Three generations of selfing and selection followed the last cross. North Dakota 2749 has the *H. depressum* cytoplasm, rough and slightly red awns that dehisce at maturity, long racilla hairs, colorless aleurone, a height of approximately 63 cm compared with 80 cm for Traill, two-rowed spikes with smaller kernels than the average two-rowed cultivated barley. It is resistant to some strains of the spot blotch pathogen.

North Dakota 1381 has yielded about twice as much grain as North Dakota 2749 and 75%, as much as Traill in North Dakota. Reciprocal crosses to either of the two lines usually differ in phenotypic expression. Therefore, my results have indicated that selection in the F₁ generation is preferred to F₂ and North Dakota 1381 and North Dakota 2749 should be used as female parents. The time of emasculation and for cross pollination appears to be a very critical period and crosses usually are more difficult to obtain than crosses between cultivated barley varieties.

North Dakota 1381 and North Dakota 2749 are completely self-fertile, and in most cases no significant amount of sterility has been observed following crosses to cultivated barley.

Ten- to 15-g samples of North Dakota 1381 and North Dakota 2749 may be obtained from Plant Genetics and Germplasm Institute, Beltsville Agricultural Research Center-West Beltsville, MD 20705, or from Department of Agronomy, North Dakota State University, Fargo.

### REGISTRATION OF ARIZONA 5919-8 HOODED BARLEY GERMPLASM¹

*Reg. No. GP 17*

A. D. Day, R. K. Thompson, and F. M. Carasso

Arizona 5919-8 (CI 15483) is a six-rowed, hooded, spring barley type that originated from the cross ‘Harlan’ (CI 7008) × ‘Hooded Atlas’ made in 1959. The first evaluation for forage potential was made in the F₂ generation at Tucson, Arizona, in 1961 with the original selection identified as Arizona 5919-8. Arizona 5919-8 is suggested for use for pasture and hay and in forage breeding programs where awns are objectionable. Extensive pasture and hay ratings on progenies from the original cross were made in the F₂ and F₃ generations and all awned and undesirable forage types were eliminated. One hundred F₂ lines were composites to produce breeder seed of Arizona 5919-8.

Yield tests of Arizona 5919-8 were conducted for pasture and hay production at Mesa and Yuma, Arizona, from 1963 through 1968. It was compared with Harlan and ‘Harlan II,’¹ the most productive forage barleys in the irrigated areas of the Southwest. Arizona 5919-8 produced 94% as much pasture forage as Harlan II in 10 simulated pasture yield tests from 1963 through 1968. It produced as much hay as Harlan II in five hay yield tests conducted from 1966 through 1968.

Arizona 5919-8 has upright heads, hoods, and light blue aleurone. It is similar to Harlan II in tillering capacity, leaf to stem ratio, tolerance to lodging, and plant height, and grain yield. Plants of Arizona 5919-8 are relatively uniform in vegetative growth and appearance. Up to 0.01% awned plants have been observed in field plantings.

Upon written request, limited amounts of seed will be distributed by the Arizona Crop Improvement Association, c/o Department of Agronomy and Plant Genetics, College of Agriculture, University of Arizona, Tucson, Arizona 85721.