REGISTRATION OF NUGAINES WHEAT

O. A. Vogel and C. J. Peterson, Jr.


Nugaines (a sib of 'Gaines') was selected from the cross CI 1353/CI 12692/'Burt.' Nugaines was referred to as Selection 7 and WA 379. It has a bearded, lax spike with long, midwide, white glumes. The kernels are white, soft, and midlong with a shallow crease.

Winterhardiness of Nugaines is equal to that of Gaines, but it is less hardy than the hard red winter wheats 'McCall' and 'Wanser.' It is shatter-resistant and fairly easy to thresh. Nugaines has equaled or exceeded the yields of 'Gaines' over a 5-year period of testing in Washington. The test weight of Nugaines exceeds that of Gaines.

Nugaines has more adult plant resistance to stripe rust than Gaines but is equally susceptible in the seedling stage. Nugaines is susceptible to Cercospora foot rot, Fusarium foot rot, stem rust, and snow mold. It has moderate resistance to common, flag, and stinking smut. Nugaines is susceptible to several new races of dwarf bunt. It has slightly less postharvest dormancy than 'Kharkof' under Pullman condition and a crown depth of 20 ± 5 mm.

Nugaines has better milling characteristics than Gaines. Baking tests have shown that Nugaines flour has good quality for pastries, cookies, and soft white wheat products. Nugaines flour is not suitable for making bread.


REGISTRATION OF INDIANA SYN. C

ALFALFA GERMPLASM

T. E. Thompson, J. D. Axtell, R. E. Shade, and R. D. Meeks

INDIANA SYN. C alfalfa (Medicago sativa L.) was developed by the Purdue University Agricultural Experiment Station. This synthetic was officially released as germplasm to alfalfa breeders in June 1973.

Indiana Syn. C is a six-clone synthetic with two clones each originating from germplasm pools NSA-W4 and MSB-W4, released jointly by the North Carolina Agricultural Experiment Station and the Agricultural Research Station, U.S. Department of Agriculture. The other two clones, Syn. AA (866) and 65-125, were developed from plant material in the Purdue University Breeding program. All clones were selected on the basis of their phenotype and progeny tests for high combining ability for resistance to leaf yellowing caused by potato leafhoppers [Empoasca fabae (Harris)]. Clone 63-125 was consistently rated as having a significantly higher level of resistance than the other five parental clones of this synthetic. As determined under field conditions, the progeny of clone 63-125 had significantly lower potato leafhopper populations than other progenies or check varieties. Therefore, Indiana Syn. C contains leafhopper resistance due to either antibiosis or nonpreference in addition to plant tolerance.

In a 3-year yield test at Lafayette, Indiana, Indiana Syn. C produced 3% more dry matter than 'Vernal.' Compared with 'Vernal' it has about 50%, the number of plants resistant to bacterial wilt; it has approximately the same level of resistance to Phytophthora root rot, and it has slightly less fall dormancy.

REGISTRATION OF NORTH DAKOTA 1381 AND 2749 BARLEY GERMPLASM

A. B. Schooler

NORTH DAKOTA 1381 (CI 15245) and North Dakota 2749 (CI 15244) are spring barley (Hordeum sp.) lines developed at the North Dakota Agricultural Experiment Station and released as germplasm for breeding purposes because of their semidwarf characteristics and strong straw.

North Dakota 1381 (GP No. 15) has the following parentage: Hordeum bulbosum 517 / H. vulgare L. /2/ 'Trophy' /3/ H. bulbosum 55 / H. vulgare L. /2/ 'Trail.' The H. bulbosum and H. vulgare L. were autotetraploids. F1 plants were used in all crosses and final selection was in the F2 generation. North Dakota 1381 has the H. bulbosum cytoplasm. Identifying characteristics of North Dakota 1381 are rough red awns that deliquesce at or near maturity, a height of approximately 49 cm compared with 80 cm for Trail, six-rowed spikes with small lateral kernels compared with cultivated six-rowed barley, long rachilla hairs, colorless aleurone, and resistance to certain strains of the pathogen causing spot blotch (Helminthosporium sativum Pam., King, and Bakke).

The parentage of North Dakota 2749 (GP No. 16) is as follows: H. depressum / H. compressum /2/ 'H. bulbosum 55 / H. vulgare L. /2/ 'Trail' /3/ H. bulbosum 517 / H. vulgare L. /2/ 'Trail.' The H. bulbosum and H. vulgare L. were autotetraploids. The F1 plants of the second cross were treated with colchicine, but chromosome doubling did not occur; therefore, the cross to Trail (third cross) resulted in a diploid plant.

1 Registered by the Crop Science Society of America. Published with the approval of the Purdue University Agricultural Experiment Station. Received March 29, 1974.
2 Formerly Assistant Professor, Department of Agronomy (Presently Research Geneticist ARS, USDA, North Dakota State University, Fargo, ND 58102; Associate Professor, Department of Agronomy, Assistant Professor, Department of Entomology, and former Graduate Research Assistant, Department of Agronomy, Purdue University, West Lafayette, IN 47907).