Flowering of most plants from B68195-25 is 8 days later than Gila and 5 days later than Royal, although some plants flower as early as Gila. Early-maturing lines can be obtained by selection.

In field disease nurseries in Arizona, B68195-25 has been resistant to root rot (Phytophthora drechsleri Tuch), rust (Puccinia carthami), and Verticillium wilt (Verticillium albo-atrum). An occasional plant has been affected by an unidentified yellows. B68195-25 does not have resistance to root rot and wilt equal to that of the highly resistant breeding line ‘Briggs’.

In 1 year of testing, B68195-25 compared favorably with all other high-yielding cultivars in early plantings from 15 December to 15 January at Mesa, Marana, and Yuma. For 2 years, yield of B68195-25 from later plantings in February at Mesa averaged 1.8, 1.7, 1.3, and 2.2 times higher than the yield of Royal, ‘AC-1’, ‘Rio’, and Gila, respectively. Oil content of B68195-25 ranged from 42 to 44%.

B68195-25 germplasm was composited as an F_{1} derived from the double cross (12812 × 12025) × (12417 × 377-29); then B68195-25 was derived as an F_{2} selection from B68195. The pericarp of 12812 and 12417 have very thin hulls, resulting in high percentage of oil of the achene. The three-layered seed coat color of the parent is: light tan for both prominent layers (inner and outer epidermis) for 377-29; and brown for both prominent layers of the remaining two parents. Seed with light colored seed coats yield light colored oil from oil extraction. 12025 has a light-tan pericarp with a very thin phytomelanin content in the thin pericarp. The two prominent layers of the seed coat are light tan. Because the parent 12417 yields a dark-colored, low quality oil, B68195-25 was tested for oil quality characteristics. In 1970 cold extraction of oil in the laboratory yielded a light-yellow oil that heat bleached to a clear color at 300 C. A bleach of color by heat suggests good oil quality. In 1972 and 1973, laboratory extraction of oil from B68195-25 under temperatures between 90 and 130 C yielded a light yellow oil that heat-bleached. The 130 C is the approximate temperature of commercial screw-type oil expellers now in use. B68195-25 should be tested for oil quality with a commercial extraction mill before it is released as a cultivar. Seed stock will be maintained by L. H. Zimmerman, Dep. of Plant Sciences, Univ. of Arizona, Tucson, AZ 85721.

REGISTRATION OF CORNERSTONE MALE-STERILE WHEAT GERMPLASM

C. J. Driscoll

‘CORNERSTONE’ wheat, (Triticum aestivum L. var. durum), developed as a chromosomal male-sterile germplasm at the University of New South Wales, Australia. Cornerstone was derived from the chromosomal 4A/‘Pitic 62’ following application of pollen to the latter cultivar. The male was crossed once to normal Pitic 62 and then on to Condor, with selection for heterozygosity resulting in this crossing. Self-fertile, which contains homozygous male sterile and fertile plants. The Cornerstone germplasm. The chromosome complement is 21 bivalents.

The mutant locus of as the 310 mutant, is located on the 4A chromosome. Male sterility appears to be complete, have indehiscent anthers. Heterozygotes, fertile. Selfing of heterozygotes produces a 3:1 ratio of fertile to sterile plants. Male sterility appears to be complete, with gametes bearing the mutation, is present in all other plant attributes, house and field conditions.

The Cornerstone mutant has a potential for hybrid wheat and for production of sterile lines and two-row (sibl//Norin 10/Brevor is a hard red spring wheat bred for high oil content and disease resistance. The Cornerstone mutant has a potential for hybrid wheat and for production of sterile lines and two-row durum varieties.

REGISTRATION OF D6962 DURUM WHEAT GERMPLASM

J. S. Quick, J. D. Miller, and B. J. Donnelly

‘D6962’ (Triticum turgidum L. var. durum), CI 17437, is a spring durum wheat derived by the North Dakota Agric. Exp. Stn., North Dakota State Univ., Fargo, in cooperation with the ARS, USDA. D6962 was selected from the cross ‘Leeds’/D65152 made in 1966. D65152 is D61189 (Leeds) a highly productive and high-yielding spring durum wheat developed by the North Dakota Agric. Exp. Stn., North Dakota State Univ., Fargo, in cooperation with the ARS, USDA. ARS 74-43. D6962 was selected from the cross ‘Leeds’/D65152 made in 1966. D65152 is D61189 (Leeds) a highly productive and high-yielding spring durum wheat developed by the North Dakota Agric. Exp. Stn., North Dakota State Univ., Fargo, in cooperation with the ARS, USDA. ARS 74-43.

D6962 has averaged 65 cm in plant height, or about 35 cm taller than the parent ‘Sierra’. D6962 has been tested in the Uniform Regional Research Conference on utilization of safflower, Albany, California, and has been reported to have yield and quality similar to other commercial varieties. D6962 has been released as a new cultivar. Seed of D6962 will be maintained by L. H. Zimmerman, Dep. of Plant Sciences, Univ. of Arizona, Tucson, AZ 85721.