	white	m.tall	med.	med.	good	R	S	MR	F
Beacon	N.D.	1973	6	R	white	med.	strong	early	good	R	R	MR	M or F
Steptoe	Wash.	1972	6	R	white	m.short	med.	m.early	v.good ^{6/}	S	--	S	F (low protein)
Hector	Canada	1973	2	R	white	med.	m.weak	m.late	good	S	S	MS	NC
Manker	Minn.	1974	6	R	white	med.	m.strong	m.early	good	R	S	MR	NC

^{1/} 6-rowed or 2-rowed.

^{2/} Rough or smooth awned.

^{3/} R=resistant, S=susceptible, M=moderately.

^{4/} M=malting, F=feed, NC=not classified for malting due to limited testing.

^{5/} May be acceptable for malting if grown under irrigation or a favorable environment.

^{6/} Yields well only in western North Dakota.

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	REACTION TO		MATURITY	STRAW STRENGTH	HEIGHT	WINTER-HARDINESS	HARDINESS ^{1/} GROUP
			LEAF RUST	STEM RUST					
Froid	Mont.	1968	S	R	Late	Weak	Tall	Very good	A
Minter	Minn.	1948	S	MS	Late	Weak	Tall	Very good	A
Sundance	Can.	1971	S	S	V.late	Weak	Tall	Very good	A
Hume	S.Dak.	1965	S	R	Medium	Strong	Medium	Good	B
Winalta	Can.	1961	S	MS	Medium	Medium	Medium	Good	B
Winoka	S.Dak.	1969	S	R	Medium	Medium	Medium	Good	B
Bronze	S.Dak.	1972	MS	R	Medium	Medium	Medium	Good	B
Trapper	Nebr.	1968	S	R	Medium	Medium	Medium	Fair	C
Centurk	Nebr.	1971	MS	R	Early	Strong	Short	Fair	C
Lancer	Nebr.	1963	S	R	Early	Strong	Short	Fair	C

^{1/} A=high winterhardness; B=intermediate winterhardness; C=low winterhardness.

Oats

For southeastern and eastcentral counties where hazards of rust and high early summer temperatures are greatest:

EARLY: Dawn, Wyndmere, Nodaway 70

MEDIUM: Kota, Otter

LATE: Sioux, Kelsey, Lodi, Russell, Cayuse, Garry, Harmon, Froker, Random

For southcentral and western counties where rust hazards are less:

MEDIUM: Kota, Otter, Burnett

LATE: Sioux, Kelsey, Lodi, Russell, Cayuse, Garry, Harmon, Random, Froker

For northeastern and northcentral counties, later ripening varieties yield best:

LATE: Sioux, Kelsey, Lodi, Russell, Cayuse, Garry, Harmon, Random, Froker

MEDIUM: Kota, Otter, Burnett

Hay or silage - tall late maturing varieties such as Kelsey, Garry or Lodi.

Early hay for wild oats control and late seeding - Dawn, Burnett or Otter.

VARIETY DESCRIPTIONS

VARIETIES LISTED IN ORDER OF MATURITY	ORIGIN	YEAR RELEASED	COLOR GRAIN	MATURITY ^{3/}	HEIGHT	STRAW STRENGTH	REACTION TO ^{1/}		YIELD	BU. WT.	PROTEIN
							CROWN RUST				
Nodaway 70	Mo.	1969	white	E	short	good	MS		fair ^{2/}	good	H
Dawn	N.D.	1966	yellow	E	tall	good	MR		fair ^{2/}	v.good	L
Wyndmere	N.D.	1966	white	E	m.tall	good	MS		fair ^{2/}	good	M
Grundy	Iowa	1972	yellow	E	short	good	MS		fair	good	M
Burnett	Iowa	1956	yel-white	M	short	strong	MS		good	good	H
Chief	S.D.	1971	yellow	M	med.	good	MR		fair	good	M
Otter	Minn.	1970	white	M	short	good	MS		good	fair	H
Holden	Wisc.	1966	yellow	M	med.	strong	MS		good	good	H
Portal	Wisc.	1966	yellow	M	m.tall	strong	MR		good	good	H
Kota	S.D.	1969	yellow	M	m.tall	good	MS		v.good	v.good	H
Kelsey	Can.	1967	white	L	m.tall	m.strong	MR		v.good	good	L
Russell	Can.	1960	white	L	m.tall	m.strong	MS		v.good	fair	L
Sioux	Can.	1967	white	L	med.	m.strong	MS		v.good	good	L
Dal	Wisc.	1972	yellow	L	med.	good	MR		fair ^{2/}	good	L
Froker	Wisc.	1970	yellow	L	m.tall	m.strong	MR		good	good	H
Cayuse	N.Y.	1966	yellow	L	short	strong	MS		v.good	fair	L
Garry	Can.	1952	white	L	tall	m.strong	MS		v.good	good	M
Lodi	Wisc.	1963	yellow	L	tall	m.strong	MR		good	good	L
Rodney	Can.	1953	white	L	tall	mod.	MS		good	good	--
Harmon	Can.	1965	white	L	tall	mod.	MS		good	good	L
Random	Can.	1971	white	L	short	strong	MS		good	good	L

1/ Races of rust are present in U.S. to which no varieties are resistant. 2/ Good in S. E. and E. Central North Dakota. 3/ E=early, M=medium, L=late.

Flax

New races of flax rust are present. Only rust resistant varieties should be sown. Early seeding will increase yield per acre.

Linnot, Foster and Raja are resistant to the new races of rust.

Summit is extremely susceptible to rust and should not be planted.

Bolley and Windom are susceptible to rust.

The remaining varieties range from moderately susceptible to moderately resistant to rust in the adult stage.

Foster and Raja 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	---	---
Linnot	Can.	1966	early	bl.	br.	small	med.	MS	R	v.good	good	good
Noralta	Can.	1965	early	bl.	br.	small	med.	MR	MS	good	fair	fair
Bolley	N.D. ^{1/}	1957	early	bl.	br.	med.	med.	MR	S	good	v.good	v.good
Windom	Minn.	1962	early	bl.	br.	med.sm.	med.	MR	S	v.good	fair	v.good
Summit	S.D.	1964	early	bl.	br.	med.	med.	R	VS	v.good	fair	good
Redwood	Minn.	1951	med.late	bl.	br.	med.	med.	R	S	v.good	good	good
Norstar	Minn.	1969	late	bl.	br.	med.	med.	R	MR	good	good	fair
Foster ^{2/}	N.D.	1969	late	bl.	yel.	small	short	MR	R	good	v.good	good
B 5128	N.D.	1943	late	bl.	br.	large	med.	MR	MS	good	good	fair
Nored	Minn.	1968	late	bl.	br.	med.	med.	R	MS	v.good	good	v.good

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