

Stallion

A new high performing white oat



LON HALL, PROJECT LEADER

SDSU OAT BREEDING PROGRAM

Origin:

'Stallion' was tested as experimental line SD000366-36. SD000366-36 was a F₀ derived line developed from a three-way cross. In 1996, the line SD89507 was crossed with an F₁ having SETTLER/SD93068 parentage. The complete pedigree is Settler/4/Nodaway70/Dal//MN73231/3/Dumont/5/Settler/6/ND750432/Moore//II75-3402/4/MN723/7229//Dal/Nodaway70/3/Spear/Kelsey//Nodaway70/MN72-3.

Agronomic traits:

Stallion, a tall white-hulled spring oat, was developed by the South Dakota Agricultural Experiment Station and released in 2006. It provides the growers an oat variety with a combination of yield stability, high yield potential, high test weight, and medium to high protein content

(Table 1). Stallion has moderate resistance to crown rust, barley yellow dwarf virus (BYDV), and smut (Table 2). It also has a medium-late maturity, fair straw strength, and excellent milling qualities, as indicated by its high groat and above average beta-glucan percentages (Table 3). Stallion has been observed to have 6- to 10-inch taller variants. They are more distinguishable in stress environments; the maximum ratio calculated was 1 tall in 200 plants.

Recommended cultural practices:

Do not over fertilize. Total available nitrogen should not exceed 100 lb/acre; this includes legume credits. Do not plant a high seeding rate; keep the seeding rate at a maximum of 28 live seeds per square foot. For weed control, apply MCPA amine or Bronate at labeled rates.

Crop Performance Testing and UMOPN regional trials data:

Table 1. Comparison of grain yield, test weight, plant height, and protein content with selected varieties in the 2003-2005 South Dakota Standard Variety Oat Performance Trials.

| Variety | Top yield group* frequency, % | Grain yield bu/acre | Test weight lb/bu | Plant height inches | Grain protein, % |
|-------------------|----------------------------------|------------------------|----------------------|------------------------|---------------------|
| HiFi | 100 | 119 | 35.7 | 36.0 | 14.9 |
| Stallion** | 100 | 115 | 37.3 | 37.0 | 16.1 |
| Morton | 100 | 113 | 35.7 | 37.7 | 15.5 |
| Loyal | 100 | 109 | 35.6 | 36.4 | 16.0 |
| Jerry*** | 60 | 103 | 36.4 | 35.3 | 15.7 |
| Don | 0 | 99 | 36.1 | 30.6 | 14.8 |
| Reeves | 20 | 95 | 36.4 | 36.0 | 15.8 |
| Hyttest | 20 | 88 | 38.7 | 37.2 | 17.9 |
| No. Loc.-X years | 21 | 21 | 21 | 21 | 21 |

* Top yield group at the .05 LSD level

** New release in 2006

*** Jerry was the most commonly grown variety in South Dakota in 2006.

Table 2. Reaction to crown rust (CR), barley yellow-dwarf virus (BYDV), and smut in the 2005 Uniform Midseason Oat Performance Nursery (UMOPN).

| Variety | CR % + Pustule Rating* | | | BYDV or Red leaf (0-9**) | | | Avg. | Smut %*** St Paul MN |
|----------|------------------------|-------------|-------------|--------------------------|------------|------------------|------|----------------------------|
| | St Paul MN | Fargo ND | Brkgs SD | Urbana*** IL | Ames IA | W. Laf.*** IN | | |
| Stallion | 25MR-MS | 5 MR | 35 MR | 5.0 | 0 | 4.0 | 3.0 | 30 |
| Jerry | 45MS-S | 60 S | 97 S | 5.5 | 2 | 3.8 | 3.8 | 70 |

* Size of pustule: R=Resistant (very small), M=Moderate (medium), S=Susceptible (large).

** Disease scale: 0= no disease symptoms, 9= all plants infected.

*** Inoculated.

Table 3. Comparison of Stallion, Jerry, and test means over 35 entries grown in the 2005 UMOPN.

| Variety | Julian heading date | Lodging % | Groat % | Groat protein % | Groat protein yield (lb/a) | Groat oil % | Beta- glucan % |
|---------------|---------------------------|--------------|------------|-----------------------|-------------------------------------|-------------------|----------------------|
| Stallion | 168.7 | 52 | 69.9 | 17.0 | 495 | 6.4 | 3.9 |
| Jerry | 166.1 | 33 | 69.6 | 16.1 | 423 | 5.0 | 4.3 |
| Test avg. | 168.4 | 42 | 69.1 | 16.0 | 446 | 5.4 | 3.7 |
| No. locations | 14 | 11 | 11 | 11 | 11 | 11 | 3 |

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