

# CROP VARIETY CHARACTERISTICS and RECOMMENDATIONS

for North Dakota -- 1959

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LIBRARY

The relative performance of crop varieties in any one 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 in other characteristics.

Early maturity is an advantage in some years but may be a disadvantage in others. In general, the later maturing varieties can be expected to 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 are generally higher. Leaf and head blights, and root rots, are more prevalent in southeastern North Dakota, while smut can be statewide.

Statements made on 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 disease outbreaks to which present varieties may not be resistant.

No one can predict with any degree of accuracy the kind of growing season to expect next year. Growers should, therefore, choose varieties with characteristics best able to meet the crop hazards which experience has shown are most likely to occur in their areas.

**NDAG** Extension Service, Fargo

NORTH DAKOTA AGRICULTURAL COLLEGE

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## HARD RED SPRING WHEAT - BRIEF DESCRIPTION OF VARIETIES AVAILABLE FOR 1959 PLANTING

Variety	Origin	When released	Beards	Height	Strength of Straw	Maturity	Resistance to:				Rel. Yld. <sup>3/</sup>	Remarks
							Stem rust <sup>1/</sup>	Leaf rust <sup>2/</sup>	Loose smut	Bunt		
Mida	N.Dak.	1944	yes	tall	strong	med.early	poor	poor	poor	good	good	Lacks resistance to 15B
Thatcher	Minn.	1934	no	short	strong	med.early	poor	v.poor	good	poor	good	Lacks resistance to 15B
Rushmore	S.Dak.	1949	no	short	strong	med.early	poor	poor	good	good	fair	Lacks resistance to 15B
Rescue	Canada	1945	no	short	weak	med.late	poor	poor	mod.	poor	low	Not high in yield
Chinook	Canada	1952	no	med.	weak	med.early	poor	poor	poor	poor	low	Flour quality above Rescue
Lee	Minn.	1951	yes	med.	med.	med.early	fair	good	poor	fair	good	Some tolerance to 15B
Selkirk	Canada	1954	no	short	med.	med.early	good	good	good	good	good	Not immune from rust
Conley	N.Dak.	1955	yes	med.tall	med.	med.late	good	mod.	good	good	good	Suscept. to "black chaff"

<sup>1/</sup> Reference to races prevalent since 1950, mainly 15B.

<sup>3/</sup> Applied to North Dakota in nonrust years.

<sup>2/</sup> Many varieties once regarded as resistant are lacking in resistance to races now prevalent in this area.

### Recommendations:

**FOR RUST AREAS** - Selkirk, Lee and Conley should have preference. Conley is resistant to some races of stem rust to which Selkirk is susceptible but has less leaf rust resistance than Selkirk. Lee has some tolerance to 15B stem rust and its earliness may help it to ripen ahead of serious injury from rust, high ripening temperatures or late summer drought.

**WHERE RUST IS LESS COMMON** - Varieties such as Lee, Mida and Thatcher will yield satisfactorily in most years. Even in western areas, where the rust hazard is usually less, it is advisable to grow the most resistant varieties on most of the acreage as a protection against years of rust epidemics.

**FOR SAWFLY AREAS** - Rescue and Chinook offer some sawfly resistance. They are not resistant to 15B stem or to leaf rust. Their yield capacity is somewhat less than other varieties unless loss from sawfly is severe. Chinook is superior to Rescue only in flour quality.

**VARIETIES NOT RECOMMENDED** - CT-231 and other numbered varieties, or selections, and mixtures sold under a "brand" designation which does not indicate the varieties in the blend. CT-231 has been rejected because of unsatisfactory flour quality.

## DURUM<sup>3/</sup> BRIEF DESCRIPTION OF VARIETIES AVAILABLE FOR 1959 PLANTING.

Variety	Origin	When released	Beards	Height	Strength of straw	Maturity	Resistance to:				Rel. Yld. <sup>4/</sup>	Remarks
							Stem rust <sup>1/</sup>	Leaf rust <sup>2/</sup>	Loose smut	Bunt		
Mindum	Minn.	1917	yes	tall	m.weak	late	poor	good	good	good	v.good	Excellent quality if not rusted
Vernum	N. Dak.	1946	yes	tall	weak	m.late	poor	good	good	good	good	Some tolerance to 15B
Sentry	N. Dak.	1954	yes	med.	strong	early	fair	good	good	good	fair	Susceptible to black point
Langdon	N. Dak.	1956	yes	med.	m.weak	med.	med.	fair	good	good	v. good	Distinct kernel type-ylds well
Yuma	N. Dak.	1956	yes	med.	weak	med.	good	good	good	good	fair	Hard to thresh
Ramsey	N. Dak.	1956	yes	m.tall	med.	m.late	mod.	good	good	good	v. good	Carries some rust
Towner	N. Dak.	1956	yes	tall	med.	late	mod.	good	good	good	good	Less consistent in yield

<sup>1/</sup> Reference to races prevalent since 1950, mainly 15B.

<sup>2/</sup> Durums usually have adequate resistance to leaf rust. Langdon less resistant.

<sup>3/</sup> Durum breeding cooperative with USDA.

<sup>4/</sup> Applied to N. Dakota in nonrust years.

### Recommendations:

**FOR RUST AREAS** - Langdon and Ramsey. Towner and Yuma also offer good rust protection against stem rust. Langdon, Ramsey and Towner are more susceptible to some races of stem rust not now prevalent and may show considerable rust in some years. Yuma is most stem rust resistant but is less dependable in yield. Langdon, is somewhat more susceptible to leaf rust than other durums.

**WHERE RUST IS LESS COMMON** - Langdon, Ramsey, Mindum and Sentry. Sentry has some tolerance to 15B stem rust which together with its earliness may help it to ripen ahead of serious damage from rust and high ripening temperatures.

# BARLEY - A BRIEF DESCRIPTION OF VARIETIES AVAILABLE FOR 1959 PLANTING.

Variety	Origin	When released	Awn S or R	Aleurone color	Height	Straw strength	Rel. maturity	Disease reaction <sup>1/</sup>				Rel. yld. <sup>2/</sup>
								Stem rust	Loose smut	Spot blotch	Septoria	
<b>Malting class:</b>												
Trail	N. Dak.	1956	R	white	med.	mod.	med.early	R	MS	MS	S	v.good
Kindred	N. Dak.	1942	R	white	med.	weak	med.early	R	MS	MS	S	good
OAC 21	Can.	1910	R	blue	med.	mod.	med.	S	MS	MS	S	good
Montcalm	Can.	1945	S	blue	m.tall	mod.	med.late	S	MS	S	S	good
Parkland	Can.	1956	S	blue	med.	mod.	med. late	R	MS	MS	S	v.good
<b>Feed class:</b>												
Tregal	N. Dak.	1942	S	white	short	mod.	med.early	MR	R	MS	MS	v.good
Vantage	Can.	1947	S	white	m.short	strong	late	R	MS	S	S	v.good
Husky	Can.	1953	S	white	med.	mod.	med.late	R	MS	MS	S	v.good
Vantmore	Can.		S	white	m.short	strong	med.late	R	MR	MS	S	v.good
UM 570	Can. not released		S	blue	med.tall	strong	med.	R	MS	MS <sup>3/</sup>	S	v.good
Fox	Wisc.	1956	S	blue	med.	mod.	med.late	R	MS	MS	S	good
Liberty	S. Dak.	1957	S	white	m.short	strong	med.early	R	S	S	S	v.good
Forrest	Minn.	1957	S	white	med.	mod.	med.late	R	S	MS <sup>3/</sup>	S	good

<sup>1/</sup>R-resistant; S-susceptible; M-moderate.    <sup>2/</sup>Under North Dakota conditions.    <sup>3/</sup>Some tolerance over others rated MS

## Recommendations:

All barley varieties are susceptible to a number of leaf diseases which have caused yield losses in recent years. In 1957 high temperatures ahead of ripening also lowered many barley yields.

**FOR MALTING** - Trail and Kindred are first choice for malting barley. Trail has shown a higher yield capacity but has a tendency for smaller kernels. Parkland, a blue aleurone barley has shown some promise and should be considered primarily as a replacement for Montcalm and OAC 21. (See Note Below) Varieties grading blue malting barley have a more limited market outlet as a premium crop.

**FOR FEED** - Tregal, Vantage, Vantmore, Husky and Trail are all good. Vantage is a good yielder but susceptible to spot blotch. Trail, although listed as a malting variety, will yield about equal to feed varieties.

**Note:** Liberty and Forrest have been included in NDAC tests for only two years. More performance data are needed to determine their suitability under our conditions. Tests are being conducted for malting and brewing qualities. The status of Parkland by the Malting Industry is pending completion of large plant scale tests. Preliminary experimental tests indicate this variety possesses desirable malting qualities.

## OATS - A BRIEF DESCRIPTION OF SOME VARIETIES AVAILABLE FOR 1959 PLANTING

Variety	Origin	When released	Color grain	Height	Straw strength	Resistance to:				Rel. yield <sup>2/</sup>	Rel. bu. wt. <sup>2/</sup>
						Stem rust <sup>1/</sup>	Leaf rust	Smut			
						R7	R8				
<b>Early</b>											
Andrew	Minn.	1949	yel.wh.	short	mod.	R	S	mod.	good	good	good
Ajax	Can.	1942	white	med.tall	good	R	S	mod.	mod.	v.good	fair
Marion	Iowa	1940	white	med.tall	med.weak	R	S	mod.	good	v.good	good
Mo.0-205	Mo.	1951	gray	med.	mod.	R	S	mod.	good	good	good
Ransom	Ia.ND	1956	yel.	short	mod.	R	R	mod.	good	fair	good
Minhafer	Minn.	1957	yel.	short	strong	R	R	good	good	fair	good
Burnett	Iowa	1956	yel.wh.	med.	strong	R <sup>3/</sup>	R	mod.	good	fair-good	fair-good
<b>Med. early to Med. late:</b>											
Rainbow	N. D.	1929	yel.wh.	med.tall	weak	R	S	mod.	poor	good	fair
Branch	Wis.	1951	yel.wh.	med.tall	med.weak	R	S	mod.	mod.	good	fair
Rodney	Can.	1953	white	tall	strong	R <sup>3</sup>	R	mod.	good	v.good	good
Garry	Can.	1952	white	tall	med.strong	R	R	mod.	good	good	good
Sauk	Wis.	1953	white	med.tall	strong	R	S	mod.	good	good	good
Vicar (Hullless)	Can.	1957	amber	tall	med.strong	R	R	mod.	mod.	good	v.good

<sup>1/</sup>R-resistant; S-susceptible.

<sup>2/</sup>As applied to North Dakota conditions.

<sup>3/</sup>Not to Race 7A.

### Recommendations:

Races 7 and 8 of stem rust are the most prevalent in North Dakota. Race 7 is often more prevalent than Race 8. Most varieties available are not resistant to all races. Variety preference for rust areas, is given to varieties with resistance to race 7, if maturity and yields are favorable. Only Ransom, Minhafer and Garry have resistance to all known races.

FOR SOUTHEASTERN AND EASTERN SECTIONS OF THE STATE WHERE RUST HAZARDS ARE GREATEST -

Early: Andrew, Ajax, Marion, Ransom, Minhafer. Medium early: Garry.

FOR SOUTH CENTRAL AND WESTERN COUNTIES WHERE RUST HAZARDS ARE LESS -

Early: Ajax, Marion, Andrew. Medium early: Garry, Sauk.

FOR NORTH CENTRAL COUNTIES, LATER RIPENING VARIETIES CAN YIELD BETTER -

Medium early: Garry, Ajax, Sauk, Branch. Medium late: Rodney.

Many other varieties, though not superior but perhaps equal for our conditions to those listed include: Early Vicland, Clinton, Cherokee, Clintland. Medium early to medium late: Bonda, Vanguard, Fortune and Simcoe.

## FLAX - A BRIEF DESCRIPTION OF SOME VARIETIES AVAILABLE FOR SOWING IN 1959.

Variety	Origin	When released	Relative maturity	Color		Seed size	Plant height	Resistance to disease			Rel. yield	Oil yield	Oil quality
				flower	seed			Wilt	Rust <sup>2/</sup>	Pasmo <sup>3/</sup>			
Raja	Can.		early	bl.	br.	med.	short	R	R	S	good	low	fair
Sheyenne	ND <sup>1/</sup>	1945	early	bl.	br.	med.sm.	m.short	R	I	S	fair	fair	good
Marine	ND <sup>1/</sup>	1951	early	bl.	br.	med.sm.	med.	R	I	MS	good	fair	good
Bolley	ND <sup>1/</sup>	1957	early	bl.	br.	med.	med.	R	I	S	good	good	good
Linda	ND	1952	m.early	bl.	br.	large	med.	MR	MS	S	good	fair	fair
Victory	ND	1943	m.late	wh.	br.	large	med.	MR	MR	VS	v.good	good	good
Norland	ND	1955	m.late	wh.	br.	large	med.	MR	R	S	v.good	good	good
Redwood	Minn.	1951	m.late	bl.	br.	med.	med.	R	I	S	v.good	good	good
Army	Minn.	1958	late	bl.	br.	med.	med.	R	I	MS	v.good	good	good
DeOro (C.I.977)	ND	1944	late	pink	yel.	med.lge.	med.	MS	I	VS	v.good	good	good
B 5128	ND	1943	late	bl.	br.	large	med.	MR	I	S	v.good	good	fair

<sup>1/</sup>Cooperative with USDA. <sup>2/</sup>I means immune to all races of rust known to exist in this area. <sup>3/</sup>All varieties susceptible to pasmo - differences are only in degree of susceptibility.

### Recommendations:

FOR EARLY SOWING, under favorable seedbed conditions, the relatively late ripening, good rust resistant varieties will usually yield best. These include B 5128, Redwood, Norland and Victory.

FOR LATE SOWING, earlier maturing varieties will yield more dependably when sowing must be late, or in the season where late summer drouth or high ripening temperatures may cause more injury to the slower developing variety. Among the earlier ripening varieties which should have preference are Marine, Bolley and Sheyenne.

Note: Aster yellows, a virus disease transmitted to flax by the 6-spotted leafhopper, was very prevalent in 1957. Fields were most heavily infected in the eastern and central areas of the state. All varieties lack resistance to the disease. The leafhoppers and aster yellows were not a problem in 1958.

Army - Seed being increased in 1959 and will not be generally available until next year.