

9200227

EXHIBIT "A" - ORIGIN AND BREEDING HISTORY

Durakling AA-Spr 1993

"D 5456" durum wheat was derived by Farmers Marketing Corporation from a single F₂ head selection from a genetic male sterile facilitated recurrent selection (MSFRS) population. The population was developed by the University of Arizona and released to the public as AZ-MSFRS-86 Quality Enhanced Spring Durum Wheat Germplasm. The bulk F₃ was grown at Sacaton, Arizona in 1988. Twenty-four representative heads were snapped and grown in individual rows at Post Falls, Idaho. Thirteen F₆ rows were harvested and bulked as being uniform and free from genetic male sterility. Seed was increased at Maricopa, Arizona in 1989 with little evidence of further segregation. The present designated breeder seed was increased at Yuma, Arizona in 1991. One hundred head selections were grown at Maricopa, Arizona in 1991 to form the basis for the future foundation seed program.

D 5456 is uniform and stable. Rarely occurring (.001%) genetic recessive male sterile plants were rogued from the breeders seed increase at Yuma. Up to .05% of plants had awns which were grey or grey-black at maturity. Many of these were removed. The 1992 certified seed increase is expected to have grey or black tinted awns at a frequency of .02%. Some further occurrences of male sterility at .001% level is expected from outcross seed set on unidentified male sterile plants. The head row increase for foundation seed in 1992 is expected to reduce or eliminate male sterile and dark awn occurrence.