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# NEBRASKA SPRING SMALL GRAIN VARIETY TESTS 1987

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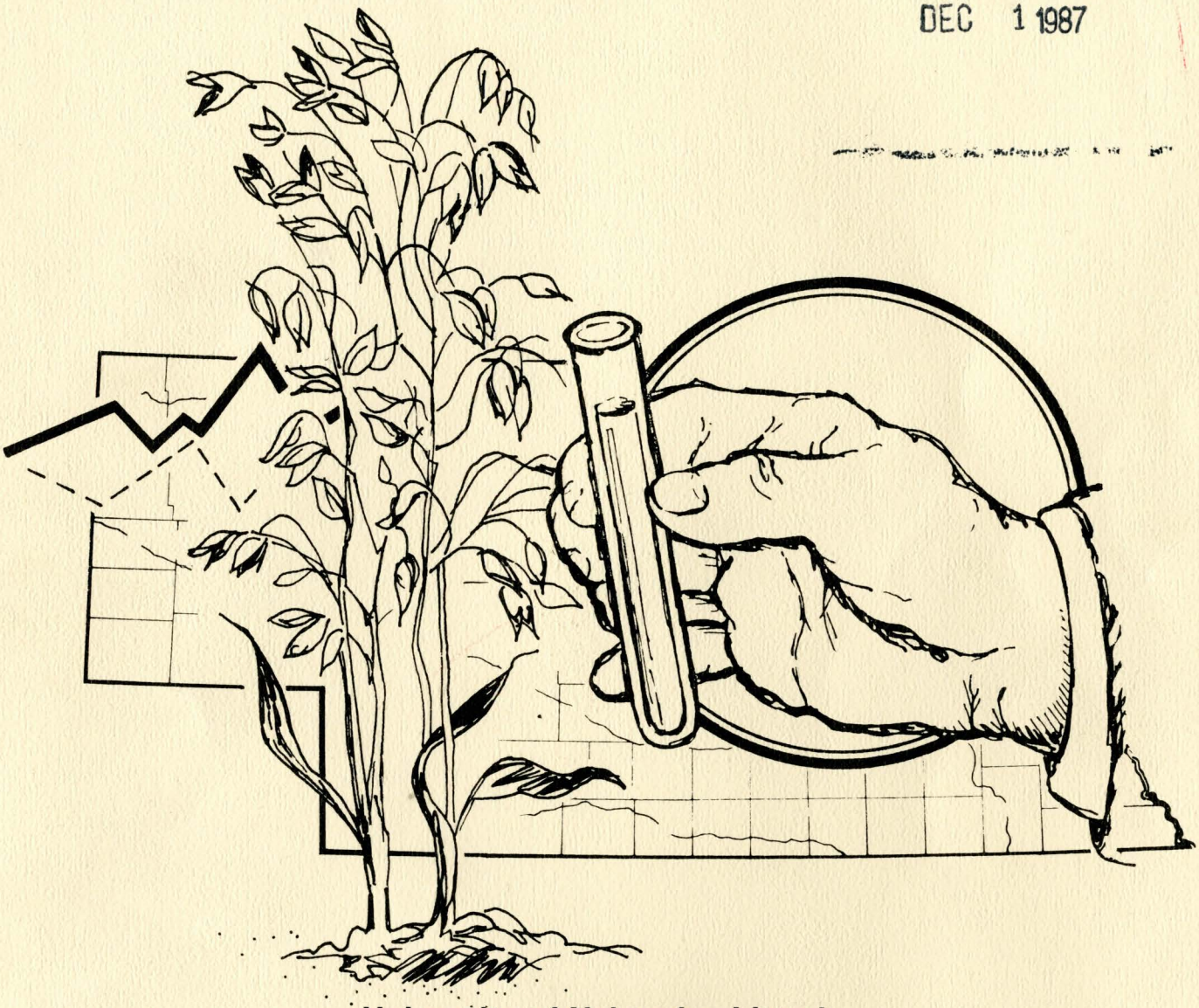

University of Nebraska–Lincoln
Institute of Agriculture and Natural Resources
Agricultural Research Division
Cooperative Extension Service

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EXTENSION CIRCULAR 87-102

# NEBRASKA SPRING SMALL GRAIN VARIETY TESTS

October 1987

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## METRIC EQUIVALENTS

| | | |
|---|---|---|
| 1 centimeter | = 0.394 inches | cm = inches x 2.54 |
| 1 hectare | = 2.471 acres | ha = acres x 0.045 |
| 1 kilogram | = 2.205 pounds | kg = pounds x 0.454 |
| 1 hectoliter | = 2.838 bushels | hl = bushels x 0.352 |

Kilogram/hectoliter = lb/bu x 1.287
Kilogram/hectare = bu/A x 35.87 (32#bushel) oats
Kilogram/hectare = bu/A x 53.81 (48#bushel) barley
Kilogram/hectare = bu/A x 67.26 (60#bushel) wheat

EXTENSION CIRCULAR 87-102

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NEBRASKA OATS AND BARLEY

PRODUCTION

| Year | Oats | | Barley | |
|---|---|---|---|---|
| | Harv. acres 000 | Yield bu/A | Harv. acres 000 | Yield bu/A |
| 1920 | 2,400 | 33.0 | 256 | 25.0 |
| 1930 | 2,485 | 29.0 | 726 | 25.5 |
| 1940 | 1,426 | 24.0 | 1,321 | 16.0 |
| 1950 | 2,562 | 24.0 | 310 | 15.0 |
| 1960 | 1,213 | 35.5 | 225 | 29.0 |
| 1970 | 573 | 42.0 | 45 | 36.0 |
| 1980 | 380 | 41.0 | 25 | 38.0 |
| 1983 | 310 | 44.0 | 69 | 39.0 |
| 1984 | 320 | 49.0 | 78 | 34.0 |
| 1985 | 420 | 61.0 | 120 | 32.0 |
| 1986 | 360 | 59.0 | 135 | 41.0 |
| 1987 | 400 | 48.0 | 75 | 44.0 |

1987 data are preliminary. Comparable data for spring wheat are not available.

# NEBRASKA SPRING SMALL GRAIN

# VARIETY TESTS

# 1987

The winter of 1986-1987 generally was drier and warmer than normal. Spring field work began early, especially in Southeast Nebraska. Some oats were seeded before the late March snow and cold weather.

On April 12, oat seeding was 40% complete. This is ahead of the five-year average for this date. On April 27, seeding was 85%. The five-year average for this date is 68%.

May was warm and dry. High temperatures in mid-June adversely affected yields. April 1 - July rainfall was slightly below normal in the West Cropping District. In the Northeast District, rainfall for this period was only 58% of normal. In the Southeast District, rainfall for this period was above normal but this resulted from heavy rains in late June.

## Suggested varieties and new releases

Suggested oat and barley varieties for Nebraska are shown on the map (page 4). Characteristics of oat varieties included in recent Nebraska state-wide tests are shown in Table 1.

Kelly, Pierce and Steele were tested for the first time in 1984. Don, Hazel and Proat were released in 1985. Hytest, Sandy and Starter were released in 1986.

Hytest was developed by the South Dakota Agricultural Experiment Station. The pedigree is Moore//Dal/Nodaway 70. Maturity is midseason. This variety has light-cream colored kernels with high test weight.

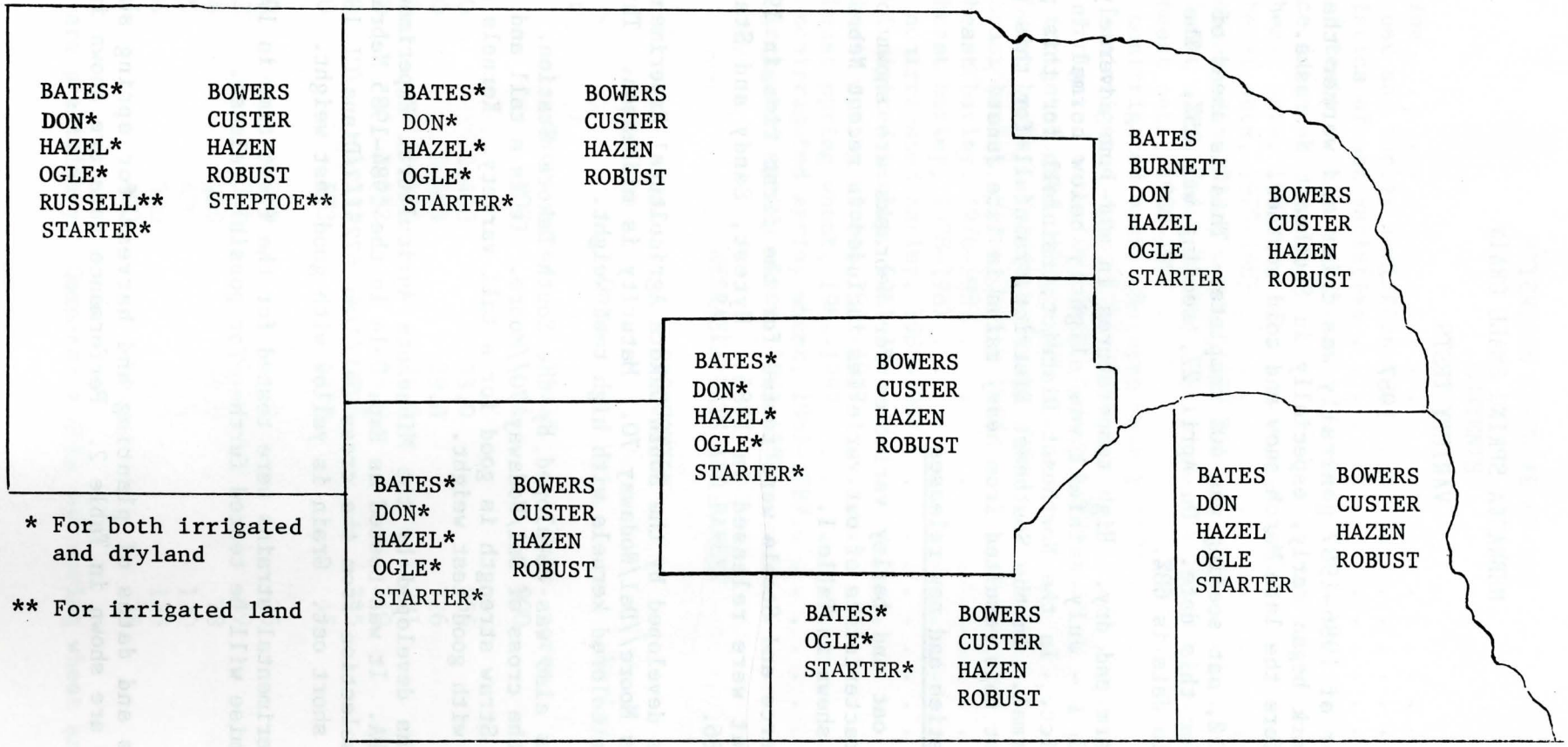
Sandy oats also was developed by the South Dakota Station. Sandy was selected from the cross of Dal/Nodaway 70//Moore. It is a tall and relatively late variety. Straw strength is good for a tall variety. Kernels are light-cream in color with good test weight.

Starter was developed by the Minnesota Agricultural Experiment Station and the ARS/USDA. It was tested as Exp. O-14 in the 1984-1985 Nebraska Tests. Starter is a selection from the cross Dal/3/Mn 67231/2/Diana/CI 18344/Noble. It is an early short oat. Grain is yellow with good test weight.

Three experimental strains were tested for the first time in 1987. Those which show promise will be tested further for possible release.

## 1987 Tests

Locations and dates of planting and harvest for spring small grain variety trials are shown in Table 2. Performance data are shown in Tables 3 through 21.




SUGGESTED OAT AND BARLEY VARIETIES FOR NEBRASKA

1987

Table 1. Characteristics of oat varieties in Nebraska tests.

| Variety | Origin | Released | Maturity | Height | Straw strength | Grain color |
|---|---|---|---|---|---|---|
| Bates | Missouri | 1976 | Early | Short | Strong | Dark |
| Burnett | Iowa | 1957 | Medium | Medium | Medium | Ivory |
| Don | Illinois | 1985 | Early | Short | Strong | White |
| Hazel | Illinois | 1985 | Med-early | Short | Strong | Ivory |
| Hytest | South Dakota | 1986 | Medium | Tall | Medium | Lt. Cream |
| Kelly | South Dakota | 1984 | Early | Medium | Strong | White |
| Kelsey | Canada | 1967 | Med-late | Tall | Medium | White |
| Kherson | Russia | 1896 | Med-late | Tall | Weak | Pale brown |
| Lancer | South Dakota | 1979 | Medium | Medium | Strong | White |
| Nodaway 70 | Missouri | 1970 | Early | Medium | Medium | White |
| Ogle | Illinois | 1981 | Medium | Short | Strong | Yellow |
| Pierce | North Dakota | 1983 | Late | Medium | Medium | White |
| Proat | Minnesota | 1985 | Late | Tall | Strong | Ivory |
| Russell | Canada | 1960 | Late | Tall | Medium | White |
| Sandy | South Dakota | 1986 | Late | Tall | Strong | Lt. Cream |
| Starter | Minnesota | 1986 | Early | Short | Strong | Yellow |
| Steele | North Dakota | 1984 | Med-late | Tall | Medium | Lt. Tan |
| Webster | Iowa | 1984 | Early | Short | Strong | Yellow |

Grain color varies with environment.

Table 2. Location, soil, type and date of planting and harvest. Nebraska spring small grain variety trials. 1987

| County | Cooperator/Soil Type | Planted | Harvested |
|---|---|---|---|
| Saunders | Agricultural Res. & Dev. Center, Mead, Sharpsburg silty clay loam | April 8 | July 22 1/ |
| Dixon | Northeast Res. & Ext. Center, Concord, Nora silty clay loam | April 7 | 2/ |
| Cedar | Troy, Fuelberg, Hartington Alcester silt loam | April 7 | July 6 3/ |
| Cheyenne | High Plains Ag. Laboratory, Sidney, Keith silt loam | April 8 | 4/ |
| Scotts Bluff (irr.) | Panhandle Res. & Ext. Center, Scottsbluff, Tripp very fine sandy loam | April 6 | Hailed |
| Box Butte (irr.) | Northwest Ag. Laboratory, Alliance, Keith silt loam | April 7 | July 28 1/ |

1/ Oats, barley, spring wheat
2/ Oats--July 6, barley July 7, spring wheat--July 15
3/ Oats only
4/ Barley--July 22, oats and spring wheat--July 29

The 1987 data are shown along with period-of-years performance. This provides information about variety reaction to differing conditions. The performance of varieties cannot be measured with absolute accuracy because of variations in soil and other conditions within the test area. Unless varieties differ in yield or other characters by more than the difference required for significance shown in the tables, little confidence can be placed in the superiority of one over the other. These differences are calculated at the 5% level of probability. Differences this great would be expected through chance alone in 1 of 20 trials.

## Oats

Southeast District from the Agricultural Research and Development Center at Mead are shown in Table 3. Harvest was delayed by frequent rains early in July. Period-of-years data for this location are shown in Table 4.

Two trials were conducted in the Northeast District (Tables 5-6). Yields were lower in Cedar County but test weights were higher. Period-of-year data are shown in Table 7.

Excellent yields were obtained from the West Nonirrigated trial in Cheyenne County (Table 8). Six-year average yields in this area are in the 90-100 bushel range for Ogle, the most productive variety (Table 9).

The West Irrigated trial in Scotts Bluff County was hailed and no data were obtained. High oat yields were obtained in Box Butte County (Table 10). Six-year average yields of four varieties exceeded 100 bushels per acre (Table 11).

## Barley

Barley trials were planted adjacent to oats. Relative production of oats and barley per unit area was as follows:

| Location | Barley % of Oats | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 |
| Saunders | 102 | 89 | 95 | --- | 79 | 73 | 80 | 114 | --- | 86 |
| Dixon | 117 | 134 | 117 | --- | 123 | 73 | 136 | 118 | 90 | 130 |
| Cheyenne | 91 | 107 | 121 | 73 | 133 | 101 | 143 | 105 | 95 | 96 |
| Scotts Bluff (irr.) | 89 | 95 | 141 | --- | 125 | 125 | 101 | 132 | --- | --- |
| Box Butte (irr.) | --- | 136 | 112 | 127 | 106 | 121 | 107 | 148 | 114 | 104 |
| Dawes (irr.) | 86 | --- | --- | --- | --- | --- | --- | --- | --- | --- |

These data are based on the average yield of all varieties included in that test. They emphasize that relative performance of these two crops varies greatly with environmental conditions.

Barley yield and other data from the Southeast, Northeast and West Nonirrigated and West Irrigated Districts are shown in Tables 12 through 17.

## Spring Wheat

Spring wheat data are shown in Tables 18 through 21. Oslo and Tammy are privately developed spring wheat varieties. These were entered by the Agricultural Research Division to provide information about their performance. Three spring triticale varieties were included for a second year. These were Marval, from South Dakota and Karl and Kramer, released by North Dakota. These yields are reported on a 60-pound bushel basis for ease in making direct comparisons with spring wheat on an equivalent basis. Triticale has a bushel weight of 48 pounds.

Spring wheat yields at all locations except the Box Butte County site were below long-time averages. Performance was especially poor in Cheyenne County. Apparently the high temperature patterns in June were more damaging to spring wheat than oats or barley.

Table 3. Southeast District oat variety test. Saunders County. 1987.

| Variety | Flower date | Height inches | Yield bu/A | Weight lb/bu |
|---|---|---|---|---|
| Bates | 6/1 | 26 | 61 | 31.9 |
| Burnett | 6/2 | 29 | 64 | 31.0 |
| Don | 6/1 | 23 | 75 | 31.9 |
| Hazel | 6/4 | 25 | 70 | 31.2 |
| Hytest | 6/4 | 33 | 68 | 35.8 |
| Kelly | 5/30 | 29 | 41 | 32.9 |
| Kherson | 6/6 | 31 | 45 | 27.5 |
| Nodaway 70 | 5/30 | 27 | 38 | 33.5 |
| Ogle | 6/2 | 27 | 85 | 30.3 |
| Pierce | 6/10 | 30 | 49 | 32.2 |
| Proat | 6/9 | 31 | 61 | 31.1 |
| Russell | 6/6 | 31 | 64 | 30.5 |
| Sandy | 6/8 | 33 | 58 | 31.7 |
| Starter | 5/31 | 24 | 65 | 32.8 |
| Steele | 6/8 | 31 | 69 | 30.9 |
| Webster | 5/31 | 26 | 69 | 30.0 |
| Exp. 0-16 | 6/2 | 25 | 71 | 34.8 |
| Exp. 0-17 | 6/4 | 30 | 68 | 35.4 |
| Exp. 0-18 | 6/3 | 27 | 81 | 30.9 |
| Average all entries | 3.4 | 28.3 | 63.3 | 31.9 |
| Dif. req. sig. | 1.0 | 1.8 | 7.9 | ---- |

Test on Agricultural Research and Development Center, Mead.

Table 4. Southeast District oat variety tests. 1979-1987. No 1986 data.

| Variety | Grain yield bu/A | | | | | | | | | | Weight lb/bu | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1987 | 1985-87 average | 1982-87 average | 1985-87 average | 1982-87 average |
| Bates | 26 | 85 | 38 | 67 | 78 | 78 | 100 | 61 | 81 | 77 | 34.7 | 34.2 |
| Burnett | 20 | 73 | 34 | 59 | 70 | 66 | 96 | 64 | 80 | 71 | 32.6 | 32.0 |
| Don | -- | -- | -- | 72 | 80 | 89 | 120 | 75 | 98 | 87 | 34.8 | 34.4 |
| Hazel | -- | -- | -- | -- | -- | -- | 126 | 70 | 98 | -- | 34.3 | ---- |
| Hytest | -- | -- | -- | -- | -- | -- | -- | 68 | -- | -- | ---- | ---- |
| Kelly | -- | -- | -- | -- | 43 | 78 | 79 | 41 | 60 | -- | 36.1 | ---- |
| Kelsey | 18 | 91 | 27 | 64 | 38 | 89 | 99 | -- | -- | -- | ---- | ---- |
| Kherson | 22 | 81 | 25 | 58 | 59 | 47 | 51 | 45 | 48 | 52 | 28.3 | 27.5 |
| Lancer | 25 | 86 | 32 | 72 | 43 | 78 | 93 | -- | -- | -- | ---- | ---- |
| Nodaway 70 | -- | -- | -- | -- | -- | -- | -- | 38 | -- | -- | ---- | ---- |
| Ogle | -- | 68 | 39 | 89 | 107 | 89 | 127 | 85 | 106 | 99 | 33.0 | 32.7 |
| Pierce | -- | -- | -- | -- | -- | -- | 79 | 49 | 64 | -- | 34.0 | ---- |
| Proat | -- | -- | -- | -- | -- | -- | 91 | 61 | 76 | -- | 34.7 | ---- |
| Russell | 24 | 74 | 21 | 57 | 48 | 57 | 81 | 64 | 73 | 61 | 33.2 | 32.2 |
| Sandy | -- | -- | -- | -- | -- | -- | -- | 58 | -- | -- | ---- | ---- |
| Starter | -- | -- | -- | -- | -- | 87 | 107 | 65 | 86 | -- | 35.2 | ---- |
| Steele | -- | -- | -- | -- | -- | -- | 99 | 69 | 84 | -- | 33.5 | ---- |
| Webster | -- | -- | -- | -- | -- | 82 | 112 | 69 | 91 | -- | 33.0 | ---- |
| Exp. 0-16 | -- | -- | -- | -- | -- | -- | -- | 71 | -- | -- | ---- | ---- |
| Exp. 0-17 | -- | -- | -- | -- | -- | -- | -- | 68 | -- | -- | ---- | ---- |
| Exp. 0-18 | -- | -- | -- | -- | -- | -- | -- | 81 | -- | -- | ---- | ---- |
| Dif. req. sig. | 6.8 | 11.7 | 8.0 | 10.2 | 14.0 | 12.8 | 5.3 | 7.9 | 20.7 | 12.0 | 2.3 | 1.0 |

Tests on Agricultural Research and Development Center, Mead.

Table 5. Northeast District oat variety test. Dixon County. 1987.

| Variety | Flower June | Height inches | Lodging % | Grain bu/A | Weight lb/bu | Protein % | Straw cwt/A |
|---|---|---|---|---|---|---|---|
| Bates | 7 | 32 | 2 | 89 | 32.6 | 14.1 | 39.2 |
| Burnett | 6 | 32 | 6 | 67 | 30.7 | 14.5 | 33.6 |
| Don | 6 | 29 | 0 | 90 | 32.3 | 12.4 | 33.1 |
| Hazel | 10 | 29 | 1 | 89 | 32.4 | 13.9 | 36.7 |
| Hytest | 10 | 34 | 3 | 54 | 37.7 | 15.6 | 33.3 |
| Kelly | 8 | 33 | 6 | 54 | 33.6 | 15.8 | 34.2 |
| Kherson | 11 | 34 | 8 | 45 | 27.6 | 15.5 | 32.1 |
| Nodaway 70 | 7 | 32 | 4 | 47 | 33.1 | 15.1 | 31.4 |
| Ogle | 9 | 33 | 2 | 90 | 32.3 | 12.8 | 39.7 |
| Pierce | 15 | 33 | 13 | 49 | 32.7 | 15.4 | 37.8 |
| Proat | 13 | 35 | 8 | 49 | 31.7 | 15.3 | 38.0 |
| Russell | 11 | 36 | 4 | 43 | 31.7 | 13.9 | 32.2 |
| Sandy | 11 | 35 | 5 | 35 | 32.3 | 14.4 | 32.1 |
| Starter | 7 | 31 | Tr. | 84 | 34.1 | 14.5 | 34.1 |
| Steele | 11 | 35 | 6 | 68 | 32.6 | 13.1 | 38.0 |
| Webster | 6 | 30 | 1 | 66 | 31.1 | 13.3 | 35.2 |
| Exp. 0-16 | 7 | 31 | Tr. | 87 | 35.7 | 13.6 | 38.6 |
| Exp. 0-17 | 10 | 32 | 4 | 30 | 31.5 | 17.0 | 27.0 |
| Exp. 0-18 | 9 | 32 | 2 | 82 | 33.1 | 13.6 | 40.1 |
| Average | 9.2 | 32.5 | 3.9 | 64.1 | 32.6 | 14.4 | 35.1 |
| Def. req. sig. | 1.1 | 1.7 | 3.6 | 11.6 | ---- | 0.8 | 4.0 |

Grain protein on 12% moisture basis.
Test on Northeast Research and Extension Center, Concord.

Table 6. Northeast District oat variety test. Cedar County. 1987.

| Variety | Height inches | Grain bu/A | Weight lb/bu | Protein % | Straw cwt/A |
|---|---|---|---|---|---|
| Bates | 25 | 64 | 35.4 | 14.4 | 22.2 |
| Burnett | 26 | 60 | 34.2 | 13.9 | 18.1 |
| Don | 22 | 60 | 36.4 | 13.3 | 18.1 |
| Hazel | 23 | 64 | 36.5 | 13.9 | 19.7 |
| Hytest | 29 | 53 | 40.3 | 15.3 | 20.7 |
| Kelly | 26 | 59 | 38.3 | 15.5 | 22.1 |
| Kherson | 29 | 54 | 32.5 | 15.2 | 20.6 |
| Nodaway 70 | 25 | 54 | 37.9 | 14.6 | 19.2 |
| Ogle | 26 | 78 | 34.3 | 13.1 | 22.6 |
| Pierce | 29 | 58 | 36.9 | 16.1 | 24.0 |
| Proat | 28 | 63 | 37.0 | 16.1 | 22.7 |
| Russell | 28 | 49 | 36.4 | 15.1 | 19.9 |
| Sandy | 30 | 51 | 37.3 | 14.4 | 20.3 |
| Starter | 24 | 50 | 37.2 | 15.3 | 17.5 |
| Steele | 29 | 62 | 35.7 | 14.2 | 23.9 |
| Webster | 24 | 51 | 33.9 | 14.2 | 20.8 |
| Exp. 0-16 | 23 | 58 | 38.9 | 14.8 | 20.8 |
| Exp. 0-17 | 28 | 50 | 39.8 | 15.6 | 20.4 |
| Exp. 0-18 | 26 | 62 | 35.8 | 14.2 | 19.6 |
| Average | 26.3 | 57.9 | 36.6 | 14.7 | 20.7 |
| Dif. req. sig. | 2.3 | 10.5 | ---- | 0.8 | 3.4 |

Grain protein on 12% moisture basis.

Table 7. Northeast District oat variety tests. 1980-1987.

| Variety | Grain yield bu/A | | | | | | | | | | Weight lb/bu | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1985-87 average | 1982-87 average | 1987 | 1982-87 average |
| Bates | 115 | 52 | 108 | 80 | 80 | 76 | 96 | 77 | 83 | 86 | 34.0 | 34.9 |
| Burnett | 112 | 49 | 92 | 55 | 74 | 77 | 91 | 64 | 77 | 76 | 35.5 | 32.6 |
| Don | -- | -- | 115 | 85 | 85 | 85 | 93 | 75 | 84 | 90 | 34.4 | 35.5 |
| Hazel | -- | -- | -- | -- | -- | 87 | 94 | 77 | 86 | -- | 34.5 | 35.0 |
| Hytest | -- | -- | -- | -- | -- | -- | 79 | 34 | -- | -- | 39.0 | ---- |
| Kelly | -- | -- | -- | -- | 60 | 76 | 70 | 57 | 68 | -- | 36.0 | 36.6 |
| Kelsey | 108 | 35 | 89 | 53 | 91 | 89 | -- | -- | -- | -- | ---- | ---- |
| Kherson | 95 | 37 | 68 | 42 | 74 | 64 | 69 | 50 | 61 | 61 | 30.1 | 28.8 |
| Lancer | 110 | 44 | 86 | 59 | 68 | 81 | -- | -- | -- | -- | ---- | ---- |
| Nodaway 70 | -- | -- | -- | -- | -- | -- | 78 | 51 | -- | -- | 35.5 | ---- |
| Ogle | 122 | 54 | 114 | 81 | 88 | 92 | 96 | 84 | 91 | 93 | 33.3 | 33.4 |
| Pierce | -- | -- | -- | -- | -- | 74 | 96 | 54 | 75 | -- | 34.8 | 35.6 |
| Proat | -- | -- | -- | -- | -- | 82 | 99 | 56 | 79 | -- | 34.4 | ---- |
| Russell | -- | -- | 95 | 56 | 77 | 70 | 95 | 46 | 70 | 73 | 34.1 | 33.4 |
| Sandy | -- | -- | -- | -- | -- | -- | 89 | 43 | -- | -- | 34.8 | ---- |
| Starter | -- | -- | -- | -- | 64 | 79 | 93 | 67 | 80 | -- | 35.7 | 36.9 |
| Steele | -- | -- | -- | -- | -- | 81 | 89 | 65 | 78 | -- | 34.2 | 33.8 |
| Webster | -- | -- | -- | -- | 53 | 80 | 86 | 59 | 75 | -- | 32.5 | 33.0 |
| Exp. 0-16 | -- | -- | -- | -- | -- | -- | -- | 73 | -- | -- | 37.3 | ---- |
| Exp. 0-17 | -- | -- | -- | -- | -- | -- | -- | 40 | -- | -- | 35.7 | ---- |
| Exp. 0-18 | -- | -- | -- | -- | -- | -- | -- | 72 | -- | -- | 34.5 | ---- |
| Dif. req. sig. | NS | 10.7 | 11.8 | NS | 24.1 | 16.4 | 14.5 | NS | 11.2 | 8.7 | 2.1 | 2.0 |

Location of tests (counties): 1980 Dixon and Cedar; 1981 Cedar; 1982 Dixon; 1983-1984 Dixon and Cedar; 1985 Thurston and Dixon; 1986 Dixon 1987 Dixon and Cedar.

Table 8. West District nonirrigated oat variety test. Cheyenne County. 1987.

| Variety | Flower June | Height inches | Yield bu/A | Weight lb/bu |
|---|---|---|---|---|
| Bates | 12 | 34 | 83 | 36.5 |
| Don | 11 | 32 | 83 | 36.4 |
| Hazel | 13 | 32 | 96 | 35.7 |
| Hytest | 15 | 42 | 76 | 40.0 |
| Kelly | 12 | 37 | 66 | 38.0 |
| Kherson | 18 | 42 | 75 | 32.2 |
| Nodaway 70 | 11 | 40 | 63 | 38.4 |
| Ogle | 15 | 36 | 112 | 35.4 |
| Pierce | 18 | 38 | 105 | 37.8 |
| Proat | 18 | 40 | 91 | 38.5 |
| Russell | 18 | 43 | 94 | 36.6 |
| Sandy | 18 | 45 | 86 | 37.3 |
| Starter | 11 | 35 | 87 | 37.7 |
| Steele | 16 | 41 | 96 | 34.6 |
| Webster | 12 | 35 | 91 | 35.5 |
| Exp. O-16 | 15 | 34 | 87 | 38.7 |
| Exp. O-17 | 16 | 37 | 78 | 40.0 |
| Exp. O-18 | 13 | 38 | 99 | 35.4 |
| Average all entries | 14.6 | 37.8 | 87.1 | 36.9 |
| Dif. req. sig. | 1.1 | 2.5 | 8.8 | 1.2 |

Test on High Plains Agricultural Laboratory.

Table 9. West District nonirrigated oat variety tests. 1980-1987.

| Variety | Grain yield bu/A | | | | | | | | | | Weight lb/bu | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1984-87 average | 1982-87 average | 1987 | 1984-87 average |
| Bates | 40 | 109 | 98 | 78 | 59 | 62 | 86 | 83 | 77 | 78 | 36.5 | 35.5 |
| Don | -- | -- | 115 | 79 | 64 | 72 | 87 | 83 | 81 | 83 | 36.4 | 35.5 |
| Hazel | -- | -- | -- | -- | -- | 70 | 86 | 96 | 84 | -- | 35.7 | 35.0 |
| Hytest | -- | -- | -- | -- | -- | -- | 79 | 76 | -- | -- | 40.0 | ---- |
| Kelly | -- | -- | -- | -- | 58 | 48 | 67 | 66 | 60 | -- | 38.0 | 36.2 |
| Kelsey | 38 | 88 | 83 | 52 | 82 | 62 | -- | -- | -- | -- | ---- | ---- |
| Kherson | 27 | 72 | 73 | 59 | 72 | 50 | 60 | 75 | 62 | 65 | 32.2 | 29.9 |
| Lancer | 38 | 91 | 111 | 77 | 59 | 65 | -- | -- | -- | -- | ---- | ---- |
| Nodaway 70 | -- | -- | -- | -- | -- | -- | 79 | 63 | -- | -- | 38.4 | ---- |
| Ogle | 42 | 110 | 131 | 81 | 87 | 77 | 97 | 112 | 95 | 98 | 35.4 | 33.3 |
| Pierce | -- | -- | -- | -- | 67 | 62 | 81 | 105 | 83 | -- | 37.8 | 35.3 |
| Proat | -- | -- | -- | -- | -- | 63 | 78 | 91 | 77 | -- | 38.5 | 35.4 |
| Russell | 36 | -- | 90 | 73 | 71 | 61 | 77 | 94 | 77 | 78 | 36.6 | 33.7 |
| Sandy | -- | -- | -- | -- | -- | -- | 85 | 86 | -- | -- | 37.3 | ---- |
| Starter | -- | -- | -- | -- | 62 | 62 | 82 | 87 | 77 | -- | 37.7 | 36.2 |
| Steele | -- | -- | -- | -- | 76 | 60 | 79 | 96 | 78 | -- | 34.6 | 33.4 |
| Webster | -- | -- | -- | -- | 55 | 73 | 86 | 91 | 83 | -- | 35.5 | 34.2 |
| Exp. 0-16 | -- | -- | -- | -- | -- | -- | -- | 87 | -- | -- | 38.7 | ---- |
| Exp. 0-17 | -- | -- | -- | -- | -- | -- | -- | 78 | -- | -- | 40.0 | ---- |
| Exp. 0-18 | -- | -- | -- | -- | -- | -- | -- | 99 | -- | -- | 35.4 | ---- |
| Dif. req. sig. | NS | 21.3 | 16.4 | 6.2 | 7.8 | 9.3 | 18.2 | 8.8 | 9.2 | 10.3 | 2.5 | 1.5 |

Location of tests (counties): 1980-1987 Cheyenne.

Table 10. West irrigated oat variety test. Box Butte County. 1987.

| Variety | Flower June | Height inches | Yield bu/A | Weight lb/bu |
|---|---|---|---|---|
| Bates | 22 | 36 | 108 | 35.3 |
| Don | 16 | 33 | 117 | 35.7 |
| Hazel | 22 | 33 | 102 | 36.6 |
| Hytest | 18 | 40 | 95 | 40.5 |
| Kelly | 22 | 37 | 73 | 35.7 |
| Kherson | 18 | 39 | 88 | 31.8 |
| Nodaway 70 | 18 | 37 | 83 | 34.8 |
| Ogle | 16 | 35 | 125 | 33.7 |
| Pierce | 22 | 39 | 108 | 37.3 |
| Proat | 16 | 37 | 100 | 36.8 |
| Russell | 22 | 39 | 109 | 36.3 |
| Sandy | 17 | 40 | 92 | 37.8 |
| Starter | 17 | 35 | 93 | 36.8 |
| Steele | 16 | 40 | 109 | 35.0 |
| Webster | 22 | 35 | 97 | 32.5 |
| Exp. 0-16 | 16 | 35 | 87 | 36.2 |
| Exp. 0-17 | 22 | 35 | 76 | 39.3 |
| Exp. 0-18 | 17 | 36 | 112 | 35.0 |
| Average all entries | 18.8 | 36.7 | 98.6 | 36.0 |
| Dif. req. sig. | 0.6 | 2.1 | 24.5 | 2.4 |

Test on Northwest Agricultural Laboratory

Table 11. West District irrigated oat variety tests. 1980-1987.

| Variety | Grain yield bu/A | | | | | | | | | | Weight lb/bu | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1985-87 average | 1982-87 average | 1987 | 1985-87 average |
| Bates | 81 | 102 | 98 | 84 | 102 | 117 | 92 | 108 | 106 | 100 | 35.3 | 36.5 |
| Don | -- | -- | 100 | 81 | 105 | 112 | 88 | 117 | 106 | 101 | 35.7 | 36.6 |
| Hazel | -- | -- | -- | -- | -- | 120 | 92 | 102 | 105 | -- | 36.6 | 37.1 |
| Hytest | -- | -- | -- | -- | -- | -- | 70 | 95 | -- | -- | 40.5 | ---- |
| Kelly | -- | -- | -- | -- | 92 | 87 | 66 | 73 | 75 | -- | 35.7 | 37.4 |
| Kelsey | 96 | 127 | 101 | 87 | 119 | 131 | -- | -- | -- | -- | ---- | ---- |
| Kherson | 74 | 112 | 95 | 74 | 100 | 100 | 63 | 88 | 84 | 87 | 31.8 | 32.6 |
| Lancer | 70 | 116 | 79 | 77 | 96 | 115 | -- | -- | -- | -- | ---- | ---- |
| Nodaway 70 | -- | -- | -- | -- | -- | -- | 57 | 83 | -- | -- | 34.8 | ---- |
| Ogle | 93 | 129 | 106 | 95 | 123 | 131 | 113 | 125 | 123 | 116 | 33.7 | 34.7 |
| Pierce | -- | -- | -- | -- | 123 | 112 | 89 | 108 | 103 | -- | 37.3 | 37.9 |
| Proat | -- | -- | -- | -- | -- | 107 | 87 | 100 | 98 | -- | 36.8 | 37.1 |
| Russell | 89 | 118 | 89 | 85 | 114 | 113 | 99 | 109 | 107 | 102 | 36.3 | 37.0 |
| Sandy | -- | -- | -- | -- | -- | -- | 85 | 92 | -- | -- | 37.8 | ---- |
| Starter | -- | -- | -- | -- | 88 | 118 | 84 | 93 | 98 | -- | 36.8 | 37.3 |
| Steele | -- | -- | -- | -- | 125 | 112 | 93 | 109 | 105 | -- | 35.0 | 35.9 |
| Webster | -- | -- | -- | -- | 95 | 112 | 94 | 97 | 101 | -- | 32.5 | 34.4 |
| Exp. 0-16 | -- | -- | -- | -- | -- | -- | -- | 87 | -- | -- | 36.2 | ---- |
| Exp. 0-17 | -- | -- | -- | -- | -- | -- | -- | 76 | -- | -- | 39.3 | ---- |
| Exp. 0-18 | -- | -- | -- | -- | -- | -- | -- | 112 | -- | -- | 35.0 | ---- |
| Dif. req. sig | 16.7 | 20.2 | N.S. | 12.1 | 20.6 | NS | 14.3 | 24.5 | 8.9 | 8.6 | 2.4 | 0.9 |

Location of tests (counties): 1980 Scotts Bluff and Box Butte; 1981 Box Butte; 1982-1985 Scotts Bluff and Box Butte; 1986 Box Butte; 1987 Box Butte.

Table 12. Southeast District barley variety test. Saunders County. 1987.

| Variety | Flower June | Height inches | Yield bu/A | Weight lb/bu |
|---|---|---|---|---|
| Bowers | 9 | 25 | 37 | 43.2 |
| Custer | 4 | 25 | 34 | 44.6 |
| Hazen | 6 | 26 | 37 | 44.3 |
| Robust | 7 | 26 | 37 | 46.1 |
| Average | 6.5 | 25.5 | 36.3 | 44.6 |
| Dif. req. sig. | 0.4 | 1.0 | NS | ---- |

Test on Agricultural Research and Development Center, Mead.

Table 13. Northeast District barley variety test. Dixon County. 1987.

| Variety | Flower June | Height inches | Lodging % | Yield bu/A | Weight lb/bu |
|---|---|---|---|---|---|
| Bowers | 9 | 32 | 14 | 57 | 42.0 |
| Custer | 5 | 32 | 23 | 57 | 42.3 |
| Hazen | 9 | 34 | 6 | 58 | 42.5 |
| Robust | 9 | 33 | 20 | 50 | 44.2 |
| Average | 8.0 | 32.8 | 15.8 | 55.5 | 42.8 |
| Dif. req. sig. | 0.6 | 1.4 | NS | NS | -- |

Test on Agricultural Research and Extension Center, Concord.

Table 14. Southeast District barley variety tests. 1978-1987. No 1981 data.

| Variety | Grain yield bu/A | | | | | | | | | | Weight lb/bu | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1978 | 1979 | 1980 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1983-87 average | 1987 | 1983-87 average |
| Azure | -- | 15 | 39 | 40 | 36 | 45 | 85 | -- | -- | -- | ---- | ---- |
| Beacon | 32 | 10 | -- | -- | -- | -- | -- | -- | -- | -- | ---- | ---- |
| Bowers | 42 | 14 | 57 | 37 | 34 | 46 | 71 | 74 | 37 | 52 | 43.2 | 45.4 |
| Custer | 38 | 12 | 53 | 32 | 26 | 43 | 68 | 58 | 34 | 46 | 44.6 | 44.3 |
| Hazen | -- | -- | -- | -- | 41 | 47 | 90 | 93 | 37 | 62 | 44.3 | 44.3 |
| Morex | 38 | 11 | 45 | 36 | 28 | -- | -- | -- | -- | -- | ---- | ---- |
| Primus II | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | ---- | ---- |
| Robust | -- | -- | -- | -- | 42 | 43 | 81 | 86 | 37 | 58 | 46.1 | 46.6 |
| Steptoe | 33 | 16 | 50 | 31 | 14 | 19 | 55 | -- | -- | -- | ---- | ---- |
| Dif. req. sig. | 8.8 | 2.9 | NS | 8.2 | 6.5 | 5.0 | 5.2 | 6.6 | NS | 8.7 | ---- | NS |

Tests on Agricultural Research and Development Center, Mead.

Table 15. Northeast District barley variety tests. 1978-1987. No 1981 data.

| Variety | Grain yield bu/A | | | | | | | | | | Weight lb/bu | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1978 | 1979 | 1980 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1984-87 average | 1987 | 1984-87 average |
| Azure | -- | 77 | 79 | 83 | 36 | 72 | 62 | -- | -- | -- | ---- | ---- |
| Beacon | 42 | 62 | -- | -- | -- | -- | -- | -- | -- | -- | ---- | ---- |
| Bowers | 52 | 81 | 85 | 91 | 40 | 82 | 62 | 59 | 57 | 65 | 42.0 | 47.6 |
| Custer | 56 | 78 | 75 | 76 | 40 | 62 | 63 | 56 | 57 | 60 | 42.3 | 46.2 |
| Hazen | -- | -- | -- | -- | 39 | 78 | 62 | 59 | 58 | 64 | 42.5 | 47.6 |
| Lud | 40 | 73 | -- | -- | -- | -- | -- | -- | -- | -- | ---- | ---- |
| Morex | 48 | 72 | 78 | 73 | 33 | -- | -- | -- | -- | -- | ---- | ---- |
| Nordic | 44 | 75 | -- | -- | -- | -- | -- | -- | -- | -- | ---- | ---- |
| Primus II | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | ---- | ---- |
| Robust | -- | -- | -- | -- | -- | 74 | 59 | 52 | 50 | 59 | 44.2 | 48.9 |
| Steptoe | 48 | 83 | 68 | 81 | 24 | 57 | 69 | -- | -- | -- | ---- | ---- |
| Dif. req. sig. | 4.7 | 7.3 | NS | 8.1 | 5.4 | 6.5 | 5.2 | NS | NS | NS | NS | NS |

Tests on Northeast Research and Extension Center. Dixon County.

Table 16. West District nonirrigated barley variety tests. Cheyenne County. 1981-1987.

| Variety | Grain yield bu/A | | | | | | | | Weight lb/bu | | 1987 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1985-87 average | 1987 | 1985-87 average | Height inches | Flower June |
| Azure | 45 | 93 | 57 | 64 | 42 | -- | -- | -- | ---- | ---- | -- | -- |
| Bowers | 38 | 94 | 49 | 65 | 40 | 50 | 59 | 50 | 46.8 | 44.5 | 33 | 14 |
| Bumper | -- | -- | 37 | 59 | -- | -- | -- | -- | ---- | ---- | -- | -- |
| Custer | 66 | 88 | 50 | 72 | 39 | 60 | 55 | 51 | 47.0 | 44.7 | 34 | 11 |
| Hazen | -- | -- | 58 | 63 | 47 | 46 | 52 | 48 | 47.9 | 45.9 | 34 | 14 |
| Klages | -- | -- | -- | 52 | -- | -- | -- | -- | ---- | ---- | -- | -- |
| Lindy | -- | -- | -- | 53 | -- | -- | -- | -- | ---- | ---- | -- | -- |
| Piston | -- | -- | -- | 57 | -- | -- | -- | -- | ---- | ---- | -- | -- |
| Premier | -- | -- | -- | 60 | -- | -- | -- | -- | ---- | ---- | -- | -- |
| Robust | -- | -- | -- | -- | 41 | 40 | 47 | 43 | 48.6 | 46.8 | 35 | 14 |
| Steptoe | 56 | 100 | 45 | 65 | 54 | 58 | 65 | 59 | 45.2 | 42.9 | 31 | 13 |
| Teton | -- | -- | 42 | -- | 49 | -- | -- | -- | ---- | ---- | -- | -- |
| Dif. req. sig. | 11.4 | 6.7 | 6.3 | 7.5 | 5.9 | 5.8 | 6.6 | 9.5 | 1.3 | 1.0 | 1.6 | 0.7 |

Tests on High Plains Agricultural Laboratory, Sidney.

Table 17. West District irrigated barley variety tests. 1981-1987.

| Variety | Grain yield bu/A | | | | | | | | Weight lb/bu | | 1987 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1985-87 average | 1987 | 1985-87 average | Flower June | Height inches |
| Azure | 99 | 73 | 76 | 79 | 102 | -- | -- | -- | ---- | ---- | -- | -- |
| Bowers | 102 | 72 | 72 | 80 | 103 | 62 | 70 | 78 | 47.2 | 48.2 | 15 | 35 |
| Bumper | -- | -- | 53 | 80 | -- | -- | -- | -- | ---- | ---- | -- | -- |
| Custer | 83 | 72 | 61 | 73 | 81 | 69 | 70 | 73 | 47.8 | 46.4 | 14 | 35 |
| Hazen | -- | -- | 72 | 81 | 106 | 64 | 65 | 78 | 48.2 | 48.6 | 13 | 35 |
| Klages | -- | -- | -- | 75 | 106 | -- | -- | -- | ---- | ---- | -- | -- |
| Morex | 95 | 64 | 62 | -- | -- | -- | -- | -- | ---- | ---- | -- | -- |
| Premier | -- | -- | -- | -- | 101 | -- | -- | -- | ---- | ---- | -- | -- |
| Robust | -- | -- | -- | -- | 94 | 61 | 56 | 70 | 48.4 | 49.1 | 14 | 35 |
| Steptoe | 124 | 81 | 57 | 83 | 111 | 68 | 80 | 86 | 45.7 | 45.8 | 16 | 34 |
| Teton | -- | -- | 60 | -- | 128 | -- | -- | -- | ---- | ---- | -- | -- |
| Dif. req. sig. | 16.0 | 13.8 | NS | NS | 19.1 | NS | NS | NS | 1.6 | 2.0 | 2.0 | NS |

Location of tests (counties): 1980 Scotts Bluff and Box Butte; 1981 Box Butte; 1982-1985 Scotts Bluff and Box Butte; 1986 Box Butte; 1987 Box Butte.

Table 18. Southeast District spring wheat variety tests. Saunders County. 1981-1987.

| Variety | Grain yield bu/A | | | | | | | | Weight lb/bu | | 1987 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1984-87 average | 1987 | 1984-87 average | Flower June | Height inches |
| Butte | 13 | 17 | 21 | 18 | 24 | 32 | -- | -- | ---- | ---- | -- | -- |
| Butte 86 | -- | -- | -- | -- | -- | 39 | 23 | -- | 55.5 | ---- | 7 | 27 |
| Guard | -- | -- | 21 | 28 | 37 | 41 | 23 | 32 | 55.7 | 56.1 | 7 | 25 |
| James | 13 | 10 | 21 | 25 | 24 | -- | -- | -- | ---- | ---- | -- | -- |
| Len | 14 | 14 | 13 | 18 | 22 | -- | -- | -- | ---- | ---- | -- | -- |
| Marshall | 6 | 12 | 21 | 23 | 20 | 28 | 23 | 24 | 53.8 | 52.3 | 10 | 24 |
| Olso | -- | 11 | 14 | 24 | 38 | 36 | 17 | 29 | 52.2 | 52.6 | 7 | 23 |
| Stoa | -- | -- | -- | 32 | 33 | -- | 23 | -- | 53.7 | ---- | 9 | 29 |
| Tammy | -- | -- | -- | -- | -- | 24 | 16 | -- | 52.5 | ---- | 8 | 26 |
| Wheaton | -- | -- | -- | 25 | 29 | 32 | 18 | 26 | 47.1 | 50.4 | 8 | 23 |
| Karl Triticale | -- | -- | -- | -- | -- | 25 | 16 | -- | 39.0 | ---- | 7 | 24 |
| Kramer Triticale | -- | -- | -- | -- | -- | 34 | 17 | -- | 39.8 | ---- | 8 | 25 |
| Marval Triticale | -- | -- | -- | -- | -- | 24 | 21 | -- | 38.2 | ---- | 9 | 32 |
| Dif. req. sig. | 5.6 | 2.6 | 4.5 | 4.0 | 3.6 | 2.6 | 2.0 | NS | ---- | 2.4 | 0.9 | 1.6 |

Triticale yields on 60 lb/bu basis. For yield at 48 lb/bu, multiply x 1.25.
Tests on Agricultural Research and Development Center, Mead.

Table 19. Northeast District nonirrigated spring wheat variety tests. Dixon County. 1982-1987.

| Variety | Grain yield bu/A | | | | | | | Weight lb/bu | | 1987 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1984-87 average | 1987 | 1984-87 average | Flower June | Height inches | Lodging % |
| Butte | 36 | 15 | 42 | 43 | 24 | -- | -- | ---- | ---- | -- | -- | -- |
| Butte 86 | -- | -- | -- | -- | -- | 38 | -- | 56.3 | ---- | 5 | 31 | 2 |
| Guard | -- | -- | 47 | 45 | 32 | 33 | 39 | 55.3 | 57.9 | 6 | 29 | Tr. |
| James | 35 | 18 | 44 | 35 | -- | -- | -- | ---- | ---- | -- | -- | -- |
| Len | 30 | 17 | 37 | 36 | -- | -- | -- | ---- | ---- | -- | -- | -- |
| Marshall | 29 | 25 | 42 | 40 | 28 | 37 | 37 | 57.1 | 58.0 | 9 | 29 | 2 |
| Oslo | 28 | 17 | 40 | 43 | 26 | 31 | 35 | 51.9 | 54.2 | 4 | 28 | 1 |
| Stoa | -- | -- | 47 | 44 | 35 | 42 | 42 | 57.6 | 59.2 | 9 | 34 | 6 |
| Tammy | -- | -- | -- | -- | 28 | 23 | -- | 52.2 | ---- | 8 | 29 | 5 |
| Wheaton | -- | -- | 48 | 43 | 32 | 30 | 38 | 50.0 | 55.3 | 7 | 28 | 2 |
| Karl Triticale | -- | -- | -- | -- | 28 | 25 | -- | 40.7 | ---- | 5 | 30 | 2 |
| Kramer Triticale | -- | -- | -- | -- | 34 | 35 | -- | 43.1 | ---- | 5 | 32 | 3 |
| Marval Triticale | -- | -- | -- | -- | 30 | 34 | -- | 43.7 | ---- | 6 | 38 | 9 |
| Dif. req. sig. | 4.8 | 1.9 | 4.0 | 4.3 | 3.3 | 3.9 | 4.5 | ---- | 2.2 | 0.8 | 1.2 | 3.0 |

Triticale yields on 60 lb/bu basis. For yield at 48 lb/bu, multiply x 1.25.
Tests on Northeast Research and Extension Center, Concord.

Table 20. West District nonirrigated spring wheat variety tests. Cheyenne County. 1981-1987.

| Variety | Grain yield bu/A | | | | | | | | Weight lb/bu | | 1987 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1984-87 average | 1987 | 1984-87 average | Flower June | Height inches |
| Butte | 22 | 45 | 28 | 34 | 28 | 28 | -- | -- | ---- | ---- | -- | -- |
| Butte 86 | -- | -- | -- | -- | -- | -- | 11 | -- | 57.2 | ---- | 14 | 34 |
| Guard | -- | -- | 21 | 35 | 29 | 33 | 9 | 27 | 55.2 | 56.2 | 14 | 30 |
| James | 28 | 53 | 28 | 38 | 33 | -- | -- | -- | ---- | ---- | -- | -- |
| Len | 16 | 48 | 28 | 36 | 32 | -- | -- | -- | ---- | ---- | -- | -- |
| Marshall | 11 | 44 | 31 | 38 | 29 | 29 | 8 | 26 | 52.3 | 54.6 | 18 | 25 |
| Olso | -- | 46 | 27 | 30 | 30 | 34 | 14 | 27 | 53.6 | 54.5 | 12 | 27 |
| Stoa | -- | -- | -- | 41 | 32 | 27 | 10 | 28 | 53.8 | 55.0 | 17 | 38 |
| Tammy | -- | -- | -- | -- | -- | 34 | 10 | -- | 53.8 | ---- | 15 | 32 |
| Wheaton | -- | -- | -- | 36 | 36 | 34 | 11 | 29 | 54.6 | 54.5 | 15 | 27 |
| Karl Triticale | -- | -- | -- | -- | -- | 34 | 34 | -- | 49.2 | ---- | 11 | 31 |
| Kramer Triticale | -- | -- | -- | -- | -- | 34 | 25 | -- | 46.7 | ---- | 11 | 34 |
| Marval Triticale | -- | -- | -- | -- | -- | 27 | 22 | -- | 47.1 | ---- | 12 | 42 |
| Dif. req. sig. | 9.0 | 4.6 | 3.5 | 5.1 | NS | 5.0 | 8.8 | NS | 1.5 | NS | 1.2 | 2.0 |

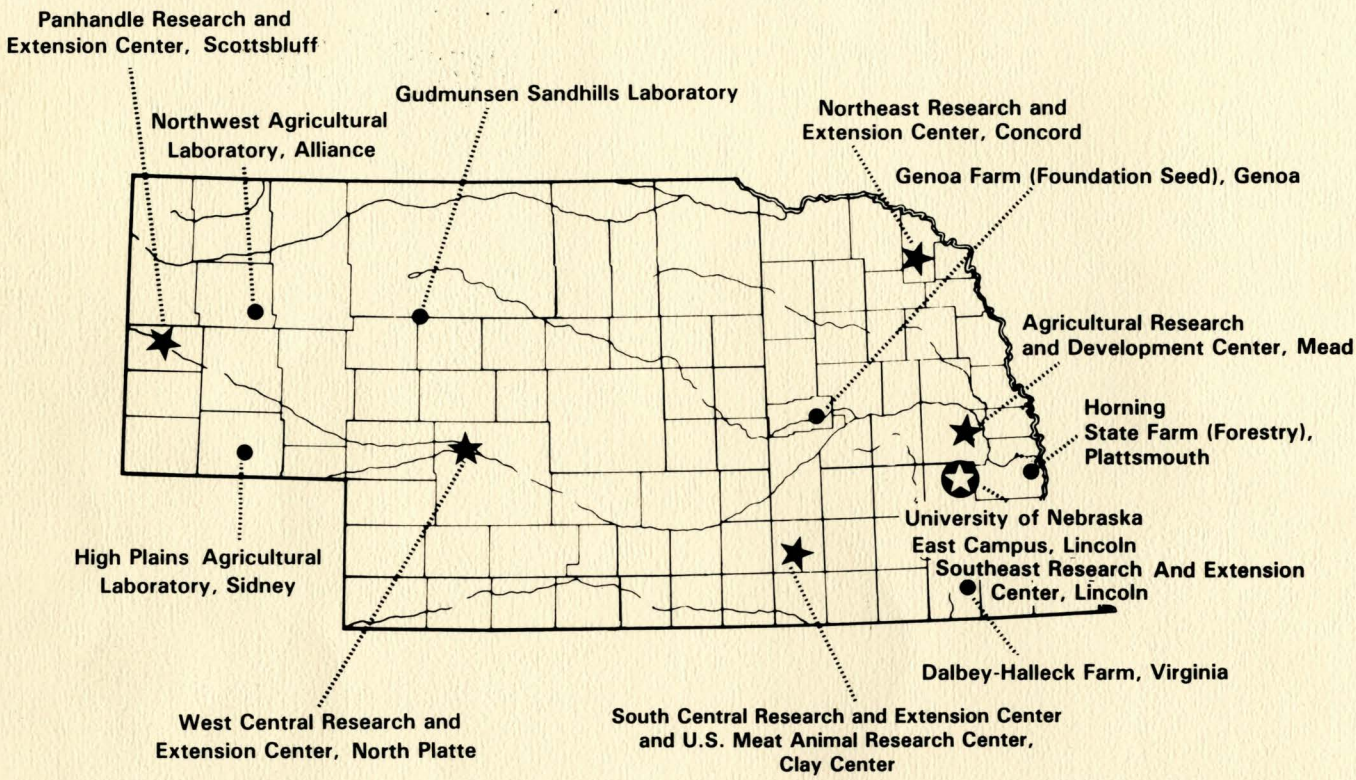
Triticale yields on 60 lb/bu basis. For yield at 48 lb/bu, multiply x 1.25.
Tests on High Plains Agricultural Laboratory, Sidney.

Table 21. West District irrigated spring wheat variety tests. 1981-1987.

| Variety | Grain yield bu/A | | | | | | | | Weight lb/bu | | 1987 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1984-87 average | 1987 | 1984-87 average | Flower June | Height inches |
| Butte | 60 | 38 | 38 | 60 | 60 | 39 | -- | -- | ---- | ---- | -- | -- |
| Butte 86 | -- | -- | -- | -- | -- | -- | 51 | -- | 58.1 | ---- | 17 | 34 |
| Guard | -- | -- | -- | 51 | 71 | 40 | 49 | 53 | 58.7 | 59.1 | 16 | 31 |
| James | 63 | 44 | 38 | 57 | 76 | -- | -- | -- | ---- | ---- | -- | -- |
| Len | 64 | 43 | 37 | 51 | 73 | -- | -- | -- | ---- | ---- | -- | -- |
| Marshall | 61 | 43 | 40 | 62 | 80 | 42 | 36 | 55 | 55.0 | 58.3 | 16 | 34 |
| Olso | -- | 46 | 35 | 63 | 75 | 42 | 52 | 58 | 55.2 | 56.8 | 16 | 36 |
| Stoa | -- | -- | -- | 57 | 77 | 43 | 44 | 55 | 56.3 | 58.3 | 17 | 33 |
| Tammy | -- | -- | -- | -- | -- | 44 | 41 | -- | 55.9 | ---- | 17 | 37 |
| Wheaton | -- | -- | -- | 55 | 81 | 40 | 45 | 55 | 54.5 | 56.5 | 16 | 38 |
| Karl Triticale | -- | -- | -- | -- | -- | -- | 63 | -- | 51.9 | ---- | 17 | 29 |
| Kramer Triticale | -- | -- | -- | -- | -- | 44 | 61 | -- | 48.4 | ---- | 17 | 33 |
| Marval Triticale | -- | -- | -- | -- | -- | 41 | 48 | -- | ---- | ---- | 17 | 37 |
| Dif. req. sig. | NS | NS | NS | NS | 9.8 | NS | 9.8 | NS | 1.8 | 1.3 | 0.4 | NS |

Triticale yields on 60 lb/bu basis. For yield at 48 lb/bu, multiply x 1.25.
Location of tests (counties): 1981 Box Butte; 1982-1985 Scotts Bluff and Box Butte; 1986 Box Butte; 1987 Box Butte.

# AGRICULTURAL RESEARCH AND EXTENSION FOR ALL OF NEBRASKA




The Agricultural Research Division of the Institute of Agriculture and Natural Resources is responsible for studies to broaden our basis of knowledge for agricultural production. Research centers and field laboratories provide applied information for development of Nebraska's largest industry — agriculture.

The Cooperative Extension Service transmits data and provides interpretation to users through Extension Agents and Specialists. Extension Agents may be contacted through 85 local Extension offices for additional information and more specific recommendations.

Nebraska is a large state and has great variation due to topography and the continental type of climate. The elevation ranges from 1,000 feet to near a mile high in the northwest portion of the state, rainfall varies from less than 15 to more than 35 inches per year, and the soil types vary from sands to heavy clays. The research and extension programs thus are broad in subject matter and geography, resulting in the need for various centers, satellite locations, and local offices.