No. 7800003

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Douglass W. King Company

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *seventeen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC [illegible]D OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EX[illegible] OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, [illegible]ORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT [illegible] THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. [illegible]NITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A [illegible] CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPEC[illegible] THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT

'DK-33S'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington *this* tenth *day of* August *in the year of our Lord one thousand nine* [illegible]*undred and* seventy-eight

Attest:

[illegible]

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

[illegible]

[illegible]*retary of Agriculture*

Application 7800003

FORM GR-470
(1-76)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
PLANT VARIETY PROTECTION OFFICE
NATIONAL AGRICULTURAL LIBRARY
BELTSVILLE, MARYLAND 20705

FORM APPROVED
OMB NO. 40-R3712

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: *See Reverse.*

1a. TEMPORARY DESIGNATION OF VARIETY	1b. VARIETY NAME	FOR OFFICIAL USE ONLY	
Expt. No. 72SA133	DK-33S	PV NUMBER 7800003	
2. KIND NAME	3. GENUS AND SPECIES NAME	FILING DATE 10-12-77	TIME 3:00 A.M. P.M.
Common Wheat	Triticum aestivum	FEE RECEIVED	DATE
4. FAMILY NAME (BOTANICAL)	5. DATE OF DETERMINATION	$ 250.00	10-12-77
Gramineae	May 1975	$ 250.00	10-12-77
		$ 250.00	8-2-78

6. NAME OF APPLICANT(S)	7. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)	8. TELEPHONE AREA CODE AND NUMBER
Douglass W. King Company	4627 Emil Road P.O. Box 20320 San Antonio, Texas 78286	512-661-4191

9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (Corporation, partnership, association, etc.)	10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION	11. DATE OF INCORPORATION
Corporation	Texas	Mar. 1, 1946

12. Name and mailing address of applicant representative(s), if any, to serve in this application and receive all papers:

Mr. Blake Williams, Jr.
President
Douglass W. King Company
4627 Emil Road
P.O. Box 20320
San Antonio, Texas 78286

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

[X] 13A. Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*

[X] 13B. Exhibit B, Novelty Statement.

[X] 13C. Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*

[X] 13D. Exhibit D, Additional Description of the Variety.

14A. Does the applicant(s) specify that seed of this variety be sold by variety name only as a class of certified seed? *(See Section 83(a). (If "Yes," answer 14B and 14C below.)* [X] YES [ ] NO

14B. Does the applicant(s) specify that this variety be limited as to number of generations? [X] YES [ ] NO

14C. If "Yes," to 14B, how many generations of production beyond breeder seed? ONE (1) year each [X] FOUNDATION [X] REGISTERED [X] CERTIFIED

15. Does the applicant(s) agree to the publication of his/her (their) name(s) and address in the Official Journal? [X] YES [ ] NO

16. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be deposited upon request before issuance of a certificate and will be replenished periodically in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

Jan 18, 1978
(DATE)

Blake Williams, Jr.
(SIGNATURE OF APPLICANT)

(DATE)

(SIGNATURE OF APPLICANT)

INSTRUCTIONS

GENERAL: Send an original copy of the application, exhibits and $250.00 fee to U.S. Dept. of Agriculture, Agricultural Marketing Service, Grain Division, National Agricultural Library, Beltsville, Maryland 20705. (See Section 180.175 of the regulations and rules of practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

ITEM

5 Give the date the applicant determined that he had a new variety based on (1) the definition in Section 41(a) of the Act and (2) the date a decision was made to increase the seed.

13a Give (1), the genealogy, including public and commerical varieties, lines, or clones used, and the breeding method. (2), the details of subsequent stages of selection and multiplication. (3), the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4), evidence of stability.

13b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties; (1) identify these varieties and state all differences objectively; (2) Attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.

13c Fill in the Exhibit C, Objective Description form for all characteristics, for which you have adequate data.

13d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe; such as; plant habit, plant color, disease resistance, etc.

14A If "YES" is specified (seed of this variety be sold by variety name only as a class of certified seed) the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled or published or the certificate has been issued. However, if the applicant specifies "NO", he may change his choice. (See Section 180.15 of the Regulations and Rules of Practice.)

ITEM 13 EXHIBIT A (Revised)

Origin and History of DK-33S Hard Red Spring Wheat

Class: Hard red spring, bread wheat, *Triticum aestivum* L.

Name: Variety DK-33S. Owned by Douglass W. King Seed Company. The name has been cleared and approved by the Trademark Division, U.S. Department of Agriculture. (See letter).

Developed by I.M. Atkins, Breeder and Consultant, and Louis Jupe, Agronomist, for Douglass W. King Seed Company.

Plant Protection Certificate (To be assigned)

Breeding and increase procedures:

Parentage is unknown. In the fall of 1969, approximately 1000 wheat hybrids, remnant F_2 seed, were received from the CIMMYT group in Mexico City.

Breeding procedures: F_3 bulk hybrid rows were grown in 1969-70 season at San Antonio, Texas. Severe thinning of stands, owing to low temperatures and drouth, gave excellent natural selection. All hybrids were harvested in bulk. A large bulk population was grown in 1971, from which some plants were selected and sent to Aberdeen, Idaho for a summer increase. Bulk F_5 and some F_6 lines were grown in 1972.

1973 Bulk populations, plant selections and head selections grown and superior lines summer increased at Aberdeen.
1974 Bulk populations, selected lines, head rows and rows for preliminary yield estimates were started.
1975 Replicated and preliminary yield trials of many strains. DK-33S and others grown at several locations. Seed purification started on a few lines.
1976 Replicated and preliminary yield trials at several locations. Purification and small field increases made in the summer at Aberdeen, Idaho.
1977 Continue replicated trials, quality tests, disease tests etc. Increase DK-33S and other strains, purify.
1978 Planned to further increase, purify foundation seed.

Stability: Variety DK-33S has shown excellent uniformity and stability of plant type in yield trials and increase fields, both fall and spring seeded, through three seasons. The off-type plants observed and continuously rogued out include ~~white~~-chaffed spikes, those slightly taller and later than DK-33S and awnless plants from natural crossing. Off-type plants should not exceed one plant in 2000 in foundation seed fields and not more than one 1000 in certified fields.

Semi-dwarf varieties are frequently more variable in height than standard height varieties and more subject to natural crossing. Off-type plants are more easily visable.

ITEM 13B EXHIBIT B, NOVELTY STATEMENT (Revised).

For

DK-33S Hard Red Spring Wheat

DK-33S is most similar to the Mexican semi-dwarf variety
7/12/78 as per letter of 7/8/78
Caje~~nn~~me 71. The new variety differs from Caje~~nn~~me 71 in having statistically significantly wider leaves (0.059 in.), longer heads (0.50 in.), longer awns (0.58 in), longer internodes (2.79 cm.) but shorter beaks (-0.43 in.). Also, the kernels are slightly shorter and wider but weigh about the same. These major differences differentiate DK-33S from Caje~~nn~~me 71 and all other varieties tested or observed. Under other conditions, some other differences may be observed between DK-33S and other varieties.

Variety DK-33S has outyielded Caje~~nn~~me 71 by 6.2 bushels per acre in 8 replicated trials and the test weight averaged 0.9 pounds greater. DK-33S has superior resistance to leaf rust to Caje~~nn~~me 71 or Penjamo 62. It is about one or two days later in maturity.

Original

FORM APPROVED. OMB NO. 40-R3712

FORM GR-470-6 (10-16-72)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782

EXHIBIT C (Wheat)

OBJECTIVE DESCRIPTION OF VARIETY
WHEAT (TRITICUM SPP.)

DK-335

INSTRUCTIONS: See Reverse.

NAME OF APPLICANT(S): Douglass King Company

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code): 4627 Emil Road, P.O. Box 20320 San Antonio, Texas 78220

FOR OFFICIAL USE ONLY

PVPO NUMBER: 7800003

VARIETY NAME OR TEMPORARY DESIGNATION: DK-335

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. 0 8 9 or 0 9) when number is either 99 or less or 9 or less.

1. KIND:

[1] 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

2. TYPE:

[1] 1 = SPRING 2 = WINTER 3 = OTHER (Specify) ______

[2] 1 = SOFT 2 = HARD 3 = OTHER (Specify) ______

[2] 1 = WHITE 2 = RED 3 – OTHER (Specify) ______

3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:

[0 6 2] FIRST FLOWERING from Jan. 18 seeding [0 6 8] LAST FLOWERING

4. MATURITY (50% Flowering):

[0 0] NO. OF DAYS EARLIER THAN .... [0]

[0 2] NO. OF DAYS LATER THAN Cajeme 71 ..... [0]

1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS

5. PLANT HEIGHT (From soil level to top of head):

[0 6 4] CM. HIGH

[0 8] CM. TALLER THAN Cajeme 71 .... [0]

[0 5] CM. SHORTER THAN Penjamo 62 ..... [0]

1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS

6. PLANT COLOR AT BOOTING (See reverse):

[2] 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHER COLOR:

[1] 1 = YELLOW 2 = PURPLE

8. STEM:

[1] Anthocyanin: 1 = ABSENT 2 = PRESENT

[1] Waxy bloom: 1 = ABSENT 2 = PRESENT

[1] Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT

[1] Internodes: 1 = HOLLOW 2 = SOLID

[0 3] NO. OF NODES (Originating from node above ground)

[1 4] CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

9. AURICLES:

[1] Anthocyanin: 1 = ABSENT 2 = PRESENT

[1] Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:

[2] Flag leaf at booting stage: 1 = ERECT 2 = RECURVED 3 = OTHER (Specify): ______

[1] Flag leaf: 1 = NOT TWISTED 2 = TWISTED

[1] Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT

[1] Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT

[1 2] MM. LEAF WIDTH (First leaf below flag leaf)

[2 1] CM. LEAF LENGTH (First leaf below flag leaf):

FORM GR-470-6 (REVERSE) DK - 335

11. HEAD:

[1] Density: 1 = LAX 2 = DENSE

[1] Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER *(Specify)* ______

[4] Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED

[4] Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED 5 = BROWN 6 = BLACK 7 = OTHER *(Specify)*: ______

[9.2] CM. LENGTH

[1 1] MM. WIDTH

12. GLUMES AT MATURITY:

[3] Length: 1 = SHORT *(CA. 7 mm.)* 2 = MEDIUM *(CA. 8 mm.)* 3 = LONG *(CA. 9 mm.)*

[3] Width: 1 = NARROW *(CA. 3 mm.)* 2 = MEDIUM *(CA. 3.5 mm.)* 3 = WIDE *(CA. 4 mm.)*

[2] Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE

[2] Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

[1] 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

[1] 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

[3] 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

[1] Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL

[1] Cheek: 1 = ROUNDED 2 = ANGULAR

[2] Brush: 1 = SHORT 2 = MEDIUM 3 = LONG

[1] Brush: 1 = NOT COLLARED 2 = COLLARED

[?] Phenol reaction *(See instructions)*: 1 = IVORY 2 = FAWN 3 = LT. BROWN 4 = BROWN 5 = BLACK

[3] Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER *(Specify)* ______

[0 6] MM. LENGTH [6 3] MM. WIDTH [0 3] GM. PER 100 SEEDS

17. SEED CREASE:

[1] Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI'

[1] Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'LEMHI'

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[0] STEM RUST *(Races)* ______

[1] LEAF RUST *(Races)* ______

[0] STRIPE RUST *(Races)* ______

[0] LOOSE SMUT

[1] POWDERY MILDEW

[0] BUNT

[0] OTHER *(Specify)* ______

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[0] SAWFLY

[1] APHID *(Bydv.)*

[1] GREEN BUG

[0] CEREAL LEAF BEETLE

[0] OTHER *(Specify)* ______

HESSIAN FLY RACES: [0] GP [0] A [0] B [0] C [0] D [0] E [0] F [0] G

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Cajeme 71 (7/21/78)	Seed size	Cajeme 71
Leaf size	"	Seed shape	"
Leaf color	"	Coleoptile elongation	"
Leaf carriage	"	Seedling pigmentation	"

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.W. Briggle and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.

(b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. *(See attachment.)*

LEAF COLOR: Nickerson's or any recognized color fan should be used to determine the leaf color of the described variety.

ITEM 13D EXHIBIT D (Revised)

Spring Wheat DK-33S : Additional Descriptions (Revised)

<u>Procedures</u> : The check varieties of spring wheat listed in Exhibit D-Form 3712 are not grown commercially in South Texas. The Mexican semi-dwarf varieties Cajeme 71 and Penjamo 62 are the most widely grown commercial varieties available for comparison. A few other varieties are grown on a small scale and a considerable acreage of winter wheat is grown in the area.

7/12/78

Plant and spike measurements were taken on 25 to 100 samples from two or more locations. Environment influences these characters greatly so averages by location may not agree closely in all cases. The range of measurements on some characters is given for information. In order to provide comparable data, all awn, beak and glume characters were measured from samples taken near the center of the spike. Seed measurements were taken on 200 to 500 kernels in units of 10 each and weights were taken in units of 500 kernels so data could not be statistically analyzed. Statistical analysis was determined on the San Antonio data were 50 or 100 measurements were made for each character.

7/12/78

Character	Mean difference	t. value	Significant 0.01	0.5
	DK-33S vs Caseme 71			
Seedling leaf length, in.	0.038	0.306	2.01	2.68
Mature leaf length, cm.	0.920*	2.313	2.01	2.68
Mature leaf width, in.	0.059**	6.923	2.01	2.68
Head length, in	0.506**	7.809	2.01	2.68
Head width, mm.	0.045	0.399	2.01	2.68
Outer glume length, mm	0.004	0.676	2.01	2.68
Outer glume width, mm	0.017	0.520	2.01	2.68
Internode length, cm	2.790**	8.97	2.01	2.68
Awn length, in.	0.581**	8.250	2.01	2.68
Beak length,mm.	-0.434**	22.303	2.01	2.68
Yield, bu/A	6.2 *	2.195	2.31	3.36
Test weight, lbs.	0.90 *	2.113	2.36	3.50

Item 13 D Exhibit D (revised)

1. Kind: Wheat, common hard red spring, variety DK-33S.

2. Type: The variety DK-33S spring wheat is a day-length insensitive, hard red spring bread wheat. Owing to the mild climate of South Texas, this type of wheat can be grown from mid-winter seeding (Dec.15 to Feb.10), where it will mature in May. This type may also be spring seeded at the higher elevations of the High Plains of Texas (Feb.15 to Mar.15), where it will mature in late June.

3. Season: The number of days from seeding to first flowering may range from 60 to 80 days in South Texas but may be 90 to 100 days on the High Plains.

4. Maturiey: Variety Dk-33S is usually 2 to 4 days later than JB 7/12/78 Cajeme 71 and Penjamo 62.

5. Plant height: Plants of DK-33S average about 8 centimeters taller than Cajeme 71 and about 5 centimeters shorter than Penjamo 62.

6,7,8,9 See chart

10. Leaves: The seedling leaves of DK-33S were no different than Cajeme 71 but the mature leaves were significantly longer and wider than Cajeme 71.

11. Head or spike: The spikes of DK-33S impress one as being very large as they are lax with widely spaced spikelets. They averaged .51 inch longer and 0.045 inch wider than Cajeme 71 (significant), which in itself has large heads. The heads were nearly an inch longer than Penjamo 62 at Bushland.

Item 13 D Exhibit D (continued)

11. Head or spike (continued): The glumes averaged about the same as Penjamo 62. 7/12/78 The chaff is brown similar to Cajeme 71. That of Penjamo 62 is white. The awns of DK-33S were significantly longer (0.58 inch) than Cajeme 71 but the beaks were significantly shorter.

12 <u>Glumes</u>: Similar to Cajeme 71.

13, 14, 15, See Chart.

16. <u>Seed:</u> The kernels of DK-33S averaged 0.5 mm shorter than Cajeme but slightly wider. The weight per 100 kernels slightly higher, probably not significant. Phenol tests by the Texas State Laboratory classed the seed as 395 brown and 5 faun in color.

17. See chart.

18. <u>Diseases:</u> DK33S was selected as a leaf rust resistant plant ahd has shown rather low infection. In the last year some leaf rust has been observed on it.

<u>Quality</u>: See attached pages for report on quality.

BOX 629
GIDDINGS TX 78942

Designated by Sender: Wheat, DK-33S Lot No.

Phenol Test $3.00

Received: 11-3-77 Test Requested - Complete Germ. Only Purity Only

KIND 283	PURE SEED %	INERT MATTER %	OTHER CROP SEED %	WEED SEED %	GERMINATION %	HARD SEED %	DORMANT SEED %	NOXIOUS WEEDS PER POUND
	Phenol	Test	Only					

Date Completed 11-8-77

Submitted By
06696
Douglass W. King Co., Inc.
P. O. Box 20320
San Antonio, Texas 78286

Additional Information
Phenol Test:
395 Brown Seed, 5 Fawn Seed

Signed: Kenneth W. Boatwright
KENNETH W. BOATWRIGHT – Seed Analyst

TDA-SI D-12

TEXAS DEPARTMENT OF AGRICULTURE

Test No. 33711

SEED LABORATORY
REAGAN V BROWN COMMISSIONER
BOX 629
GIDDINGS TX 78942

Designated by Sender: Wheat, Cajeme 71 Lot No.

Phenol Test $3.00

Received: 11-3-77 Test Requested - Complete Germ. Only Purity Only

KIND 283	PURE SEED %	INERT MATTER %	OTHER CROP SEED %	WEED SEED %	GERMINATION %	HARD SEED %	DORMANT SEED %	NOXIOUS WEEDS PER POUND
		PHENOL	TEST					

Date Completed 11-8-77

Submitted By
06696
Douglass W. King Co., Inc.
P. O. Box 20320
San Antonio, Texas 78286

Additional Information
Phenol Test
394 Brown Seed, 6 Brown-Black Seed

Signed: Kenneth W. Boatwright
KENNETH W. BOATWRIGHT – Seed Analyst

Yield and Agronomic Data On Douglass King Seed Co. Spring Wheat Strains Compared To Cajeme 71 And Penjamo 62 Commercials

B 7/12/78

Variety	Yield of grain, bushels per acre: Bushland 1977	Renner 1977	San Ant. 1977	San. Ant. 1976	Lytle 1976	San A. 1975 RN	San A. 1975 PN	San A. 1974	Average	Leaf rust %	Test weight lbs/bu	Plant height cm.	Approx. Date headed 1977
Cajeme® 71	27.2	26.0	21.4	14.3	32.8	27.7	27.1	40.9	27.1	50	56.2	56	4-1
Penjamo 62	-	24.9	24.7	34.8	37.3	24.8	24.0	40.5	30.2*	38	57.0	69	4-1
Experimental Strains													
DK 72 SA 122	30.8	26.0	26.1	23.6	37.3	30.4	26.1	45.0	30.0	Tr	58.4	57	4-1
72SA 133	31.7	23.2	31.4	26.6	42.6	38.2	40.7	31.5	33.2	18	57.1	64	4-3
72SA 149	31.8	25.6	32.4	30.7	46.9	34.0	29.8	28.7	32.5	Tr	57.1	69	4-5
74SA 18	32.5	25.5	37.1	24.6	41.4	-	-	-	36.1*	1	-		4-3

* Adjusted

Data On Plant Measurements - Douglass King Company

Item	Commercial Cajeme 71	Commercial Penjamo 62	Experimental 72SA122	Experimental 72SA133	Experimental 72SA149
Leaf length, Cm Seedling	5.9	–	6.5	6.6	4.8
Mature - Renner	18.5 (16-20)	19.1 (13-24)	19.3 (14-25)	20.0 (16-24)	19.3 (11-23)
Hereford	20.7 (17-24)	19.4 (16-27)	19.0 (15-24)	20.8 (17-24)	20.8 (15-29)
Leaf width - Renner, mm	10.2 (8-13)	9.7 (6-13)	10.6 (9-14)	11.6 (9-14)	10.3 (6-13)
Head length, mm. San Antonio	79.9 8.0cm	72.2	63.0 (48-76)	85.7 5.0cm	76.3
Bushland	78.3 (6.8-8.6)		69.5 (50-86)	93.5	78.2
Head width, mm. San Antonio	10.1 (7-13)	11.6 (8-14)	9.9 (9-11)	11.4	10.4
Bushland	10.5		10.1 (8-12)	11.3	10.6
Outer glume length mm. San Antonio	10.0 (10-11)	9.5	8.0 (4-10)	10.1	9.6
Bushland	11.6		8.9	10.5	9.9
Outer glume, width mm. San Antonio	3.9 (3-9)	3.9	3.5 (3-4)	4.4	4.4
Bushland	4.5		4.0	4.6	4.4
Second Internode, Cm San Antonio	11.5 (6-18)	14.2	11.4	14.5	13.5
Bushland	14.4		17.6 (13-20)	17.9 (15-20)	16.2 (11-19)
Beak length, mm. San Antonio	12.4 (6-18)	6.1	3.6 (2-7)	3.2	10.3
Bushland	14.6		4.7	3.5	11.8
Awn length, Cm. San Antonio	6.0 (4-8)	7.1	4.8	7.8	5.6
Bushland	5.9 (3-7)		4.5 (3-7)	5.8 (3-7)	5.2 (3-8)
Seed length, mm San Antonio	6.7	6.5	5.9	6.4	6.2
Lytle	6.8	6.2	6.0	6.2	6.2
Seed width, mm San Antonio	3.0	3.4	3.1	3.3	3.1
Lytle	3.2	3.0	3.2	3.5	3.2
Seed weight -100 grains San Antonio	3.9	3.6	3.2	4.2	3.2
Lytle	3.4	3.1	3.1	3.5	3.0

QUALITY CHARACTERISTICS OF DK-33S SPRING WHEAT
COMPARED WITH APPROPRIATE CHECK VARIETIES

The new variety, DK-33S, was compared in two seasons and from two locations with appropriate check varieties. The 1976 increase plot grown in South Texas could only be compared with Sturdy, a high quality winter wheat. Data shown in the table indicate that DR-33S was satisfactory in all respects and comparable to the variety Sturdy.

Increase fields were grown in the hard red spring wheat area of Idaho in 1975 and 1976. In 1975 the variety Caje~~nn~~me 71, also grown commercially in South Texas, and the variety Borah were used as check varieties. For some unknown reason, DK-33S had lower protein in the wheat and flour than the check varieties. Perhaps for this reason, the farinograph curve of DK-33S was weaker than the other varieties. Most other quality characteristics measured were equal to that of Caje~~nn~~me 71 and Borah. Loaf volume was satisfactory but the dough was sticky.

The 1976 increase field of DK-33S was compared with Protar, an acceptable commercial variety of that area. A sample of Sturdy was also milled for comparison. The quality of DK-33S was classed satisfactory in all respects and equal to Protar and Sturdy. It was classed as a strong gluten wheat.

The new variety DK-33S is believed to be satisfactory in quality for growing in South Texas. The Lubbock Grain Exchange has graded the seed as hard red spring, with the sample submitted having 10 percent dark, hard vitreous kernels.

Quality Characteristics Of DK-33S Spring Wheat
Compared with Appropriate Check Varieties

	1976 Fall South Texas		1975 Spring seeded			1976 Spring seeded		
Item	DK-33S	Sturdy*	DK-33S	Cajeme 71 (m 7/12/78)	Borah	DK-33S	Protar	Sturdy*
Moisture %			15.3	14.4	13.3	14.8	13.8	14.5
Wheat protein	12.7	14.1	10.5	14.7	11.6	14.9	13.1	15.0
Flour protein	10.5	12.1	8.9	12.8	10.6	13.2	12.0	13.7
Ash	.46	.52	.40	.48	.50	.55	.57	.48
Absorption	53.8	57.6	64.1	62.3	61.7	67.6	65.5	66.5
Mixing time	14	14	15.0	14.0	13	—	—	—
Mixing peak	4	8½	5	9½	6	4	4½	10
Stability	8	15	10	11½	11	6¾	8¾	
M.T.I.	50	30	25	25	30	20	20	30
Fermentation						Normal	Normal	Normal
Loaf volume cc			2200	2225	2400	755 VG	790 V.G	740 VG
Quality			Fair	Good	Mellow	—	—	—
Texture			Fair	Good	Tri-open	open	open	open
Oven-spring			Sticky	Tri-sticky	Good	—	—	—
Crust						Smooth	Smooth	Smooth
Crust color			Light	Gold	Good			
Crust rating						94 V Sl DG	.	96 BC
Valorimeter						53	58	78
Milling yield						69.7	71.0	68.9
Comments						Very strong	Very strong	Very strong