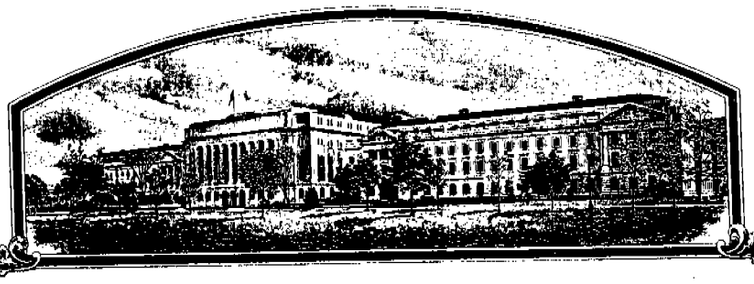

No. 7600010

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Oklahoma Agricultural Experiment Station

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 SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW*[THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, R IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT IETY THEREFROM] TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. E UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

*[Waived]

WHEAT

'Osage'

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* 18th *day of* March *in the year of our Lord one thousand nine hundred and* seventy-seven

Attest:

Commissioner
Plant Variety Protection Offi
Grain Division
Agricultural Marketing Service

Secretary of Agriculture

FORM GR-470
(12-15-72)

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

FORM APPROVED
OMB NO. 40-R3712

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: *See Reverse.*

1. VARIETY NAME OR TEMPORARY DESIGNATION: Osage	2. KIND NAME: Wheat	FOR OFFICIAL USE ONLY PV NUMBER: 7600010
3. GENUS AND SPECIES NAME: Triticum aestivum L. em. Thell	4. FAMILY NAME *(Botanical)*: Gramineae	FILING DATE: 6·16·75 TIME: 10:00 A.M. P.M.
	5. DATE OF DETERMINATION: August, 1971	FEE RECEIVED: $ 250.00 $ 250.00 $ 250.00 BALANCE DUE: $ — $ 2-20-76 $ 2-7-77
6. NAME OF APPLICANT(S): Oklahoma Agricultural Experiment Station	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*: Oklahoma State University Stillwater, Oklahoma 74074	8. TELEPHONE AREA CODE AND NUMBER: 405/372-6211 X266
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)*: State University	10. STATE OF INCORPORATION: Oklahoma	11. DATE OF INCORPORATION: 12-14-1891

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

Dr. R.S. Matlock, Head
Department of Agronomy
Oklahoma State University
Stillwater, Oklahoma 74074

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, Botanical Description of the Variety

[X] 13C. Exhibit C, Objective Description of the Variety

[X] 13D. Exhibit D, Data Indicative of Novelty

[X] 13E. Exhibit E, Statement of the Basis of Applicant's Ownership

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? [X] FOUNDATION [X] REGISTERED [X] CERTIFIED

The applicant declares 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) of this sexually-reproduced novel plant variety believes 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 Protection Act.

Applicant is informed that false representation herein can jeopardize protection and result in penalties.

12-1-75
(DATE)

Jane Murray, assist Director
(SIGNATURE OF APPLICANT)

(DATE)

(SIGNATURE OF APPLICANT)

00001

76-10
OSAGE WHEAT
EXHIBIT A

RELEASE PROPOSAL: OK696731 WHEAT

BREEDING HISTORY

OK696731 is a Hard Red Winter wheat which resulted from a single F_2 plant selection made at the Oklahoma Agricultural Experiment Station from a 5*Scout/Agent backcross population (Scout X Agent with four subsequent backcrosses to Scout) developed by B. C. Curtis at the Colorado Agricultural Experiment Station. The backcross series was initiated to transfer the rust resistance of Agent to the background genotype of Scout.

In the fall of 1966, the Oklahoma Agricultural Experiment Station received some of this 5*Scout/Agent material from Colorado. The material consisted of several hundred seeds harvested from rust resistant F_1 plants of the last backcross generation (BC_4F_1). These seeds were identified by Colorado Agricultural Experiment Station numbers 66COG515-518.

During the fall and winter of 1966-67, a total of 202 BC_4F_2 seedlings from this material were screened in the O.A.E.S. Small Grains greenhouse for leaf rust reaction. Rust resistant plants were grown to maturity and the progeny from these plants were tested in the spring of 1967 in greenhouse seedling tests to establish their genotype with regard to the Agent gene for leaf rust resistance. On the basis of this progeny test, 57 BC_4F_2 plants were tentatively identified as being homozygous resistant for the Agent gene. OK696731 originated from one of these F_2 plants.

The F_3 progenies from these 57 lines were grown at Goodwell in 1968 for increase and selection. A total of 55 lines were saved. These were grown as F_4's in an observation nursery at Stillwater in 1969. Based on leaf rust reaction and agronomic appearance, nine lines were saved; including

the line in row 6731. Identification number OK696731 was assigned to this experimental line at this time.

In 1970, these nine lines along with other experimental strains and standard check cultivars were evaluated in a Preliminary Yield Nursery (PYN) at Stillwater and Altus. Five of the nine 5*Scout/Agent lines tested were saved for further evaluation. OK696731 ranked 3rd in grain yield in this nursery (see below).

1970 PYN	Stillwater	Altus	2-Sta. Avg.
(Yield in bu/acre and nursery rank for 5 of 30 entries tested)			
OK696760	54.3 (1)	44.4 (1)	49.4 (1)
OK696740	54.0 (2)	43.1 (4)	48.6 (2)
OK696731	52.5 (5)	43.6 (2)	48.1 (3)
Triumph 64	46.6 (11)	40.7 (14)	43.9 (11)
Scout 66	45.1 (15)	33.1 (26)	39.1 (24)

OK696731, along with the remaining four 5*Scout/Agent lines were evaluated in 1971 in the Intermediate Wheat Performance Nursery (IWPN) which was grown at Stillwater, Lahoma, and Goodwell. Based on the results from this nursery, two of the 5*Scout/Agent lines were dropped and the remaining three lines were saved for further evaluation. OK696731 was the highest yielding entry in this nursery (see below).

1971 IWPN	Stillwater	Goodwell	Lahoma	3-Sta. Avg.
(Yield in bu/acre and nursery rank for 5 of 30 entries tested)				
OK696731	53.1 (2)	76.2 (1)	46.9 (1)	58.7 (1)
OK696740	53.6 (1)	74.7 (3)	39.5 (8)	55.9 (2)
Scout 66	50.4 (6)	67.6 (7)	44.4 (4)	53.1 (3)
Triumph 64	49.4 (7)	63.2 (13)	40.7 (5)	51.1 (6)
OK696760	52.8 (4)	56.2 (22)	43.0 (3)	50.7 (7)

In 1972, the three remaining 5*Scout/Agent lines (OK696731, OK696740, and OK696760) were evaluated in the Advanced Wheat Performance Nursery

(AWPN) which consisted of seven tests at six locations in the state. They were included in a preliminary clipping study for forage evaluation. Two of the lines, OK696731 and OK696740, were entered in the Southern Regional Performance Nursery (SRPN) which consisted of 25 tests in the Hard Red Winter Wheat Region. All three lines were evaluated in the Large-Scale Milling and Baking Test (LSMB) in collaboration with the Hard Winter Wheat Quality Advisory Council. An initial Breeder Seed increase of one-tenth of an acre for each of these three lines was grown at Perkins. These increase plots were rogued several times to remove 'off-type' plants. Approximately 300 pounds of pure seed was harvested from each increase plot.

In 1973, OK696731 was evaluated for the second year in the AWPN (six tests at five locations), SRPN, and LSMB. It was evaluated for the first time in the 1972-73 Small Grain Forage trials under the supervision of W. E. McMurphy. Plans had been made for a 10-acre increase of Breeder Seed in 1973, but wet weather prevented the seeding of this increase block.

Botanical Description

Osage is a hard red winter wheat. It is medium to medium late in maturity and midtall in plant height. The stem is white and midstrong; the spike is awned, fusiform, middense and inclined; the glumes are glabrous, white, midlong and narrow; the shoulders are narrow and oblique; the beaks are narrow, accuminate, and vary from 1.5 to 3.7 mm in length; the awns are white, and 2.2 to 7.5 cm in length; the kernels are red, short to midlong, hard, and ovate; the germ is small to midsized; the crease is midwide and middeep; the cheeks are rounded to angular and the brush is large and midlong.

FORM GR-470-6 (REVERSE)

'Osage' 1600010

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

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

[0 8] CM. LENGTH

[0 7] MM. WIDTH

12. GLUMES AT MATURITY:

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

[1] 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

[3] 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:

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

16. SEED:

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

[2] 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

[0 3] MM. WIDTH

~~[0 3]~~ 30 per Exh. D AAA 13 Mar 1995 GM. PER 100 SEEDS

17. SEED CREASE:

[X2]* Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI'

[X2]* 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)

[2] STEM RUST (Races) _____

[2] LEAF RUST (Races) _____

[ ] STRIPE RUST (Races) _____

[ ] LOOSE SMUT

[2] POWDERY MILDEW

[ ] BUNT

[ ] OTHER (Specify) _____

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

[0] SAWFLY

[0] APHID (Bydv.)

[0] GREEN BUG

[0] CEREAL LEAF BEETLE

[ ] OTHER (Specify) _____

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

RECEIVED JUN 16 1975 DEPARTMENT OF AGRICULTURE AMS GRAIN DIV. 12 2 3 4 5 6 7 8 9 10 11

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Sage	Seed size	Sage
Leaf size	"	Seed shape	"
Leaf color	"	Coleoptile elongation	"
Leaf carriage	"	Seedling pigmentation	"

x Letter of Dec 17, 75

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.

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7 of 18

76-10

OSAGE WHEAT
EXHIBIT D

Data Indicative of Novelty

Attached data indicate that Osage is similar to Sage in most characteristics. However, Osage and Sage can be distinguished on the basis of reaction to wheat streak mosaic virus. Osage is susceptible while Sage has a tolerant reaction.

76-10

OSAGE WHEAT
EXHIBIT E

Statement of the Basis of Applicant's Ownership

Dr. Frank Baker, Director of the Oklahoma Agricultural Experiment Station is the applicant. E.L. Smith, H.C. Young, D.C. Abbott, L.H. Edwards, and H. Pass of the Oklahoma Agricultural Experiment Station all contributed to the selection, development and evaluation of this variety. The Oklahoma Agricultural Experiment Station is the owner of the Osage wheat variety.

76-10

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
Grain Division
6525 Belcrest Road
Hyattsville, Maryland 20782

PLANT VARIETY PROTECTION OFFICE

Gentlemen:

Subject: Application No. 7600010
Variety and Kind - 'Osage,' Wheat

As provided in section 83(a) of the Plant Variety Protection Act, 7 U.S.C. 2321, we request that the Certificate on the above variety be issued with a notation on each Certificate that the right to exclude others from selling, offering for sale, reproducing, importing or exporting the variety covered by this Certificate, or using it in producing a hybrid or different variety is waived.

It has been agreed that the certificate should be issued in the name(s) of:

Oklahoma Agricultural Experiment Station

12-1-75
(Date)

Ralph S. Matlock
(Signature)

00010

76-10

OKLAHOMA AGRICULTURAL EXPERIMENT STATION
Oklahoma State University, Stillwater, Oklahoma

and

TEXAS AGRICULTURAL EXPERIMENT STATION
Texas A & M University, College Station, Texas

agree to the joint release of

OSAGE (C.I. 17292) Hard Red Winter Wheat

The Agricultural Experiment Stations of Oklahoma and Texas announce the release of "Osage" hard red winter wheat. The cultivar was developed by the Oklahoma Agricultural Experiment Station. The Texas Agricultural Experiment Station participated in the regional evaluation of Osage.

Osage is a productive, rust resistant, medium-late maturing cultivar which resulted from a single F_2 plant selection made in 1967 at the Oklahoma Agricultural Experiment Station from a 5*Scout/Agent backcross population developed at the Colorado Agricultural Experiment Station. It was grown in observation nurseries in Oklahoma in 1968 and 1969 and was first evaluated in Oklahoma performance trials in 1970 as OK696731. It was evaluated in the Southern Regional Performance Nursery and the Large-Scale Milling and Baking Tests in 1972 and 1973.

Osage is an awned, white-chaffed, medium-late maturing cultivar. It has an excellent yield record in Oklahoma trials. It is resistant to all North American races of leaf rust except LR23, and has a good tolerance to powdery mildew and shows some tolerance to septoria leaf blotch. It is similar to Scout 66 in height, straw strength and bread-making quality.

A 13-acre increase block was planted to Breeder Seed in the fall of 1973. Pending a favorable harvest, some 30,000 lbs. of Foundation Seed should be available for distribution for the 1974-75 crop season. Seed classes of Osage will be Breeder, Foundation, Registered, and Certified. The Oklahoma Agricultural Experiment Station will maintain Breeder Seed. Osage will be submitted for registration and variety protection under the certification option of P.L. 91-577.

Release of information to the general public regarding the official release and description of Osage as soon as practical by each state.

James A. Whatley — 4-25-74
Director, Oklahoma Agricultural Experiment Station — Date

James E. Miller — 4/18/74
Director, Texas Agricultural Experiment Station — Date

00011

76-10

RELEASE PROPOSAL: OK696731 WHEAT

PERFORMANCE RECORD

Information regarding grain yield, disease reaction, forage production, quality characteristics and other traits are discussed below. Data from 1972 and 1973 Oklahoma tests are presented. Data from the 1972 SRPN and LSMB tests are also given, but the 1973 results from these two nurseries are not yet available.

Grain Yield. OK696731 is a high-yielding, widely adapted cultivar. In the Advanced Wheat Performance Nursery (AWPN) grown in Oklahoma during the past two years (1972 and 1973), it had the highest average yield of all entries tested. It exceeded the yield of Scout 66 by 11% in these tests (Table 1). OK696731 was the 2nd leading cultivar in the 1972 Southern Regional Performance Nursery (SRPN) which consisted of 25 tests in nine states. Its wide range of adaptation is indicated by its high average performance in this nursery (Table 2).

Yield data for individual locations in state-wide tests (AWPN) for 1972 and 1973 are shown in Tables 3 and 4. In both years, OK696731 had good yield records at Lahoma, Stillwater, Woodward, and in the irrigated tests at Goodwell. Its performance was satisfactory at Altus and in the Goodwell dryland test in 1973. It was tested only one year at Muskogee (1972), but had a good yield record there, ranking 2nd among all entries in the test.

Of the 13 individual tests comprising the AWPN during this two-year period, poor yields were observed for OK696731 in only two tests. These were the 1972 test at Altus and the 1972 dryland test at Goodwell. In

both of these tests, nursery yields were low and variable and the results should be used with caution.

Agronomic Characteristics. OK696731 heads, on the average, two days later than Scout 66. It is considered as a medium-late maturing cultivar in Oklahoma. OK696731 is similar to Scout66 in plant height, test weight, and lodging resistance. Comparative agronomic data from the AWPN and SRPN are given in Tables 1 and 2.

Disease Resistance. OK696731 is resistant to all known races of leaf rust except the race designated as 2A+Ag. This new race has been observed in the HRW Wheat Region during the past three years, but so far has not occurred in serious proportions in Oklahoma. At this time, OK696731 can be considered as having good resistance to leaf rust and this resistance should be useful for several years to come. However, as the acreage of Agent - derived varieties increases in the state, leaf rust race 2A+Ag could build up rapidly and pose a serious threat to wheat production. Lines with resistance to 2A+Ag have been identified and work is underway to transfer this resistance to OK696731 and other cultivars.

OK696731 also has good resistance to stem rust and has a high level of tolerance to powdery mildew (Talbes 1 and 2). It is susceptible to soil borne mosaic virus and wheat streak mosaic virus. Its reaction to septoria, loose smut, root rot, and other diseases has not been specifically determined.

Forage Production. Grazing value is an important aspect of winter wheat production in the state. OK696731 has been evaluated for two years in forage clipping trials to obtain information relative to its forage production potential. The results from these tests are inconsistent.

In the 1971-72 season, OK696731 was very low in forage production in relation to other wheats in the test (Table 5A). In the 1972-73 season,

it was superior to all other wheat cultivars tested (Table 5B). Further clipping studies are needed to establish the grazing value of OK696731 in relation to other cultivars grown in the state.

In terms of fall growth, OK696731 is a slow starter. It does not normally make as much vegetative growth in the early part of the season as other cultivars such as Caprock, Centurk, or Danne. On the other hand, it has good seedling resistance to leaf rust which would enhance its forage value when this disease is a problem.

Milling and Baking Quality. Results from the O.A.E.S. wheat quality lab (Table 6A and 6B) as well as from the 1972 Large-Scale Milling and Baking test (Table 7) indicate that OK696731 is very similar to Scout 66 in overall quality characteristics and is satisfactory as far as the milling and baking trade is concerned. Industry's reaction to the quality characteristics of OK696731 is shown by collaborators comments in the 1972 Annual Report of the Hard Winter Wheat Quality Advisory Council.

> "-- the Oklahoma samples -- are typical of the historical quality character of Oklahoma Wheats. -- They are mellow gluten wheats conforming to the traditional characteristics of the class Hard Red Winter Wheat. -- The collaborators were pleased with the Scout-like performance and scores of 72-445 (OK696731), 72-446 (OK696740) and 72-447 (OK696760). Some slight criticism of 72-447 (OK696760) was made, but collaborators were generally pleased with the Scout/Agent crosses."

Table 1. Yield and other data for OK696731 with comparisons -- Summary, 1972 & 73 AWPN.

	Yield 72 & 73 13-Sta. Avg. (bu/acre)	(% of Scout 66)	Heading Date (1/)	Plant Height (cm)	Test Weight (lbs/bu)	Lodging (%) 2/	Leaf Rust 2/	Mildew 1-5 2/
OK696731	46.5	111	29	105	61.6	10	T	2
Tam W-101	43.9	105	24	84	60.9	2	60S	4
OK696760	43.8	105	29	105	61.7	10	T	1
OK696740	42.1	101	29	108	61.7	10	T	3
Scout 66	41.7	---	27	107	61.8	15	50S	1
Centurk	40.4	97	26	96	61.3	20	30S	1
Triumph 64	37.4	90	20	97	62.5	30	60S	1

1/ Days after March 31.
2/ 1973 ST AWPN only.

76-10

Table 2 Yield and other data for OK696731 with comparisons, 1972 Summary, Southern Regional Performance Nursery (SRPN).

	Yield (25 Tests) kg/ha	Heading (20 Tests) 1/	Plant Ht. (24 Tests) cm	Lodging (8 Tests) 0-9 2/	Leaf Rust (Browder) 3/	Stem Rust (McVey) 4/	Mildew (McVey) 5/
Centurk	3497	132	84	2.5	R-S	10MS-S	T
OK696731	3474	133	87	3.0	R	TR	T
KS70H134	3436	132	87	3.6	R	TR	60
Sage	3418	133	88	3.3	R	TR	T
SD7117	3405	133	87	3.8	R	TR	T
Buckskin	3390	132	91	1.4	S-R	20S	20
TX69A367	3390	130	74	0.8	R-S	5MR	60
Baca	3308	131	88	3.9	R-S	TR	10
OK696740	3277	133	87	3.3	R	TR	T
Scout 66	3274	131	90	4.3	S-R	TR-S	T
Cloud	3265	133	88	2.6	R	TR	10
TX69A565	3252	132	71	0.6	R-S	5MR	60
CO695552	3250	129	86	1.0	R-S	40S	20
NE701132	3249	133	88	2.0	S-R	10S	10
TX69A571	3246	131	72	1.9	S	40S	60
Sentinel	3216	132	79	2.5	S-R	TR	10
Homestead	3183	131	78	2.1	R-S	TR	10
TX62A2522-1-4	3138	133	74	0.1	S	40MS-S	60
TX62A2782-4-2	3126	132	76	0.8	S	20MS-S	10
Tam W-103	3126	127	66	1.1	R-S	40S	10
Bezostaia	3101	132	79	0.9	R-S	40S	10
CO696317	3087	131	82	0.5	S-R	5MS	10
Trison	3033	128	86	1.5	S	40S	(10)
Pronto	3018	126	81	2.3	S-R	40S	10
OK60118	2970	128	87	2.8	S	20S	10
Kharkof	2597	138	95	6.4	S	40S	T

1/ Days after Dec. 31.
2/ 0=no lodging, 9=90+% lodged.
3/ Based on reaction to 11 cultures of leaf rust, R=resistant reaction to all cultures, R-S and S-R=resistant to certain cultures; susceptible to other; S=susceptible to all cultures.
4/ Field data, St. Paul, Minnesota.
5/ Percent infection; T=trace.

Table 6A-Quality data for OK696731 with comparisons -- 1972 AWPN composite

	Wheat Protein %	Flour Protein %	Flour Yield %	Absorp-tion %	Mix time min.	Loaf Volume cc	Grain & Texture 15 max.	Break & Shred 5 max.
OK696731	14.8	12.7	69.2	64.8	3:00	980	13	5
Scout 66	13.3	12.0	72.6	65.7	3:45	960	13	5
Triumph 64	15.4	13.8	72.0	65.9	3:00	980	13	5
Caprock	15.2	13.5	70.6	65.5	5:10	980	12	3
Centurk	14.1	12.5	71.6	65.3	4:45	915	12	4
Tam W-101	14.6	12.5	68.0	64.9	2:45	875	11	2
OK696740	14.7	12.8	69.6	65.6	3:00	978	12	5
OK696760	14.7	12.6	69.0	64.7	3:10	948	12	4

Table 6B-Quality data for OK696731 with comparisons -- 1973 AWPN composite

	Wheat Protein %	Flour Protein %	Flour Yield %	Specific Sediment SV	Mix time min.	Curve Height B. Units
OK696731	14.1	12.2	68.8	3.85	3:00	24
Scout 66	10.3	8.6	67.0	6.58	2:40	28
Triumph 64	13.8	12.3	68.8	3.75	2:10	27
Caprock	14.1	12.4	68.0	4.59	3:20	23
Centurk	13.8	12.1	68.8	5.00	3:40	24
Tam W-101	12.8	11.1	68.0	5.14	3:30	23
OK696740	14.0	12.3	68.8	4.24	2:50	24
OK696760	14.3	12.7	69.6	3.62	2:30	25
Sage	13.7	12.0	68.0	4.45	2:40	25

Table 7 Summary of Collaborators Study of Baking Characteristics of Oklahoma Samples, 1972.

Code No.	442	443	444	445	446	447
Variety	Triumph 64	Scout 66	D146-4	Scout/Agent OK 696731	Scout/Agent OK 696740	Scout/Agent OK 696760
Characteristics						
A. Absorption	4.9	5.4	4.5	5.1	5.4	5.1
B. Mix Time	5.7	6.7	5.4	6.2	6.5	6.7
C. Mixing Tolerance	5.3	6.4	5.3	5.9	6.3	6.4
D. Dough Handling	6.0	6.5	5.5	6.3	6.5	6.5
E. Loaf Volume	6.8	7.1	6.9	7.5	7.4	7.2
F. Symmetry	6.8	6.9	6.5	6.8	6.7	6.6
G. Break and Shred	6.8	6.7	6.6	6.6	6.6	6.6
H. Grain	5.7	6.5	5.8	6.5	6.8	6.5
I. Texture	5.8	6.6	5.8	6.4	6.5	6.4
J. Inherent Quality	5.7	6.5	5.7	6.4	6.6	6.5
Mean Score	60.0	66.4	59.1	65.3	66.7	65.8

Linear Program = $\frac{A}{2} + B + C + \frac{D}{2} + 2E + \frac{F}{2} + \frac{G}{2} + H + I + 2J$

LSD = 6.11

Suitability for white pan bread:	Yes	23	27	20	26	25	26
	No	8	4	11	5	6	5
Blending Purpose	Yes	4	15	2	12	11	12
	No	27	16	29	19	20	19

76-10

00018

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.*)

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
Oklahoma Agricultural Experiment Station

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*
Oklahoma State University
Stillwater, Oklahoma 74074

FOR OFFICIAL USE ONLY

PVPO NUMBER 7600010

VARIETY NAME OR TEMPORARY DESIGNATION
Osage

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:
[2] 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: NA
[ ][ ][ ] FIRST FLOWERING
[ ][ ][ ] LAST FLOWERING

4. MATURITY *(50% Flowering)*:
[ ][ ] NO. OF DAYS *EARLIER* THAN .....
[0 2] NO. OF DAYS *LATER* THAN .....
[ ] [2] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS

5. PLANT HEIGHT *(From soil level to top of head)*:
[ ][ ][ ] CM. HIGH NA
[0 0] CM. TALLER THAN .....
[0 0] CM. SHORTER THAN .....
[2] [2] 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
[2] Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT
[0 4] NO. OF NODES *(Originating from node above ground)*
[2] Waxy bloom: 1 = ABSENT 2 = PRESENT
[1] Internodes: 1 = HOLLOW 2 = SOLID
[2 3] 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)*: _____
[2] Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT
[1 0] MM. LEAF WIDTH *(First leaf below flag leaf)*
[2] Flag leaf: 1 = NOT TWISTED 2 = TWISTED
[2] Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT
[2 2] CM. LEAF LENGTH *(First leaf below flag leaf)*:

00006 6018

FORM GR-470 (REVERSE)

DEC 29 1975

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, 6525 Belcrest Road, Hyattsville, Maryland 20782. (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 Insert the date the applicant determined that he had a new variety based on the definition in Section 41 (a) of the Act and decision is made to increase the seed.

13a First, give the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method. Second, give the details of subsequent stages of selection and multiplication. Third, indicate the type and frequency of variants during reproduction and multiplication and state how these variants may be identified. Fourth, provide evidence on stability.

13b First, give any special characteristics of the seed and of the plant as it passes through the seedling stage, flowering stage and the fruiting stage. Second, describe the mature plant and compare it with a similar commercial variety grown under the same conditions, and indicate the differences.

13c A supplemental form will be furnished by the PVPO to describe in detail a variety for each kind of seed.

13d Provide complete data indicative of novelty. Seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty may be submitted. Seeds submitted may be sterile.

13e Indicate whether applicant is the actual breeder, the employer of the breeder, the owner through purchase or inheritance, etc.