

# CROP VARIETY CHARACTERISTICS and RECOMMENDATIONS

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for North Dakota -- 1960

## Basis for Variety Choice

**T**HE 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.

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## HARD RED SPRING WHEAT - BRIEF DESCRIPTION OF VARIETIES AVAILABLE FOR 1960 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 <sup>4</sup> | 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"                 |
| Canthatch | Canada  | 1960          | no     | med.               | med.              | med. early | good                    | poor                    | mod.       | good | good                    | For N.W. counties mainly                  |
| Pembina   | Canada  | 1960          | no     | med.               | med.              | med. early | good                    | good                    | good       | good | good                    | <sup>4/</sup> Flour quality above Selkirk |

<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.

<sup>4/</sup> Comparisons limited. Expect it to approximate Selkirk.

### Recommendations:

**FOR RUST AREAS** - Selkirk, Lee and Conley should have preference. Conley has a stronger flour, 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 drouth. Pembina should go into the same area as Selkirk when seed becomes available.

**WHERE RUST IS LESS COMMON** - Varieties such as Lee, Mida, Thatcher and Canthatch will yield satisfactorily in nonrust 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. Canthatch is resistant to stem rust, susceptible to leaf rust.

**FOR SAWFLY AREAS** - Rescue and Chinook offer some sawfly resistance. They are not resistant to 15B stem or to leaf rust. Their yield 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 and is on the discount list of the Government loan program.

**DURUM<sup>3/</sup> BRIEF DESCRIPTION OF VARIETIES AVAILABLE FOR 1960 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<br>Susceptible to black point               |
| Sentry  | N.Dak. | 1954          | yes    | med.   | strong            | early    | fair                    | good                    | good       | good | fair                    |   |
| Langdon | N.Dak. | 1956          | yes    | med.   | m.weak            | med.     | mod.                    | fair                    | good       | good | v.good                  | Distinct kernel type-ylds. well<br>Hard to thresh                           |
| Yuma    | N.Dak. | 1956          | yes    | med.   | weak              | med.     | good                    | good                    | good       | good | fair                    |   |
| Ramsey  | N.Dak. | 1956          | yes    | m.tall | med.              | m.late   | mod.                    | good                    | good       | good | v.good                  | Carries some rust<br>Less consistent in yield                               |
| Towner  | N.Dak. | 1956          | yes    | tall   | med.              | late     | mod.                    | good                    | good       | good | good                    |   |
| Wells   | N.Dak. | 1960          | yes    | med.   | strong            | early    | good+                   | good                    | good       | good | v.good                  | Early strong straw, good rust resistance.<br>Like Wells, but lower test wt. |
| Lakota  | N.Dak. | 1960          | yes    | med.   | strong            | early    | good+                   | good                    | good       | good | v.good                  |   |

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

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

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

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

Langdon less resistant:

**Recommendations:**

FOR RUST AREAS - Langdon, Ramsey, Wells (Ld389) and Lakota (Ld392) offer good rust protection against stem rust. Langdon and Ramsey are susceptible to some races of stem rust not now prevalent and may show considerable rust in some years. Wells and Lakota have more rust resistance, are earlier ripening, have shorter stronger straw and should be excellent varieties for supplementing Langdon and Ramsey while replacing Towner and Yuma as soon as seed supplies permit. Langdon, is more susceptible to leaf rust than other durums.

WHERE RUST IS LESS COMMON - Langdon, Ramsey, Lakota, Wells, 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 1960 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> |                   |               |            |                |         |                |               |                                |            |                  |          |                         |
| Trall                 | 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.              | 1954          | S          | white          | m.short | strong         | med.late      | R                              | MR         | MS               | S        | v.good                  |
| UM 570                | Can. not released |               | S          | blue           | m.tall  | strong         | med.          | R                              | MS         | MS <sup>3/</sup> | S        | v.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                    |
| Swan                  | Can.              | 1958          | S          | white          | m.tall  | strong         | med.          | R                              | MS         | MS               | S        | v.good                  |
| Betzes (2-row)        | Mont.             | 1957          | R          | white          | med.    | mod.           | med.late      | S                              | S          | MS               | 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 some recent years. High temperatures ahead of ripening have also lowered many barley yields.

FOR MALTING - Trall and Kindred are first choices. Trall has shown a higher yield capacity but has a tendency for smaller kernels. Parkland, a blue malting barley should be considered primarily as a replacement for Montcalm and OAC 21.

Varieties grading blue malting barley or 2-row varieties of malting quality have a more limited market outlet as a premium crop.

FOR FEED - Tregal, Vantage, Vantmore, Husky, UM570, Swan and Trall are all satisfactory. Vantage is a good yielder but susceptible to spot blotch. Trall, although listed as a malting variety, will yield about equal to the better yielding feed varieties.

**Note:** Betzes a 2-row variety was released especially for the intermountain valleys of Montana where under a favorable environment it produces barley of acceptable malting quality. It also yields comparatively well in western dryland areas when rust and other diseases are not a factor, but is not recommended for the more eastern 6-row malting barley area.

## OATS - A BRIEF DESCRIPTION OF SOME VARIETIES AVAILABLE FOR 1960 PLANTING.

| Variety                         | Origin    | When re-<br>leased | Color<br>grain | Height   | Straw<br>strength | Resistance to:             |    |              |      | Rel. <sup>2/</sup><br>Yld. | Rel. <sup>2/</sup><br>bu. wt. |
|---------------------------------|-----------|--------------------|----------------|----------|-------------------|----------------------------|----|--------------|------|----------------------------|-------------------------------|
|                                 |           |                    |                |          |                   | Stem<br>rust <sup>1/</sup> |    | Leaf<br>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-N.D. | 1940               | white          | med.tall | med.weak          | R                          | S  | mod.         | good | v.good                     | good                          |
| Ransom                          | Ia.-N.D.  | 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                     |
| Minton                          | Minn.     | 1959               | yel.           | med.     | mod.              | R <sup>3</sup>             | R  | good         | good | good                       | fair                          |
| <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 | v.good                     | good                          |
| Sauk                            | Wis.      | 1953               | white          | med.tall | strong            | R                          | S  | mod.         | good | good                       | good                          |
| Vicar<br>(Hullness)             | 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

<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.

FOR SOUTHEASTERN AND EASTERN SECTIONS OF THE STATE WHERE RUST HAZARDS ARE GREATEST -  
Early: Andrew, Ajax, Marion, Ransom, Minhafer and Minton. 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.

## FLAX - A BRIEF DESCRIPTION OF SOME VARIETIES AVAILABLE FOR SOWING IN 1960.

| Variety         | Origin           | When re-<br>leased | Relative<br>maturity | Color  |      | Seed<br>size | Plant<br>height | Resistance to<br>disease |                     |                     | Rel.<br>yield | Oil<br>yield | Oil<br>quality |
|-----------------|------------------|--------------------|----------------------|--------|------|--------------|-----------------|--------------------------|---------------------|---------------------|---------------|--------------|----------------|
|                 |                  |                    |                      | flower | seed |              |                 | Wilt                     | Rust. <sup>2/</sup> | Pasmo <sup>3/</sup> |               |              |                |
| 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               | m.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, Army, 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 or 1959.