NAMING AND RELEASE OF "GRAND MESA"

The Colorado Agricultural Experiment Station announces the release of 'Grand Mesa' disease-resistant pinto bean (*Phaseolus vulgaris* L.) variety with high yield potential. Grand Mesa was developed by personnel at Colorado State University and tested in the Cooperative Dry Bean Nursery, Western Regional Bean Trial, Midwest Regional Performance Nursery, and Colorado Crop Testing Program as CO 75511.

Grand Mesa is an F_3 derived line from the single cross 34596-1/RNK-178 made in 1994. The cross between upright pinto breeding line 34596-1 and the experimental line RNK-178 was made to combine upright architecture and resistance to the prevalent strains of rust in a pinto cultivar. The inbred line 34596-1 was derived from the cross CO 56249/83b235. CO 56249 is a pinto line that has good agronomic and seed characteristics, but is susceptible to the predominant races of bean rust found in Colorado. 83b235 is a high-yielding experimental pinto line from the University of Idaho, developed by James Myers and R.J. Kolar. RNK 178 is an experimental line developed by Rogers NK (Syngenta) with high yield potential and rust resistance. In 1997, one $F_{3:5}$ line was selected and bulked for testing and used to produce 24 plant rows for seed increase at Fruita, Colorado. Approximately 18 of the 24 plant rows were bulked based on uniformity for plant type and seed characteristics to produce the initial breeder seed.

Grand Mesa has upright architecture in most environments (Type IIb), however in some environments it expresses semi-vine architecture (Type III). It also possesses resistance to the prevalent races of rust in the High Plains, bean common mosaic virus resistance, and white mold tolerance. Rust resistance is conditioned by the Ur-3 allele from the parent, RNK-178. Resistance to bean common mosaic appears to be conditioned by the recessive allele $bc2^2$ from the line 34596-1, however that has not been confirmed in duplicate tests. White mold tolerance ratings is based on field performance at three locations in 2000. Yield levels averaged 320 and 91 pounds per acre less than 'Montrose' and 'Buster', respectively, across 13 location-years in 1999 and 2000.

Foundation seed of Grand Mesa was released to seed producers in April 2001. Application for PVP under Title V will be sought. A "Technology Fee" paid to the Certification agency in the state of production will be assessed on all Registered and Certified seed produced. Small amounts of seed are available from Mark Brick, Department of Soil and Crop Sciences, Colorado State University, Fort Collins, CO 80523, mbrick@lamar.colostate.edu.

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