Registration of Crop Varieties

REGISTRATION OF LUTHER BARLEY

R. A. Nilan and C. E. Muir

"LUTHER" barley (Hordeum vulgare L., eneud. Lam.), CI 13340, was developed by R. A. Nilan and C. E. Muir of the Department of Agronomy, Washington State University. The variety originated from the treatment of seeds of "Alpine" barley (CI 19578, reg. 68) with a 0.0038 M solution of the chemical mutagen, diethyl sulfate, for 3/4 hours at 80°C with the solution being changed every half hour. The treatment was made in cooperation with C. F. Konzak. The M1 generation was grown in an isolated plot and the mutant plant that gave rise to Luther was selected in M2 in 1962. At the time of release the mutant line was in M4.

Luther is a 6-rowed, rough-awned, facultative winter, feed barley. Compared to Alpine, Luther is 6 to 8 inches shorter, stiffer strawed, about 10 bushels higher in yield, and slightly more winterhardy. It produces one to two more tillers per plant and a slightly longer spike with more kernels. Luther is equal to Alpine in heading date and in disease reaction, but its kernels are slightly smaller than Alpine. Other plant and spike characteristics are similar to Alpine. Tests in a fistulated cow indicate Luther has feed quality similar to Alpine and "White Winter."

Luther was released jointly by Washington State University and the University of Idaho in the fall of 1966 and is well adapted to the barley-growing areas of Eastern Washington and Northern Idaho. Breeder seed will be maintained by the College of Agriculture, Washington State University.

The variety is named in honor of the late Dr. Luther Smith, who initiated the induced mutation research on barley at Washington State University and who was world renowned for his contributions to plant mutagenesis and cytogenetics.

REGISTRATION OF RANCHER BLUE LUPINE

Ian Forbes and Homer D. Wells

"RANCHER" blue lupine (Lupinus angustifolius L.) is a disease-resistant forage variety developed by the Crops Research Division, Agricultural Research Service, U. S. Department of Agriculture, in cooperation with the University of Georgia, College of Agriculture Experiment Stations, Coastal Plain Station, Tifton. Rancher was released in 1965. It is the first blue lupine forage (low-alkaloid) variety to be resistant to gray leaf spot caused by Stemphylium solani C. F. Weber and S. botryosum Wallr., and anthracnose caused by Glomerella cingulata (Ston.) Spauld. & Schenk.

Rancher is the seed increase of five F2 plants derived from a selected F1 plant out of a three-way cross S+13 × ("Blanco" × P+202-1C). S+13 is a gray, leaf-spot-resistant, high alkaloid (bitter) line. Blanco is a low-alkaloid (sweet) soft-seeded, genetically marked variety that originated as an F2 reselection from the cross WFB × "Borre". Selection 54-202-1C, from the cross WFB × P+1 16555, is anthracnose resistant, genetically marked, and bitter. WFB is a bitter line marked by white flowers and seeds, no purplish pigmentation of cotyledons, and light green foliage. Borre is a Swedish-bred sweet variety. P+1 16555, introduced from a wild stand in Portugal, was anthracnose resistant, hardseeded, and bitter.

The known genotype of Rancher is: "An" (anthracnose resistance), gl/gl (gray leaf-spot resistance),icus icus (low alkaloid), s s (soft seeds), and leue leue (white flowers and seeds and absence of purple pigment in cotyledons with light green foliage). Results of field comparisons of Rancher with Blanco and Borre blue lupine show that "good" seed yields of Rancher blue lupine are possible in north-central Florida where gray leaf spot is epidemic every year, whereas Borre and Blanco seed production was almost nil. In the absence of disease injury at Tifton, forage yield and quality and seed production of Rancher equalled that of Borre and Blanco. A grazing trial showed that Rancher was highly palatable to beef animals, and a digestibility test in the rumen of a fistulated Jersey steer indicated that the forage of mature plants had good digestibility (62.9%). Rancher was no more resistant than Blanco or Borre to injury by low temperatures. Some damage results from air temperatures just below 20°F, and total loss of the crop may result from temperatures below 10°F. Breeder seed is maintained by the Georgia Coastal Plain Experiment Station. Other seed classes permitted under standards of the Georgia Crop Improvement Association are one generation each of foundation, registered, and certified.

REFERENCES

1 Registered by the Crop Science Society of America. Approved for publication by the Director of Research, College of Agriculture, Washington State University. Received Mar. 10, 1967.
2 Agronomist and Senior Experimental Aide, Department of Agronomy, Washington State University. Pullman, Washington, 99163.

REGISTRATION OF AUSABLE OATS

John E. Graffius and R. L. Kiesling

"AUSABLE" oats (Avena sativa L.), CI 7670, Mich. 56-22-1417, resulted from the cross of "Beaver" × "Carly" × "Clinton" 3x. "Clinton" 4x, "Minor" made at East Lansing, Michigan, in 1956. Final selection was made in the F5 in 1958. It was named and released in 1963.

Ausable combines high yield with high test weight and good lodging resistance under Michigan conditions. It is a large seeded, late, white oat.

As would be inferred from the parentage, it has only the Clinton crown rust resistance. It contains both types ABC and BC for stem rust resistance.

Ausable has field tolerance to Septoria avenae, the organism causing black stem disease, and to barley yellow dwarf virus. It is adapted to central and northern Michigan.

Breeder seed is maintained by the Michigan Agricultural Experiment Station.

The origin, history, description, and performance of Ausable have been published.