

is to harvest the field as soon as possible after the grain is ripened. The use of the swather with pick-up attachments, and cutting the stubble low, aids in retrieving heads of wheat which might otherwise be lost.

Stems of small grains were examined in 1946 and 1947 on the North Central Experiment Station plots at Minot. Fifty stems were collected at random in the three-foot end margin of each plot. The percentage of infestations are listed in Table 3.

CLINTON AND OTHER NEW OATS VARIETIES

By

T. E. Stoa, Agronomist

Farmers intending to purchase seed of Clinton, or other new rust resistant varieties of oats now offered, will want to consider the facts set forth below, based on results and observations made during the last 4 years that Clinton has been under test in North Dakota.

Clinton probably will not outyield other good varieties now grown unless disease seriously injures the other varieties. In the absence of serious disease conditions several other varieties may outyield Clinton.

Clinton, however, has certain advantages, other than capacity for high yield, which justifies its introduction and use, especially in the southeastern and eastern counties of the State where serious disease conditions are more likely to occur than elsewhere in the State, and where early oats have preference. Clinton is early, has very strong straw, grows taller than several other early varieties, does not shatter readily and has a high weight per bushel.

Clinton is resistant to more races of stem rust than Vicland, Tama, Marion, Rainbow or Ajax; has good resistance to most races of crown rust (susceptible to race 45) and is resistant to *Helminthosporium* blight, a disease which can injure Vicland, Tama and other selections from the Victoria-Richland cross. This blight was observed in some North Dakota fields of Vicland in 1947, which suggests a possible more serious increase in this disease, especially in the southeastern sections of the State where soil moisture conditions are most favorable, and Vicland and Tama are most extensively grown. Varieties Marion, Rainbow, Ajax are also resistant to *Helminthosporium* blight and yield high, but in a year of serious crown rust could be injured.

Other new varieties like Benton, Bonda and Mindo compare favorably with Clinton in resistance to the rusts, also to *Helminthosporium* blight. All class as early ripening, have relatively thin hulls and high test weight. Benton grows taller than Clinton, thus might be suited better to the lighter soils, in areas where

early oats are desired. Benton has not shown a better ability to yield than Clinton, in fact may not yield quite as well¹. Bonda, like Benton, grows up tall and produces a large plump berry of excellent weight. Bonda is slightly later in ripening, but its yields under our conditions have usually not measured up with other new varieties. Mindo will usually yield better than Bonda and compares with Vicland in length of straw and time of maturity.

These varieties all afford more protection against serious oats diseases. However, they should not be expected to excel in yield in years and under conditions where this protection is not needed.

¹Bond cross No. 3648, recently named Cherokee and recommended for Kansas, is another selection from the cross which produced Clinton and Benton. This selection has the disease resistance of Clinton and Benton but has shorter straw, ripens earlier and should hardly be expected to yield any better.

MONTCALM BARLEY

By

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To those who are interested in growing Montcalm barley the following characteristics of this variety should be recognized.

Montcalm is a blue kernel, six-rowed, smooth awned barley, which pearls blue and so may be, when graded, unfairly classified as non-mellow, taking it out of the malting grades. Color of pearled barley, however, is not a true indication of mellowness. A blue barley, like O.A.C. 21, is recognized as having certain desirable malting properties.

In Canada, Montcalm is accepted as a malting barley. Results from small scale malting tests made at the Malting Laboratory, Madison, Wisconsin, have been promising, but no large scale tests have yet been conducted.

Montcalm has been grown in trials at the North Dakota Experiment Station in the last three years. At Fargo, Montcalm has outyielded both Wis. 38 and "L" (or Kindred). In the northeastern and north central sections it has outyielded "L" but yielded slightly less or about the same as Wis. 38. In the absence of serious disease and under favorable moisture conditions Wis. 38 is still likely to be the top-yielding malting variety. In the south central and western counties Montcalm has not given consistently good yields. This is probably due to a lack of resistance to drought and high temperatures.

Montcalm is a medium late maturing variety being slightly earlier than Wis. 38 and later than "L". It has a stronger straw than "L" and slightly stronger than Wis. 38, and especially a stronger neck. At Fargo in 1947, Montcalm shattered some. This shattering may have been due to the very dry conditions during the harvest period, causing the heads to be brittle.