



Desert Durum wheat “Desert King”

DEVELOPMENT

Desert King was developed by the University of California wheat breeding program lead by Dr. Jorge Dubcovsky and research associates Oswaldo Chicaiza and Lee Jackson. Selection for disease and pest resistance, yield, was conducted at the UC Desert Research and Extension Center and in grower’s fields in the San Joaquin and Sacramento Valley. Pasta quality was evaluated at the California Wheat Commission. Funding for this project came from the University of California, the California Wheat Commission and the California Crop Improvement Association.

BREEDING HISTORY AND DESCRIPTION

Desert King is a short-stature spring durum variety with erect leaves and excellent lodging resistance. The original material was received from CIMMYT as line CD96235 in 1997. Selections of rows with good agronomic traits and disease resistance were made at Tulelake in Sept of 1998. One row was selected and advanced into a Preliminary and Advanced yield trials at Imperial Valley in 1999 and 2000 respectively. A pure seed increase at Tulelake was used to set up Elite yield trials at Imperial Valley and San Joaquin Valley in 2001. This line was tested as UC1375 in Elite and Regional Trials in 2002, 2003 and 2004. During the three years of testing Desert King showed high yield potential and good pasta quality. Breeder seed was produced at UC Davis during the 2002-2003 growing season. Foundation seed was harvested at Imperial Valley in 2004.

ADAPTATION

Desert King was tested from 2002 to 2004 under irrigation in the Imperial, San Joaquin, and Sacramento valleys, and in 2004 in Arizona. During the three years of testing Desert King was among the highest yielding varieties in all the environments, indicating a wide adaptability and good yield stability. Desert King represents a significant yield increase over the current dominant variety Kronos and maintains the high quality standard required for the Dessert Durum class.

PEST AND DISEASE RESISTANCE

In the 2002 and 2003 filed tests at Davis, Kings, Kern, Madera and Imperial Valley, Desert King was resistant to the current races of leaf rust, stripe rust, black point, Barley Yellow dwarf virus. Artificial inoculation tests at the Disease Laboratory in Minnesota showed moderate size pustules without chlorosis or necrosis when tested with leaf rust Mexican race MX15-1 and with European leaf rust races F2-1 and ESP16.

AVERAGE YIELD DATA 2002-2004

Variety	Sacramento	San Joaquin	Imperial	Arizona
Desert Ki	6,290 lbs/a	6,570 lbs/a	7,080 lbs/a	5,961 lbs/a
Kronos	4,300 lbs/a	5,290 lbs/a	6,540 lbs/a	5,630 lbs/a
Ocotillo	4,810 lbs/a	5,440 lbs/a	6,990 lbs/a	5,261 lbs/a

Considering the average of the last three years of trials in CA and one year in AZ, Desert King has shown significant higher

yields than the dominant variety Kronos in the Imperial Valley (540-lbs higher), the San Joaquin Valley, (1280-lbs higher), and Arizona (331-lbs higher). Complete yield and quality data is available at <http://agronomy.ucdavis.edu/Dubcovsky/Breeding/Oro.pdf>.

SEED CLASSES AND PRODUCTION

Seed classes of Desert King are Breeder, Foundation, Registered and Certified. The University of California Foundation Seed Project, Davis maintains breeder and Foundation seed classes. Foundation, Registered and Certified seed production are each limited to 3-years. Seed production of Foundation, Registered and Certified classes is limited to California. A total of 9,270 lbs of Foundation seed is available for production of Registered and Certified seed.

INTELLECTUAL PROPERTY PROTECTIONS

Desert King is a public variety. It is protected under Plant Variety Protection.

ALLOCATION and LICENSING

Foundation seed of Desert King is distributed by the University of California Foundation Seed Program to licensed brokers and seed houses **twice annually**, fall and spring. Off-cycle requests are considered on a case-by-case basis.

To obtain information and/or a license for Desert King contact the University of California, Davis Technology Transfer Center:

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