No. 7700045

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Harley D. Jacquot

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 PART OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT

'Jacmar'

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* 11th *day of* August *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 (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 I-245a	1b. VARIETY NAME "JACMAR"	FOR OFFICIAL USE ONLY PV NUMBER 7700045
2. KIND NAME Club Winter Wheat	3. GENUS AND SPECIES NAME Triticum aestivum L.	FILING DATE 2-8-77 / TIME 9:30 A.M. P.M.
4. FAMILY NAME (BOTANICAL) Graminae	5. DATE OF DETERMINATION August 18, 1976	FEE RECEIVED $250.00 $250.00 $250.00 / DATE 2-8-77 2-28-77 7-5-77
6. NAME OF APPLICANT(S) HARLEY D. JACQUOT	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)* NE 435 Campus Street Pullman, Washington 99163	8. TELEPHONE AREA CODE AND NUMBER 509-332-6261
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)* None	10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION	11. DATE OF INCORPORATION

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

None

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.

[X] 13E. Exhibit E, Statement of Ownership. [X] 13F. Exhibit F, Purpose of Development.

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? See exhibit 14 C, No. of generations
[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?
Publication of applicant's name and address in Official Journal is granted [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.

February 1, 1977
(DATE)

Harley D. Jacquot
(SIGNATURE OF APPLICANT)
Retired Agronomist

(DATE)

(SIGNATURE OF APPLICANT)

EXHIBIT A

7700045

Origin and Breeding History of "Jacmar".

1. The "Jacmar", having temporary designation of I-245a, was originated from a collection of 351 individual plants that possessed varying degrees of resistance to yellow stripe rust obtained in a field of early sown Omar variety highly infected with this disease in epidemic proportion in 1961. The plants had sufficient variability to offer continued reselection annually for a period of 5 years from which 12 strains had reasonably short straw characteristic and resistance to seven prevalent races of bunt smut were chosen for natural field crossing with a commercial variety of Moro for improving the yellow stripe rust resistance. The progenies of these crosses were collected and planted in field strips to obtain F_2 hybrids of desirable characteristics which were planted in the selection nursery trials for an additional 4 years to obtain F_6 generation strains that developed relatively short straw and better resistance to yellow stripe rust disease.

2. The F_6 strains exhibited variation of plant height and disease resistance. In the winter of 1972-73, the heavy freeze caused severe winter damage to the plants exposed to the weather where snow cover was lacking resulting from heavy winds from the north of which considerable variation of winter hardiness was shown among the strains. This offered an opportunity to narrow the number of strains having comparatively high winter hardiness. From 1973 to 1976, yield determination and quality tests were made of strain I-245a, along with others, grown in replicated and randomized plots of 100 by 20 feet dimension were harvested by special combine to obtain yield results shown in Table 1 on page 6.

3. The variant characteristics pertaining to plant height, stripe rust resistance, grain yield, milling & baking quality and winter hardiness were eliminated sufficiently to stabilize strain I-245a to obtain high degree of purity by 1976. In a small field of this strain grown and harvested in 1976, there appeared to be only one off-type plant in a population of about 10,000. These off-type plants were taller with variable head elongation.

4. Although there is evidence of satisfactory plant, head and kernel stability, it will be necessary to continue the purification of "Jacmar" by growing collection of a number of plants from foundation seed plantings into plant-to-row nursery trials each succeeding year for excluding genetic segregation in maintaining continued supply of foundation seed during the period of commercial production of certified seed.

EXHIBIT B

7700045

Novelty Statement

1. The "Jacmar" wheat plant has morphological and physiological appearance of typical Omar and Paha varieties except that the spike or head is apically awnleted with slightly larger culm diameter and slightly darker red glume coloration. The plant height of Omar averages 45 inches and Paha about 40 inches while "Jacmar" averages about 34 inches when grown under comparable conditions from early date of seeding. The leaf color of "Jacmar" is slightly lighter green than Paha but darker than that of Omar. Because "Jacmar" was developed for planting in late summer, from August 20 to September 10 by deep furrow drill, it is superior to Omar and Paha for producing relatively short straw to resist lodging. Omar cannot be planted early because of it's weak straw and tall plant height subject to excessive lodging. Paha can be planted earlier than Omar, approximately 10 days, but not as early as "Jacmar" because of the danger of lodging.

2. The statistical data showing the yield and agronomic characteristics of "Jacmar", Paha and Omar are given in Table I in the next page. In addition, the grain samples obtained in 1974 for the three varieties, including Omar, Paha and Jacmar were analyzed for milling and baking by the Western Wheat Quality Laboratory at Washington State University in Pullman, Washington. The following table shows the essential data from the analysis;

VARIETY	FLOUR YIELD %	MILL SCORE	FLOUR ASH %	FLOUR PROTEIN %	MIX CURVE TYPE	AWRC (OBS.) %	VISCOSITY (BROOKFIELD) CORRECTION	COOKIE DIA. CM
OMAR	74.4	92.7	.34	7.8	5L	53.6	49	9.17
PAHA	72.7	88.3	.36	8.0	5L	55.0	42	9.28
JACMAR	72.3	87.7	.35	9.9	3L	53.2	77*	9.41

* Similar to Moro.

3. Seed and plant specimens (typical head and top node of culm) are contained in containers sent under separate cover. There are 1,000 seeds of Omar, Paha and Jacmar weighing 33.9, 35.5 and 33.9 grams respectively. Upon receipt of notification of certification approval from you, I will send the necessary fee and a sample of 2,500 viable seed to your office as required under the Regulations and Rules of Practice in the Plant Variety Protection Act.

TABLE 1. THREE-YEAR AVERAGE AGRONOMIC & YIELD DATA FOR THREE WINTER WHEAT VARIETIES GROWN IN RANDOMIZED TRIPLICATE PLOTS SOWN BY 16-INCH SPLIT-PACKER DRILL ON THE McGREGOR RANCH IN CROP YEARS 1974, 1975 & 1976.

VARIETY NAME	DATE SOWN	PPT. IN.**	% EMER-GENCE	REL. RUST RES.	REL.* WINTER DAM.	PL. HT. IN.	REL. SHAT-TERING	BU. WT. LBS.	GRAIN YIELD IN BUSHELS PER ACRE 1st Rep.	2nd Rep.	3rd Rep.	Aver.	YIELD % OF OMAR	RATIO*** LBS. STRAW PER BU.
OMAR	8/29/73	21.08	67	2	9	47	5	60.9	35.9	35.8	35.7	35.8	100	--
"	9/7/74	15.13	89	4	9	42	5	61.0	42.6	49.0	45.7	45.9	100	--
"	9/10/75	14.24	100	3	9	45	5	61.0	43.6	37.2	43.0	41.1	100	129
Aver.	Sept. 5	16.82	85	3	9	45	5	61.0	40.6	40.7	41.5	40.9	100	--
PAHA	8/29/73	21.08	68	10	9+	43	3	59.4	43.0	40.0	45.1	44.0	123	--
"	9/7/74	15.13	89	10-	9+	38	3	61.0	59.3	54.4	49.1	54.3	119	--
"	9/10/75	14.24	100	7+	9+	38	3	59.0	53.0	58.3	57.8	56.4	137	126
Aver.	Sept. 5	16.82	85	9	9+	40	3	59.8	51.8	51.9	50.7	51.5	126	--
JACMAR	8/29/73	21.08	85	10-	3	36	2	56.1	46.1	49.5	51.9	49.2	137	--
"	9/7/74	15.13	85	9+	3	33	2	59.6	64.9	59.2	54.7	59.6	130	--
"	9/10/75	14.24	90	9+	3	33	2	57.8	76.1	63.3***	76.7	71.7	174	87
Aver.	Sept. 5	16.82	88	9+	3	34	2	57.8	58.1	61.6	60.3	60.1	147	--

* Notes taken in spring of 1973 after a severe cold weather for two periods, one in December from 8 to 15 having an average of minus 9° Fahrenheit and the other in January from 4 to 10 averaging minus 1° Fahrenheit with 9 days in December from 13 to 28 of mild weather averaging 36° Fahrenheit for minimum temperature. The 9 days of mild weather caused the wheat plants to partially break winter dormancy sufficiently to cause substantial winter kill of exposed plants where the snow cover was lacking for protection. Incidently, high frigid winds from the north caused severe killing by the chill factor.

** Crop year from September 1 to August 31. *** Reduced yield due to malfunction of grain drill.

Note 1 - Excessive moisture in early spring restricted root development of all varieties in 1974 so that low precipitation in May and June combined with abnormally high temperature during late June caused considerable yield reduction.

Note 2 - Although there is substantial difference in the yield between replicates, the averages have minimized the variation to a marked degree. The average yields show considerable consistancy in yielding ability within each variety. Incidently, a measured 3.5 acres of "Jacmar" harvested in 1976 yielded 74.2 bushels per acre.

Note 3 - The ratio of pounds of straw produced for each bushel of wheat harvested, in the range of 100 to 110 pounds, is fairly normal which becomes manageable under the conventional tillage practices. Straw yield in excess of 110 pounds for each bushel of grain is considered excessive for desirable utilization while straw yield below 100 pounds is considered more desirable. The most ideal ratio would be 70 to 80 pounds which reflects the most efficient production of grain. Plant samples are cut close to the ground to obtain the straw-grain ratio.

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FORM APPROVED. OMB NO. 40-R3712

FORM GR-470-6
(2-15-73)

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)
HARLEY D. JACQUOT

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*
NE 435 Campus Street

Pullman, washington 99163

FOR OFFICIAL USE ONLY
PVPO NUMBER 7700045
VARIETY NAME OR TEMPORARY DESIGNATION
JACMAR

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

2. TYPE:
[2] 1 = SPRING 2 = WINTER 3 = OTHER *(Specify)* _____
[1] 1 = SOFT 2 = HARD 3 = OTHER *(Specify)* _____
[1] 1 = WHITE 2 = RED 3 = OTHER *(Specify)* _____

3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:
[2 6 0] FIRST FLOWERING (when sown Sept. 1)
[2 6 5] LAST FLOWERING

4. MATURITY *(50% Flowering)*:
[0 1] NO. OF DAYS *EARLIER* THAN .....
[0 2] NO. OF DAYS ~~*LATER*~~ earlier THAN .....
[7] 1 = ARTHUR 2 = SCOUT 3 = CHRIS
[8] 4 = LEMHI 5 = NUGAINES 6 = LEEDS 7=Paha 8=Omar

5. PLANT HEIGHT *(From soil level to top of head)*:
[0 8 7] CM. HIGH
[1 4] CM. TALLER THAN .....
[2 9] CM. ~~SHORTER~~ taller THAN .....
[7] 1 = ARTHUR 2 = SCOUT 3 = CHRIS
[8] 4 = LEMHI 5 = NUGAINES 6 = LEEDS 7=Paha 8=Omar

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] Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT
[0 4] NO. OF NODES *(Originating from node above ground)*
[1] Waxy bloom: 1 = ABSENT 2 = PRESENT
[1] Internodes: 1 = HOLLOW 2 = SOLID
[1 6] CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW Varies 14 to 18 cm.

9. AURICLES:
[1] Anthocyanin: 1 = ABSENT 2 = PRESENT
[1] Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:
[3] Flag leaf at booting stage: 1 = ERECT 2 = RECURVED 3 = OTHER *(Specify)*: semi-erect
[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 3] MM. LEAF WIDTH *(First leaf below flag leaf)*
[1 5] CM. LEAF LENGTH *(First leaf below flag leaf)*:

EXHIBIT D 7700045

Description of additional characteristics not given in Exhibit C.

"Jacmar" is a red chaff club winter wheat, Triticum aestivum L., having white kernels which is suitable for pastry baking.

Initial flowering date of "Jacmar" is about two days earlier than Omar and about one day earlier than Paha.

Plant height of "Jacmar" varies from year to year depending on the date of planting, available soil moisture supply and the temperature in late fall and during the spring growing season. Under average condition for "Jacmar" sown in the period of August 20 to September 10, the plant height averages about 87 centimeters which is about 14 centimeters shorter than Paha and 29 centimeters shorter than Omar.

During the boot stage, the "Jacmar" plant color is green which is slightly darker than Omar and slightly lighter color than Paha.

The flag leaf of "Jacmar" is semi-erect as compared to Omar having recurved leaf. Paha is intermediate in flag leaf character.

The head of "Jacmar" is compact of oval shape and apically awnleted while both Omar and Paha are slightly longer. "Jacmar" has red chaff which is darker than Omar while Paha is intermediate in color.

The coleoptile of "Jacmar" is white in color beneath the surface of ground and average about $3\frac{1}{4}$ inches in length. It is about $\frac{1}{2}$ inch shorter than Paha and about one inch shorter than Omar. The difference in the coleoptile length seems to be correlated in proportion with the plant height.

"Jacmar" has erect plant habit during the seedling stage and becomes prostrate soon after the mean temperature falls to below freezing. The winter habit of "Jacmar" is very similar to that of Omar and Paha. "Jacmar" does not exhibit any physical characteristics to indicate higher degree of hardiness, but in years of abnormally low winter temperature accompanied with the lack of snow cover there is distinct difference in the survival rate in the wake of winter.

The seed of "Jacmar" is ovate and medium in lenght which varies in color from off-white to very light amber. The texture varies from nearly chalky to semi-vitreous depending on the available supply of moisture during the growing season and earliness of seeding. In this respect it very similar to Paha and to lesser degree to Omar in the texture.

"Jacmar" is resistant to all races of yellow stripe rust prevalent in Pacific Northwest most of which is exhibited as immunity with small degree of reaction to the disease attack. It is resistant to such strains that both Omar and Paha are susceptible to.

Like Omar and Paha, "Jacmar" is resistant to all races of bunt smut prevalent in this region. Through repeated inoculation with seven races, the strains showing the greatest degree of resistance were retained for further propagation of which Jacmar was one of the descendant.

The most distinguishing charater of "Jacmar" is the semi-erect flag leaf and relatively short plant height at the post blooming stage. In addition, the apically awnletted head with darker red coloration stands out in a seeded field at maturity as may noted when either Omar or Paha is also grown in a field adjacent to it.

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EXHIBIT E

STATEMENT OF APPLICANT'S OWNERSHIP.

The officers of the McGregor Land & Livestock Company, Hooper, Washington, who's farmland was and is still being used for the wheat improvement program, have given the applicant full breeder's rights to any strain of winter wheat developed that may be qualified for certification of plant variety protection provided such certified seed is made available for use by the company free of royalty payments. This arrangement releaves the company of any liability for foundation seed that may be grown on the McGregor Ranch.

It has been agreed that the company will furnish the land, labor and facilities for continuing the wheat improvement program on the McGregor Ranch for as long as the applicant for certification of plant variety protection is physically and mentally able to manage the nursery and plot testing operations. The facilities used for nursery planting and harvesting have been developed and constructed by the applicant during the years when employed by the McGregor Land & Livestock Company.

There are new strains now appearing in the nursery trials showing considerable promise of greater immunity to the yellow stripe rust, shorter plant height and better milling and baking quality than that of "Jacmar" which will require 6 to 8 generations to be developed to a point for consideration for certification of plant variety protection.

EXHIBIT F

7700045

Statement of the Purpose of Development of a New Variety.

Experimental results from fertilizing winter wheat obtained from 1947 to 1961 by the applicant on the McGregor Ranch showed the need for a variety having considerably shorter plant height and greater winter hardiness than the ones available during this period. In addition, a new variety having high resistance to yellow stripe rust and high yielding ability under heavy fertilizer application was needed to assure high grain production through maximum efficiency of nitrogen utilization and of soil moisture consumption. There were no commercial winter wheat varieties available to meet the requirements by 1961. For that matter, there are no varieties available at present that can be planted in late August and early September in the intermediate rainfall areas of the Pacific Northwest that will give the desired performance.

The experimental results also showed the need for minimum tillage for proper stubble mulching to provide satisfactory soil erosion control and soil moisture conservation. Proper straw mulching through minimum tillage will conserve the soil moisture to permit early seeding for producing maximum grain yield. Yield tests from 1951 to 1961 indicated an increase of about 9 bushels per acre from early seeding over that obtained from seeding by the conventional method.

"Jacmar" has demonstrated it's capability from the performance obtained during the last three years including such characteristics as high yielding ability, satisfactory milling and baking quality, relatively short plant height to resist lodging, desirable winter hardiness, high disease resistance to yellow stripe rust bunt smut, good emergence from deep furrow seeding,relatively low straw weight to each bushel of grain ratio and fairly resistant to shattering.

The name "Jacmar" was derived by contracting the surname of the applicant and the name of the variety Omar to indicate the origin of the plant characteristics and the person who developed the variety. It is quite unlikely that this varietal name is duplicating any other name that may have been recorded in the past. If there is a remote possibility of varietal name duplication, I will be glad to make such change in the name to make the strain eligible for certification.

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EXHIBIT 14C

Number of Generations of Production Beyond Breeder Seed.

Each year, plant-to-row nursery planting will be continued to eliminate off-type plants prior to the blossom stage to maintain purity of variety by compositing the remaining nursery rows showing desirable stability in the varietal purity. After reaching the certified stage of seed production, it will be certified only for three generations in anticipation of requiring this number of generations to build up adequate seed supply by the seed growers for distribution to the commercial farmers.

In the event I am incapacitated, my heirs including Mrs. Frank C. Hachman living at 3319 Larchmont Drive, Salt Lake City, Utah 84109 and Mrs. Oen Huisman living at 13 Valencia Road, Orinda, California 94563 will be designated owners of the variety. Arrangements would be made for the production of foundation seed for the term of the plant variety protection expiring seventeen years from the issue date of the approved certification.

The variety "Jacmar" has not been labeled and sold or publication made in any manner that the variety was to be sold by variety name only as a class of certified seed. Prior to the date of this application, "Jacmar" was temporily designated as I-245a during the testing trials and seed increase.

When this application is approved for certification, I am authorizing the approval of your publishing in the Official Journal all the information normally considered confidential.

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.)

11. HEAD:

[2] Density: 1 = LAX 2 = DENSE

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

[2] 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): _____

[0 4] CM. LENGTH [2 2] MM. WIDTH

12. GLUMES AT MATURITY:

[2] 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

[1] 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 ~~2~~] Cheek: 1 = ROUNDED 2 = ANGULAR
moderately rounded XE

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

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

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

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

[0 6] MM. LENGTH [0 3] MM. WIDTH [3 4] GM. PER 1000 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) _____ [0] LEAF RUST (Races) _____ [2] STRIPE RUST (Races) _____ [2] LOOSE SMUT

[0] POWDERY MILDEW [2] BUNT [1] OTHER (Specify) Cercosporella herpotricoides

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

[0] SAWFLY [0] APHID (Bydv.) [0] 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	Omar	Seed size	Omar
Leaf size	Paha	Seed shape	Omar
Leaf color	Omar	Coleoptile elongation	Paha
Leaf carriage	Paha	Seedling pigmentation	Omar

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.