No. 7400064

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Purdue University
Agricultural Experiment Station and A.R.S., U.S.D.A.

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, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS ESTABLISHED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

* [Waived]

OAT

'Stout'

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* 15th *day of* February *in the year of our Lord one thousand nine hundred and* seventy-seven

Attest:

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

Secretary of Agriculture

FORM GR-470
(2-12-71)

UNITED STATES DEPARTMENT OF AGRICULTURE
CONSUMER AND 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 Stout	2. KIND NAME Oats	FOR OFFICIAL USE ONLY PVPO NUMBER 7400064
3. GENUS AND SPECIES NAME Avena sativa	4. FAMILY NAME *(Botanical)* Gramineae	FILING DATE 2·11·74 / TIME 3:00 P.M.
	5. DATE OF DETERMINATION 3/8/76 JUNE 1, 1973	FEE RECEIVED $750.00 / CHARGES —
6. NAME OF APPLICANT(S) Purdue University Agricultural Experiment Station	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and Zip Code)* Agricultural Experiment Station Purdue University West Lafayette, Indiana 47907	8. TELEPHONE AREA CODE AND NUMBER 317-749-2461
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)* Division of Land Grant University	10. STATE OF INCORPORATION Established by Federal Law Hatch Act 1889	11. DATE OF INCORPORATION 1889

7/23/76

12. Name and mailing address of applicant representative(s), if any, to serve in this application and receive all papers:
Dr. ~~H. H. Kramer~~ B. J. Kirk, Director
Agricultural Experiment Station
Purdue University
West Lafayette, Indiana 47907

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- [X] 12A. Exhibit A, Origin and Breeding History of the Variety *(See Section 52, P.L. 91-577)*
- [X] 12B. Exhibit B, Botanical Description of the Variety
- [X] 12C. Exhibit C, Objective Description of the Variety (Official form not available.) 3/8/76
- [X] 12D. Exhibit D, Data Indicative of Novelty
- [X] 12E. Exhibit E, Statement of the Basis of Applicant's Ownership

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. *(See Section 52, P.L. 91-577).*

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), P.L. 91-577) (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? Three

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

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 (P.L. 91-577).

5 Feb 1974
(DATE)

Herbert H Kramer
(SIGNATURE OF APPLICANT)

(DATE)

(SIGNATURE OF APPLICANT)

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12A. Exhibit A. Origin and breeding history of Stout, CI 9195

Stout was developed at the Purdue University Agricultural Experiment Station in cooperation with the Agricultural Research Service, United States Department of Agriculture.

Stout is a high-yielding uniquely short, stiff-strawed variety with a compact panicle. It derived the short, stiff straw and compact panicle type from Milford, a Welsh variety. Reaction of this line suggests it has the B and D genes for resistance to stem rust (resistant to races 8AF and 6F, but susceptible to races 7AF, 6AF, and 6AFH). It has resistance to crown rust from PI 174544-3. It is resistant to races of loose smut currently prevalent in Indiana, but is moderately susceptible to the barley yellow dwarf virus disease. The detailed parentage of Stout is:

Shield sib/3/Clinton/Bond/2/PI 174544-3/12/Milford/2/Clinton*2/Ukraine/11/Clintland/9/Clintland*7/Landhafer/7/Clinton*7/Landhafer/2/Clinton*7/Landhafer/6/Clinton*7/Landhafer/4/R.L. 2105/3/Clinton/2/Boone/Cartier/5/Clinton*7/Landhafer/4/R. L. 2120/3/Clinton/2/Boone/Cartier/8/Clinton/2/Boone/Cartier/10/Clintland*3/Minn 313.

Stout was developed using a modified pedigree breeding program. The final selection was made in the F_7 generation following the final cross. Breeder seed was in the F_{15} generation in 1972.

Stout produces plump grain with good test weight. The groat protein content is usually 17.0 to 17.5% subject to fertility level and environment. The kernels are very light brown to white and fluoresce under ultraviolet light.

Stout has been tested for seven years in nursery plots at Lafayette, Indiana, in Indiana state field plots for six years and in the regional Uniform Midseason Oat Performance Nursery for five years.

Stability of Stout is indicated in that during the seed increase generations, aberrant types for plant height, maturity, yellow dwarf virus resistance, smut resistance and crown rust resistance did not occur. The breeders' seed increase field in 1972 showed no variant plant types as certified by Indiana state inspection. Infrequently (less than 1 glume per 1000 panicles) an outer glume is missing.

12B. Exhibit B. Botanical Description of Stout

Stout is a spring oat, Avena sativa L.

The coleoptile is white (lacks pigment). Culms are very erect (do not bow at base) throughout plant development and are resistant to node bending as described in Agron. J. 49:51 p 519. The internodes are hollow.

Leaves are a medium green and are generally upright. Leaf margins are glabrous. Culm internodes are glabrous. Culms are yellow. The diameter of the uppermost node is 4.0 mm whereas that of Tippecanoe is 3.5 mm. Ligules are present. Average flag leaf length and width are 12.8 cm and 10.1 mm, respectively.

The panicle form is equilateral, branches are short and ascending and arise at the lower rachis node. Panicle width and length are 5.8 cm and 10.0 cm, respectively. The rachis is flexuous. Awns are generally absent. Outer glumes are slightly lighter green in color than the leaves. After flowering the glumes appear light-green in the sunlight resulting in a distinctly whitish canopy. Seed glumes are very light brown to white and are fluorescent.

The glabrous lemma is short, about 13.7 mm long and extends just beyond the groat but covering the tip of the groat well. The second floret rachilla is glabrous and midlong being 1.5 to 2.5 mm in length.

Grains are plump, well-filled with a 1000-kernel weight of 30 grams and a test weight of 32 to 34 pounds per bushel.

At Lafayette, Indiana, Stout has been moderately resistant to stem rust and crown rust, moderately susceptible to the yellow dwarf virus and resistant to loose smut.

It has been equal to or higher yielding than Clintford.

12D. Exhibit D. Data indicative of Novelty.

The general plant type of Stout is unique, however, it most closely resembles Clintford. Stout is similar to Clintford in Flowering date and 7 to 8 cm shorter than Clintford at Lafayette, Indiana (Tables 2 and 4). It is recognized that varieties respond differentially to seasonal variation in temperature and planting date.

Stout is novel in that:

It shows greatly reduced lodging (Table 2)

It's resistance to crown rust from PI174544-3 is manifested by developing large necrotic areas at points of infection with limited sporulation of the pustules;

It has unique short, stiff culms and a more compact panicle than Clintford (Figures 1 and 2).

Table 1. Crown rust and stem rust reaction types of oat varieties in 1971 at Lafayette, Indiana.*

Variety	Crown rust	Stem rust
Jaycee	15 Med. Susc.**	10 Susc.**
Clintford	30 Susc.	30 Susc.
Clintland 64	20 Med. Susc.	2 Med. Susc.
Diana	10 Med. Res.	20 Susc.
Stout	10 Med. Res.	Trace; Res.

* Severe epidemics of crown and stem rust; inoculated with races 216, 264, and 326 of crown rust and with races 6F, 7AH, and 8AH of stem rust.

** Numbers indicate percent of leaf area or stem area infected.

Table 2. Lafayette Advanced Yield Nursery, 4 replications, 7-year average (1967-1973).

Variety	Yield bu/A	T.W. lb/bu	1000 - Ker. Wt., g	Pre-ripe Straw Score*	Headed June	Plant Height inches
Stout	130.0	33.2	30.1**	2.8	12.9	32.2
Jaycee	118.6	34.8	28.4	4.2	11.0	34.4
Clintford	125.2	37.0	30.3	4.0	12.9	35.2
Clintland 64	111.1	33.6	27.5	4.8	15.6	38.1
Diana	114.4	34.7	28.4**	3.8	12.4	36.2
LSD (.05)	8.2	1.3	2.0	.8	1.0	1.6

* 0 = erect to 9 = lodged flat.
** 5 year average (1968-1973).

Table 3. Yields (bu/A) of oats in Indiana state field plots for 6 years (1968-1973).

Region in Indiana*	Stout	Jaycee	Clintford	Diana	LSD (.05)
Northern**	98.1	95.2	100.5	93.1	3.5
West Central	116.1	114.1	109.0	103.7	3.1
East Central+	90.7	95.4	98.8	90.6	5.0
Southern+	103.7	98.1	106.7	101.1	8.7
Average over state	102.2	100.7	103.8	97.1	

*Test sites at Porter and Allen counties in Northern Indiana, at Lafayette Agronomy Farm in West-Central, at Randolph County in East-Central, and at Knox, Decatur and Jackson Counties in Southern Indiana.
**1969-1973 average
+1969, 1970, 1971 and 1973 average.

Table 4. Performance of oats in North-Central Region in Uniform Midseason Nursery (1971-1972).

Variety	Yield, bu/A	Test Weight, lb/bu	Percent Lodged	Headed, June	Height, inches
Stout	84.6	34.0	18.8	16.8	33.2
Jaycee	79.5	35.2	29.2	16.0	34.1
Clintland 64	80.1	34.6	34.1	18.1	37.4
LSD (.05)	4.1	.7	8.9	1.1	1.0

*Number of year-location tests: yield 34; test weight, 34; plant height, 28; percent lodging, 23; date headed, 27. Data summaries for 1973 not yet available.

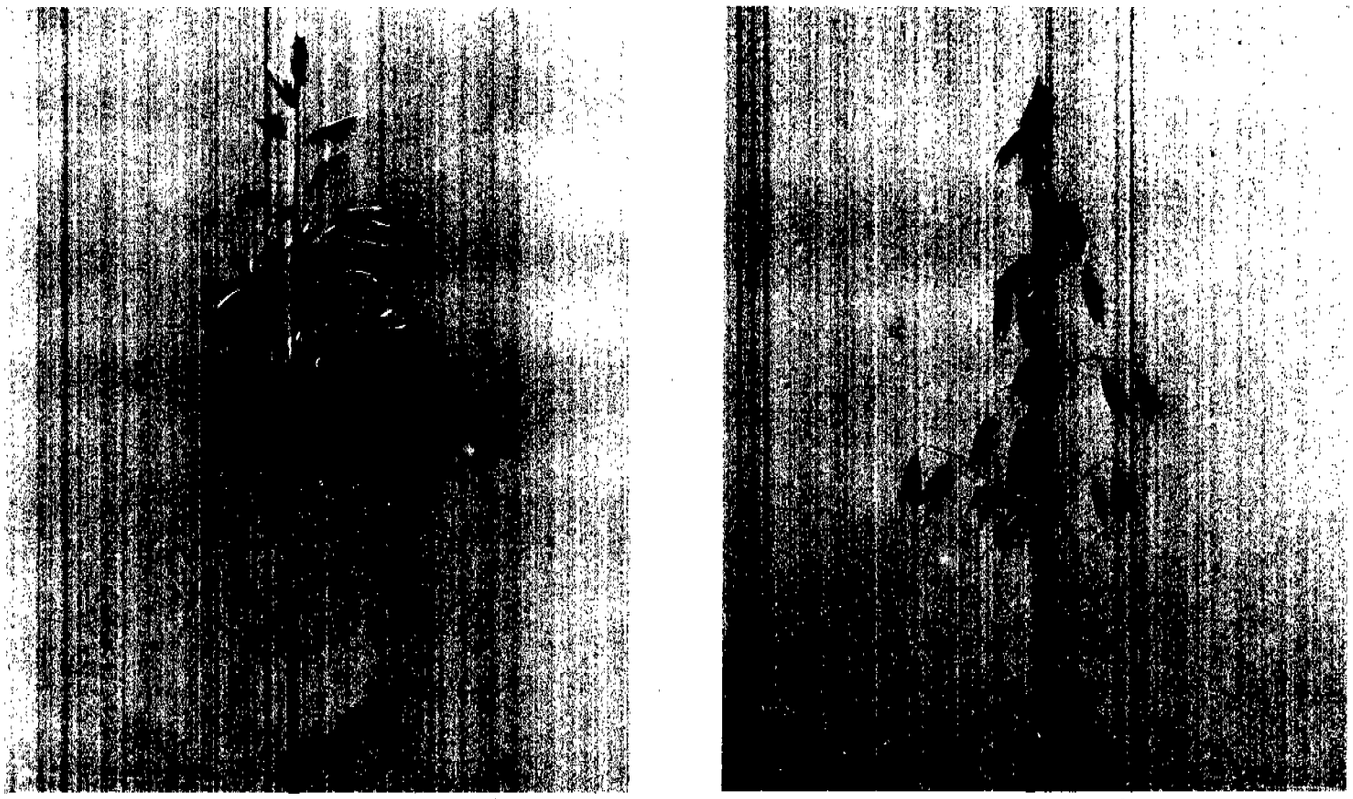

Figure 1. Panicle type of Stout and Noble Spring Oat.
The panicle configuration of Noble is very similar to that of Clintford.

11/22/76
DB

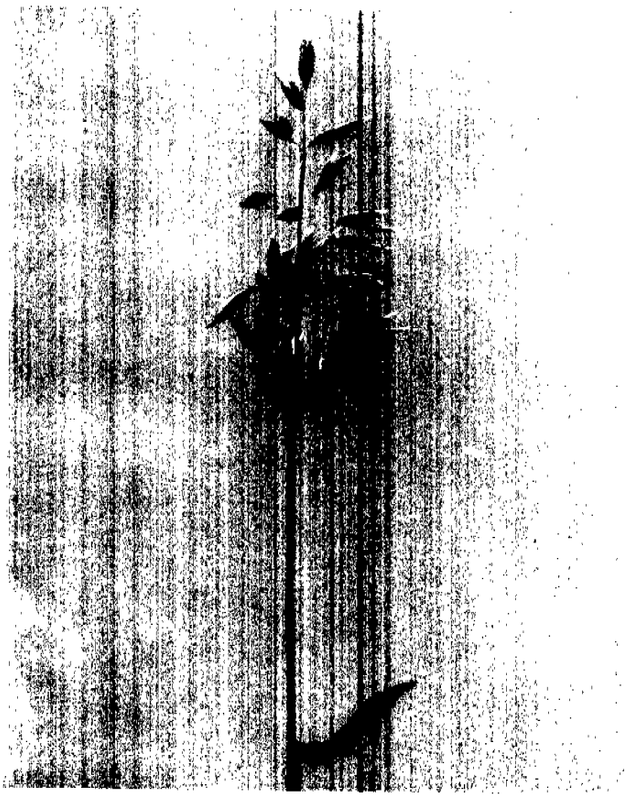

Figure 1. Panicle type of Stout Spring Oat.

Figure 2. Plant type of Diana (left) and Stout, designated as 5939B1-3-9-3-5.

FORM APPROVED: OMB NO. 40-R3712

FORM GR-470-35
(1-76)

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782

OBJECTIVE DESCRIPTION OF VARIETY
OAT
(Avena spp.)

NAME OF APPLICANT(S)	VARIETY NAME OR TEMPORARY DESIGNATION
Purdue University Agricultural Experiment Station	Stout
ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code)*	FOR OFFICIAL USE ONLY
West Lafayette, IN 47907	PVPO NUMBER 74 000 64

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.

1. SPECIES:

1 [X] 1 = SATIVA 2 = BYZANTINA 3 = OTHER *(Specify)*_____

9/13/76

2. GROWTH HABIT:

[3] 1 = WINTER 2 = SEMIWINTER 3 = SPRING

[3] JUVENILE GROWTH: 1 = PROSTRATE 2 = SEMIPROSTRATE 3 = ERECT

STANDARD VARIETIES

1 = JAYCEE 2 = CLINTLAND 64 3 = CAYUSE 4 = NORLINE 5 = YANCEY 6 = FLORIDA 501

3. MATURITY (50% flowering):

[0][4] DAYS EARLIER THAN..... [2] STANDARD VARIETY [ ][ ] DAYS LATER THAN..... [ ] STANDARD VARIETY

[3] Season: 1 = VERY EARLY (Jaycee) 2 = EARLY (Nodaway 70) 3 = MIDSEASON (Clintford)
4 = LATE (Lodi) 5 = VERY LATE (Garry) 6 = EXTREMELY LATE (Mackinaw)

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

[ ][8][2] CM. TALL [1][4] CM. SHORTER THAN.... [2] STANDARD VARIETY
[ ][ ] CM. TALLER THAN ..... [ ] STANDARD VARIETY

5. STEM:

[2] DIAMETER: 1 = FINE (Kherson) 2 = MEDIUM (Clintford) 3 = COARSE (Nodaway 70)

[1] HAIRINESS AT UPPER CULM NODES: 1 = HAIRLESS 2 = HAIRY

[1] MATURE STEM COLOR: 1 = YELLOW 2 = REDDISH

6. LEAF: (Leaf Color: The Royal Horticultural Society's or any recognized color chart should be used to determine the leaf color of the described variety.)

[2] CARRIAGE: 1 = DROOPING (Random) 2 = ERECT (Walken)

[3] COLOR: 1 = YELLOW GREEN 2 = LT. GREEN 3 = DK. GREEN 4 = BLUE GREEN

[1][6] MM. WIDTH (First leaf below flag leaf) [1] LEAF MARGIN: 1 = GLABROUS 2 = CILIATE

[2] LIGULE: 1 = ABSENT 2 = PRESENT [1] LEAF SHEATH: 1 = HAIRLESS 2 = HAIRY

7. HEAD:

[1] PANICLE SHAPE: 1 = EQUILATERAL 2 = INTERMEDIATE 3 = SIDE PANICLE (Unilateral)

[1] ATTACHMENT OF LOWER WHORL OF BRANCHES: 1 = FIRST NODE 2 = SECOND NODE (False node)

[1] PANICLE SIZE: 1 = SMALL (Yancey) 2 = MEDIUM (Walken) 3 = LARGE (Markton)

[2] PANICLE WIDTH: 1 = NARROW (Gopher) 2 = MIDBROAD (Yancey) 3 = BROAD (Nodaway 70)

[1][0] CM. PANICLE LENGTH [1][8] NUMBER OF BRANCHES [ ][4] NUMBER OF WHORLS OF BRANCHES

[1] POSITION OF BRANCHES: 1 = ASCENDING (Yancey) 2 = SPREADING (Cayuse) 3 = DROOPING (Markton)
4 = PECTINATE (White Tartar) 5 = CONFUSED (Storm King)

40-10

00004

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
14th and Independence Avenue, Rm. 1634

WASHINGTON, D.C. 20250

PLANT VARIETY PROTECTION OFFICE

Gentlemen:

Subject: Application No. 7400064
Variety and Kind - 'Stout' -- Oat

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:

The Purdue University Agricultural Experiment Station and ARS-USDA

6/2/74
(Date)

(Signature)

*except that this waiver shall not apply to (a) breeder seed, (b) foundation seed, (c) labeling requirements, and (d) blending limitations.

REVISED EXHIBIT E: STATEMENT OF THE BASIS OF APPLICANT'S OWNERSHIP

Purdue University Agricultural Experiment Station and the Agricultural Research Service, United States Department of Agriculture, are joint owners of 'Stout' oat.

9/15/76
Date

B. J. Liska, Director
Purdue University Agricultural Experiment Station

74-64

FORM 470-35 (REVERSE)

8. RACHIS:

[2] 1 = RECURVED (Yancey) 2 = ERECT (Walken)

[1.9] MM. SECOND FLORET RACHILLA SEGMENT LENGTH

[1] SECOND FLORET RACHILLA SEGMENT: 1 = HAIRLESS 2 = HAIRY

[ ] RACHILLA HAIRS: 1 = SHORT 2 = LONG

9. SPIKELET:

[2] SPIKELET SEPARATION BY: 1 = ABSCISSION 2 = SEMIABSCISSION 3 = FRACTURE

[1] FLORET SEPARATION BY: 1 = DISARTICULATION 2 = HETEROFRACTURE 3 = BASIFRACTURE

[~~8~~ 2.0] FLORETS PER SPIKELET (mean no.) 9/13/76

10. GLUMES: (Glume Color: The Royal Horticultural Society's or any recognized color chart should be used to determine the color of the described variety.)

[08] MM. WIDTH [18] MM. LENGTH [09] NO. OF VEINS ON GLUMES [1] COLOR: 1 = WHITE 2 = YELLOW 3 = RED 4 = STRIPED

11. LEMMA: (Lemma Color: The Royal Horticultural Society's or any recognized color chart should be used to determine the color of the described variety.)

[14] MM. LENGTH

[1] COLOR: 1 = WHITE 2 = YELLOW 3 = RED 4 = GRAY 5 = BLACK

[1] HAIRINESS OF DORSAL SURFACE: 1 = HAIRLESS 2 = HAIRY

12. AWN (First floret):

[1] OCCURENCE: 1 = ABSENT (Walken) 2 = INFREQUENT (Yancey) 3 = COMMON (Chilocco) 4 = FREQUENT (Random)

[ ] TYPE: 1 = NON-TWISTED 2 = TWISTED 3 = TWISTED GENICULATE

[ ] MM. AWN LENGTH

13. SEED:

[1] FLORESCENCE UNDER ULTRAVIOLET LIGHT: 1 = FLORESCENT 2 = NON-FLORESCENT

[2] BASAL HAIR: 1 = ABSENT (Florida 501) 2 = ABSENT TO FEW (Yancey) 3 = FEW TO SEVERAL (Lee) 4 = SEVERAL TO NUMEROUS (Florilee) 5 = NUMEROUS (Red Rustproof)

[~~10~~ 0.1] MM. BASAL HAIR LENGTH 9/13/76

[~~30~~ 30.0] GMS. PER 1,000 SEEDS 9/13/76

[25] MG. GROAT WEIGHT (each)

[17.5] % GROAT PROTEIN

[5.8] % GROAT OIL

14. INSECTS: (0 = NOT TESTED, 1 = SUSCEPTIBLE, 2 = RESISTANT)

[1] CEREAL LEAF BEETLE [0] BLUEGRASS BILLBUG [0] GRAIN BUG (C. Sayi) [0] NEMATODE (Type) ____

[0] GREEN BUG (Biotype) ____ OTHER *(Specify)* ____

15. DISEASE: (0 = NOT TESTED, 1 = SUSCEPTIBLE, 2 = RESISTANT)

[0] HALO BLIGHT [0] POWDERY MILDEW [0] SEPTORIA LEAF BLOTCH [0] SOIL-BORNE MOSIAC

[0] HELMINTHOSPORIUM LEAF BLOTCH [1] YELLOW DWARF VIRUS [0] VICTORIA BLIGHT [ ] OTHER *(Specify)* ____

SPECIFY RACES TESTED:

	RACES SUSCEPTIBLE	RACES RESISTANT
[2] CROWN RUST.....	326, 294	264, 216
[2] STEM RUST.....		8AF, 6F
[0] COVERED SMUT.....		
[2] LOOSE SMUT.....		Those prevalent in Indiana

16. INDICATE VARIETY YOU BELIEVE MOST CLOSELY TO RESEMBLE THAT SUBMITTED:

CHARACTER	VARIETY	CHARACTER	VARIETY
PLANT TILLERING	Clintford	LEAF COLOR	Clintford
LEAF SIZE	Clintford	LEAF CARRIAGE	Clintford
SEED COLOR	Clintford	SEED SHAPE	Clintford

COMMENTS:

5 of 12 00005