No. 8400048

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Sogetal, Inc.

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 eighteen 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 [illegible]ETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. [illegible] UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A [illegible] OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS [illegible] BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT

'Mindoro'

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, D.C. *this* 31st *day of* March *in the year of our Lord one thousand nine hundred and* eighty-seven.

Attest:

Kenneth A. Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Richard E. Lyng
Secretary of Agriculture

APPROVAL EXPIRES 4-30-85

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

FORM APPROVED: OMB NO. 0581-0055

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S): Sogetal

2. TEMPORARY DESIGNATION: IS 8322

3. VARIETY NAME: MINDORO

ES 2/17/87

4. ADDRESS *(Street and No. or R.F.D. No., City, State, and Zip Code)*: ~~830 Bransten Road~~ 3872 BAY CENTER PLACE ~~San Carlos, CA 94070~~ HAYWARD, CA 94545

ES per letter dtd 1/21/86

5. PHONE *(Include area code)*: (415) ~~595-5335~~ 785-1881

FOR OFFICIAL USE ONLY

PVPO NUMBER: 8400048

6. GENUS AND SPECIES NAME: Triticum aestivum

7. FAMILY NAME *(Botanical)*: Gramineae

FILING — DATE: 2/13/84 — TIME: 2:30 ☐ A.M. ☒ P.M.

8. KIND NAME: Wheat, Common Hard Red Spring

9. DATE OF DETERMINATION: August , 1982

FEES RECEIVED — AMOUNT FOR FILING: $ 1,000 — DATE: 2/13/84 — AMOUNT FOR CERTIFICATE: $ 500.00 — DATE: November 17, 1986

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*: Corporations

11. IF INCORPORATED, GIVE STATE OF INCORPORATION: Delaware

12. DATE OF INCORPORATION:

13. NAME AND ADDRESS OF APPLICANT REPRESENATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

ES per letter dtd 10/18/85

~~Dr. Robert W. Pyltman Jr.~~ YVES OUDIN
~~830 Bransten Road~~ SOGETAL, INC.
~~San Carlos, CA 94070~~ 3872 BAY CENTER PLACE
HAYWARD, CA 94545

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

a. ☒ Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*

b. ☒ Exhibit B, Novelty Statement

c. ☒ Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*

d. ☒ Exhibit D, Additional Description of the Variety

15. 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) of the Plant Variety Protection Act.)* ☒ Yes *(If "Yes," answer items 16 and 17 below)* ☐ No

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? ☒ Yes ☐ No

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? ☒ Foundation ☒ Registered ☒ Certified

ES per letter dtd 12/30/85

18. DID THE APPLICANT(S) FILE FOR PROTECTION OF THE VARIETY IN THE U.S.? ☒ Yes *(If "Yes," give date)* ☐ No

19. HAS THE VARIETY BEEN OFFERED FOR SALE OR MARKETED IN THE U.S. OR OTHER COUNTRIES? ☐ Yes *(If "Yes," give names of countries and dates)* ☒ No

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request 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 Protection Act.

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

SIGNATURE OF APPLICANT: [signature] — DATE: January 19, 1984

SIGNATURE OF APPLICANT: Sogetal, Inc. — DATE:

1

FORM LMGS-470 (8-83) (Edition of 9-81 is obsolete)

8400048

Sogetal, Inc.

Agri-Business
Biotechnology

PHONE: 415-981-5500

830 Bransten Road
San Carlos, Ca. 94070

Exhibit A.

ES 2/11/87

Breeding History: ~~IS-8322~~ MINDORO

IS 8322 is a hard red spring wheat variety (Triticum aestivum) developed by the International Plant Research Institute for Sogetal. This variety was derived by pedigree selection of progeny from the cross JUPATECO 73 / BLUEJAY by the Centro International de Mejoramiento de Maiz y Trigo (CIMMYT). The line was bulked in the F5 generation and a sample sent to the Organizacão das Cooperativas do Estado do Parana, a growers cooperative in Brazil.

IS 8322 was an aluminum tolerant plant selection from this population in Parana state, Brazil during the 1981 growing season by IPRI. This selection was grown in Klamath Falls, Oregon, USA Spring 1981 and the plot bulked in October 1981. The seed from the Klamath Falls plot was increased in Ontario, Oregon, USA Spring 1982 and increased again as breeders seed in Yuma, Arizona, USA Winter 1982-83. The breeder's seed was released for foundation seed planting November 1983.

ADDENDUM TO WHEAT APPLICATION NO. 8400048

14a. No identifiable variants have been found in ~~'IS-8322'~~ 'MINDORO' during the multiplication process. 'IS-8322' is a stable and uniform cultivar in agronomic appearance and performance across several generations and growing conditions. Agronomic data to support stability is presented in the tables. EMS 2/17/87

14b. ~~'IS-8322'~~ 'MINDORO' is most similar to Fremont but differs in that it heads 4 days earlier at Phoenix, Arizona. 'IS-8322' has a much larger seed (40g/1000k) than Fremont (32g/1000k). The seed shape of 'IS-8322' is similar to Yecora Rojo while the seed shape of Fremont is typical of Northern Hard Red Spring wheats. The seed shape of 'IS-8322' is much more elliptical than the oval seed shape of Fremont. The above comparisons, along with the objective description (13c) show 'IS-8322' to be a novel variety of hard red spring wheat. EMS 2/17/87

8400048

Sogetal, Inc.

Agri-Business Biotechnology

PHONE: 415-981-5500

830 Bransten Road
San Carlos, Ca. 94070

Exhibit B. 'MINDORO'

ES 2/12/87

Novelty Statement: ~~IS 8322~~

IS 8322 is a spring wheat selected to be grown under irrigated conditions in Mediterranean type climates, such as Southerwestern USA. IS 8322 is a high yielding variety comparable to the current California yield standard Anza (see Exhibit D) and is a good bread wheat (see attached USDA quality tests). This is a unique characteristic, the high yielding varieties most widely grown in the Southwest, such as Anza and Yolo have comparatively poor bread quality.

IS 8322 is a high tillering variety with vigorous seedling growth. This variety has a degree of tolerance to soil aluminum toxicity, a soil condition that is receiving wider recognition and concern. Few spring wheat varieties currently grown in the Southwest have known tolerance.

Table 17. 1985 Madera Common Wheat Test

Entry	Yield (lb/a)	Lodging 5/22	Lodging at harvest	BYDV	Plant height (in)	Test weight (lb/bu)	Black point	Yellow berry	Thousand kernel weight (grams)
20 Anza	7260 (5)	2.3	3.8	1.0	37	63.9	2.0	2.0	40.5
112 Yecora Rojo	5980 (30)	2.8	4.0	4.8	32	64.2	2.0	1.0	50.3
221 Phoenix	7220 (7)	2.0	3.0	1.0	35	63.2	1.5	7.0	41.5
243 Probred	5120 (36)	2.0	2.8	5.0	31	63.3	1.5	1.0	51.8
353 Yolo	7600 (3)	1.3	2.5	1.3	37	63.8	1.0	3.0	38.5
415 Klasic	5610 (33)	1.0	1.8	5.0	32	65.1	2.0	1.0	53.0
521 Westbred 911	7250 (6)	1.8	2.3	1.3	34	64.2	1.0	1.0	52.0
536 NK 2437	6220 (25)	1.0	1.5	5.0	30	64.3	1.5	1.0	50.8
538 Probrand 775	6810 (15)	1.0	1.3	3.0	32	62.4	1.5	2.0	42.0
544 Tadinia	6230 (24)	2.0	2.8	1.3	37	63.7	1.0	2.5	43.3
619 IPRI 8314	6200 (26)	2.0	3.5	2.0	38	63.9	1.0	1.0	50.3
620 ~~IPRI 8322~~ — MCLN 88020	6850 (13)	4.3	4.8	2.3	36	63.7	1.0	1.0	43.5
623 9031	6300 (22)	1.0	2.8	1.3	40	63.5	1.0	1.0	37.8
624 WRE 80-34	6800 (16)	2.3	2.8	1.5	39	63.5	1.0	1.0	41.8
627 UC 627	5490 (34)	4.3	4.3	3.3	37	64.5	1.5	1.0	45.0
628 UC 628	6640 (19)	2.5	3.3	1.0	37	63.9	1.0	1.0	42.3
629 UC 629	6940 (11)	1.0	1.0	1.0	39	64.5	1.5	3.5	44.5
630 UC 630	6750 (17)	1.0	1.3	1.3	37	65.1	1.0	2.0	40.3
631 CM 43367	6010 (28)	3.3	4.0	1.3	38	64.3	1.0	1.0	46.0
632 LRR Anza	6930 (12)	1.5	1.5	1.0	38	64.3	1.0	2.5	42.8
633 UC 633	7760 (2)	1.3	2.0	2.0	37	64.1	1.0	3.5	41.8
634 UC 634	6290 (23)	3.5	4.0	1.3	36	65.3	1.5	1.5	43.8
635 UC 635	7090 (9)	1.3	1.5	2.5	36	64.7	1.5	1.0	42.5
636 UC 636	7110 (8)	1.0	2.0	2.3	38	64.1	1.0	2.0	40.3
637 UC 637	5930 (31)	3.0	4.0	3.5	37	64.8	1.0	1.5	42.3
638 CM 16076	6720 (18)	5.3	5.3	1.0	38	64.0	1.0	2.0	47.3
671 IPRI 83501	6580 (20)	4.5	5.8	4.3	35	62.7	1.0	1.0	40.3
672 P982-38	7810 (1)	1.0	1.0	2.0	36	63.4	1.0	1.0	50.0
673 P982-83	7010 (10)	1.0	1.5	2.0	32	64.0	1.0	2.0	47.8
678 MP-302	5330 (35)	1.0	1.3	4.0	29	63.9	2.0	1.0	38.8
679 MP-325	5840 (32)	4.3	4.8	3.3	40	63.5	1.0	1.5	49.5
680 Calgene 1551	6470 (21)	1.5	2.3	2.8	31	62.6	1.5	1.0	50.0
681 UC 681	5980 (29)	1.0	1.3	2.0	39	64.3	1.0	2.5	42.8
682 UC 682	6130 (27)	1.5	2.0	1.8	38	64.3	1.0	2.0	42.8
683 UC 683	7290 (4)	1.0	1.3	1.8	37	63.5	1.5	1.5	44.0
684 Veery 'S'	6840 (14)	1.5	2.3	3.3	38	63.5	1.0	1.0	44.5
Mean	6570	2.0	2.7	2.3	36	63.9	1.3	1.7	44.6
CV	9.1	63.4	60.2	40.1	4.7	0.8	29.6	45.8	4.4
LSD (.05)	840	1.8	2.3	1.3	3	1.0	0.8	1.6	3.9

Rating scale for diseases (area of flag-1 leaf affected), lodging, shatter: 1 = 0-3%, 2 = 4-14%; 3 = 15-29%; 4 = 30-49%; 5 = 50-69%; 6 = 70-84%; 7 = 85-95%; 8 = 96-100%.
Diseases assessed but occurring in trace or less amounts: leaf rust, stripe rust, septoria and powdery mildew.

5

Table 14. 1985 Sutter Common Wheat Test

Entry	Yield (lb/a)	Lodging 5/2	Lodging at harvest	BYDV	Septoria	Plant height (in)	Test weight (lb/bu)	Yellow-berry	Thousand kernel weight (grams)
20 Anza	7100 (5)	1.0	1.0	1.0	2.3	38	62.6	8.0	38.3
112 Yecora Rojo	5510 (33)	1.0	1.0	1.0	6.0	33	64.9	2.0	51.8
221 Phoenix	7460 (3)	1.0	1.0	1.0	1.8	39	62.5	8.0	38.8
243 Probred	5440 (34)	1.0	1.0	1.5	4.0	35	64.4	1.5	52.8
353 Yolo	7610 (1)	1.0	1.0	1.0	1.3	38	63.5	8.0	38.5
415 Klasic	6530 (14)	1.0	1.0	1.3	4.8	34	65.5	2.0	54.0
521 Westbred 911	6750 (10)	1.0	1.0	1.0	4.5	38	62.3	8.0	45.3
536 NK 2437	6270 (20)	1.0	1.0	1.8	5.3	35	64.8	1.5	52.0
538 Probrand 775	6230 (22)	1.0	1.0	1.0	5.8	32	63.1	7.0	44.3
544 Tadinia	6820 (8)	1.0	1.0	1.0	1.0	41	62.2	8.0	41.5
619 IPRI 8314	6070 (26)	1.0	1.3	1.5	2.0	42	63.5	4.5	48.0
620 IPRI 8322	6120 (25)	1.0	1.0	1.8	3.8	38	64.2	3.5	44.5
623 9031	5910 (29)	1.0	1.0	1.3	2.8	38	64.5	2.5	35.0
624 WRE 80-34	5880 (30)	1.0	1.0	1.0	4.5	41	63.6	3.5	40.5
627 UC 627	6030 (27)	1.5	1.3	1.8	2.3	37	65.1	2.5	41.0
628 UC 628	6170 (24)	1.0	1.0	1.0	1.5	38	64.7	3.5	40.8
629 UC 629	6720 (12)	1.0	1.0	1.0	1.8	39	63.5	8.0	38.5
630 UC 630	6440 (17)	1.0	1.0	1.0	2.8	38	64.0	7.5	37.3
631 GM 43367	5580 (32)	1.5	1.3	1.8	2.3	44	64.3	1.5	41.0
632 LRR Anza	6410 (18)	1.0	1.0	1.0	1.3	38	63.0	8.0	38.0
633 UC 633	7440 (4)	1.0	1.0	1.3	2.5	38	62.6	8.0	38.5
634 UC 634	6360 (19)	1.0	1.0	1.0	3.0	35	65.2	7.0	41.8
635 UC 635	6780 (9)	1.0	1.0	1.3	4.8	37	64.3	5.5	38.0
636 UC 636	6250 (21)	1.0	1.3	1.5	3.5	38	64.0	4.5	38.3
637 UC 637	6210 (23)	1.0	1.0	1.0	2.3	39	64.3	7.0	41.0
638 CM 16076	6930 (6)	2.0	1.8	1.0	2.3	43	63.0	8.0	46.3
671 IPRI 83501	6530 (15)	1.0	1.0	3.5	2.0	40	63.2	3.5	40.3
672 P982-38	6730 (11)	1.0	1.0	1.0	4.3	35	62.0	8.0	45.5
673 P982-83	6640 (13)	1.0	1.0	1.0	4.0	36	62.1	8.0	43.5
678 MP-302	4020 (36)	1.0	1.0	1.3	5.0	29	64.5	1.5	40.3
679 MP-325	5210 (35)	2.8	3.0	3.8	2.0	42	63.2	7.0	49.8
680 Calgene 1551	6910 (7)	1.0	1.0	2.0	2.5	34	62.9	3.5	49.3
681 UC 681	5930 (28)	1.0	1.0	1.3	1.0	40	62.7	8.0	40.3
682 UC 682	5590 (31)	1.0	1.0	1.3	1.0	42	62.7	8.0	40.5
683 UC 683	7600 (2)	1.0	1.0	1.3	1.0	41	62.8	8.0	43.8
684 Veery 'S'	6440 (16)	1.0	1.0	3.0	2.0	40	63.3	5.0	39.8
Mean	6350	1.1	1.1	1.4	2.9	38	63.6	5.5	42.7
CV	6.6	25.8	21.1	33.5	28.2	3.7	0.4	19.7	1.8
LSD (.05)	590	0.4	0.3	0.7	1.1	3	0.5	2.2	1.5

Rating scale for diseases (area of flag-1 leaf affected) and lodging: 1 = 0-3%; 2 = 4-14%; 3 = 15-29%; 4 = 30-49%; 5 = 50-69%; 6 = 70-84%; 7 = 85-95%; 8 = 96-100%.

Diseases assessed but occurring in trace or less amounts: leaf rust, stripe rust, powdery mildew, and black point.

Numbers in parentheses indicate relative rank in column.

BYDV ratings (see above scale) were based on percentage of plants showing foliar symptoms.

Table 15. 1985 UC Davis Common Wheat Test

Entry	Yield (lb/a)	BYDV	Stripe Rust	Plant height (in)	Days to heading (after 3/1)	Test weight (lb/bu)	Yellow-berry	Thousand kernel weight (grams)
20 Anza	5690 (26)	2.0	1.3	34	58	62.0	3.5	36.3
112 Yecora Rojo	6630 (10)	2.8	3.0	33	53	61.9	1.0	45.3
221 Phoenix	5940 (21)	2.3	1.8	34	59	61.8	2.0	37.0
243 Probred	6900 (7)	3.0	2.3	31	55	61.6	1.0	47.5
353 Yolo	6880 (8)	2.3	1.5	37	57	62.2	1.5	35.8
415 Klasic	7390 (1)	2.0	1.5	31	54	63.6	1.0	47.0
521 Westbred 911	6170 (17)	1.5	2.0	30	60	61.0	1.0	44.8
536 NK 2437	6270 (15)	3.3	3.3	31	56	61.3	1.0	45.3
538 Probrand 775	5720 (25)	2.0	4.3	30	55	58.9	1.0	35.8
544 Tadinia	5070 (35)	3.0	1.0	39	60	60.3	4.5	37.5
619 IPRI 8314	5260 (32)	3.0	1.0	40	57	60.3	1.0	45.3
620 ~~IPRI-8322~~ [illegible]	5940 (20)	2.0	1.0	36	56	61.1	1.0	42.3
623 9031	5730 (24)	1.0	1.0	36	56	62.0	1.0	38.0
624 WRE 80-34	5490 (30)	2.8	1.0	37	61	60.1	1.0	39.0
627 UC 627	6490 (11)	2.5	3.0	37	61	64.2	1.0	45.0
628 UC 628	6350 (12)	2.3	1.3	35	56	62.5	1.0	40.0
629 UC 629	5890 (22)	1.8	1.0	34	61	62.6	1.0	37.3
630 UC 630	5260 (31)	2.5	2.0	36	61	63.3	2.0	37.5
631 CM 43367	6340 (13)	3.8	1.0	41	58	62.4	1.0	43.3
632 LRR Anza	5780 (23)	2.0	1.3	34	60	61.9	2.5	36.5
633 UC 633	7270 (3)	2.0	1.8	37	58	62.6	2.0	37.3
634 UC 634	6760 (9)	2.3	2.8	37	57	63.5	1.0	39.3
635 UC 635	6220 (16)	2.8	2.5	37	55	62.6	1.0	36.3
636 UC 636	6140 (18)	2.5	2.5	38	59	62.5	1.0	38.0
637 UC 637	7370 (2)	1.8	1.3	36	56	63.5	1.0	39.8
638 CM 16076	7040 (6)	1.5	1.0	39	60	62.0	1.0	41.5
671 IPRI 83501	7130 (4)	2.0	1.3	38	55	62.0	1.0	42.3
672 P982-38	6280 (14)	1.5	2.3	30	61	60.3	1.0	44.5
673 P982-83	6050 (19)	2.0	3.3	35	62	60.8	1.0	43.3
678 MP-302	5580 (28)	2.8	1.0	29	53	61.2	1.0	34.8
679 MP-325	5230 (33)	4.0	2.5	42	58	61.4	1.0	47.0
680 Calgene 1551	5620 (27)	2.8	1.0	31	56	58.7	1.0	44.8
681 UC 681	4920 (36)	4.3	1.0	39	59	61.0	1.0	38.5
682 UC 682	5130 (34)	4.5	1.0	39	56	61.7	1.0	40.5
683 UC 683	5530 (29)	2.8	1.0	36	60	60.7	1.0	39.5
684 Veery 'S'	7110 (5)	2.0	1.3	38	56	61.9	1.0	42.8
Mean	6130	2.5	1.7	35	58	61.7	1.3	40.7
CV	5.3	20.8	27.0	3.7	-	0.5	17.3	2.7
LSD (.05)	450	0.7	0.7	3	-	0.6	0.5	2.2

Rating scale for diseases (area of flag-1 leaf affected) and yellowberry: 1 = 0-3%; 2 = 4-14%; 3 = 15-29%; 4 = 30-49%; 5 = 50-69%; 6 = 70-84%; 7 = 85-95%; 8 = 96-100%.
Diseases assessed but occurring in trace or less amounts: leaf rust, septoria, powdery mildew, and black point.
Numbers in parentheses indicate relative rank in column.
BYDV ratings (see above scale) were based on percentage of plants showing foliar symptoms.

Table 16. 1985 Sacramento - San Joaquin Delta Common Wheat Test

Entry	Yield (lb/a)	BYDV	Powdery mildew	Plant height (in)	Test weight (lb/bu)	Yellow-berry	Thousand kernel weight (grams)
20 Anza	7670 (19)	1.3	1.3	32	63.8	2.5	40.0
112 Yecora Rojo	7640 (20)	2.0	1.8	25	63.7	1.0	46.8
221 Phoenix	8030 (16)	1.5	1.0	32	63.9	3.0	41.5
243 Probred	8480 (5)	2.0	1.3	24	63.3	1.0	48.3
353 Yolo	8910 (2)	1.0	1.0	32	64.0	5.0	38.8
415 Klasic	7750 (18)	2.5	1.0	25	64.6	1.0	49.8
521 Westbred 911	8640 (4)	1.0	1.0	28	63.7	3.0	51.3
536 NK 2437	8320 (7)	2.3	1.3	25	63.1	1.0	49.3
538 Probrand 775	8330 (6)	1.8	2.3	26	61.6	2.0	41.0
544 Tadinia	7050 (29)	1.3	1.0	32	63.4	4.5	40.8
619 IPRI 8314	6960 (30)	1.8	1.0	35	62.7	1.0	46.0
620 ~~IPRI 8322~~ MENDARO	7070 (28)	1.5	1.0	32	62.7	1.0	42.0
623 9031	8150 (9)	1.3	1.0	32	63.9	1.0	37.8
624 WRE 80-34	6690 (33)	2.0	1.0	31	61.8	1.0	39.8
627 UC 627	7390 (25)	1.3	1.0	34	64.2	1.0	47.0
628 UC 628	6640 (34)	2.0	1.0	31	63.2	1.0	43.8
629 UC 629	7540 (22)	1.5	1.0	32	64.2	4.0	42.0
630 UC 630	7440 (24)	1.0	1.0	33	65.1	4.0	40.8
631 CM 43367	6820 (32)	2.5	1.0	34	63.7	1.0	44.8
632 LRR Anza	8220 (8)	1.3	1.0	31	63.6	5.5	41.0
633 UC 633	8960 (1)	1.0	1.0	32	63.8	4.5	39.5
634 UC 634	8110 (11)	1.3	1.3	30	64.7	1.0	41.5
635 UC 635	7550 (21)	1.8	2.5	33	63.7	1.0	38.8
636 UC 636	6950 (31)	2.0	2.5	31	63.3	1.0	38.3
637 UC 637	8050 (14)	1.0	1.3	33	63.8	1.0	42.0
638 CM 16076	8730 (3)	1.0	1.3	32	63.8	5.0	44.3
671 IPRI 83501	7830 (17)	2.0	1.0	32	62.4	1.0	42.5
672 P982-38	8120 (10)	1.3	1.0	29	63.0	2.0	50.8
673 P982-83	8110 (12)	1.5	1.0	29	63.5	2.0	48.8
678 MP-302	6230 (35)	2.5	1.0	26	62.8	1.0	36.5
679 MP-325	6220 (36)	3.3	1.0	34	62.7	2.0	49.8
680 Calgene 1551	7450 (23)	1.8	1.0	28	61.5	1.0	49.0
681 UC 681	7220 (26)	2.3	1.0	34	63.6	2.0	41.3
682 UC 682	7130 (27)	1.5	1.0	34	63.7	3.5	42.5
683 UC 683	8040 (15)	2.0	1.0	32	62.8	2.5	42.5
684 Veery 'S'	8100 (13)	1.8	1.0	34	63.1	1.5	42.0
Mean	7680	1.7	1.2	30	63.4	2.1	43.4
CV	6.6	35.0	25.8	3.7	0.5	48.0	3.0
LSD (.05)	710	0.8	0.4	2	0.6	2.1	2.6

Rating scale for diseases (area of flag-1 leaf affected) and yellowberry: 1 = 0-3%; 2 = 4-14%; 3 = 15-29%; 4 = 30-49%; 5 = 50-69%; 6 = 70-84%; 7 = 85-95%; 8 = 96-100%.

Diseases assessed but occurring in trace or less amounts: leaf rust, stripe rust, septoria, and black point.

Numbers in parentheses indicate relative rank in column.

BYDV ratings (see above scale) were based on percentage of plants showing foliar symptoms.

FORM APPROVED: OMB NO. 0581-0056

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN AND SEED DIVISION
BELTSVILLE, MARYLAND 20785

EXHIBIT C
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY
WHEAT (*TRITICUM SPP.*)

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
Sogetal

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*
~~830 Bransten Road~~ 3872 BAY CENTER PLACE
~~San Carlos, CA 94070~~ HAYWARD, CA 94545

FOR OFFICIAL USE ONLY
PVPO NUMBER 8400048
VARIETY NAME OR TEMPORARY DESIGNATION
~~TS 8322~~ MINDORO

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:
[ ][ ][ ] FIRST FLOWERING [ ][ ][ ] LAST FLOWERING

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

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

6. PLANT COLOR AT BOOTING *(See reverse)*:
[3] 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] Waxy bloom: 1 = ABSENT 2 = PRESENT
[1] Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT
[2] 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
[0][8] MM. LEAF WIDTH *(First leaf below flag leaf)*
[3][5] CM. LEAF LENGTH *(First leaf below flag leaf)*:

FORM LMGS 470-6 (6-82) (Formerly Form LPGS 470-6 (3-79), which may be used)

9

8400048

11. HEAD:

[1] Density: 1 = LAX 2 = DENSE

[2] 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 9] CM. LENGTH

[1 8] 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.)*

[1] 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:

[3] 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 7] MM. LENGTH

[0 3] MM. WIDTH

[5 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'

[2] 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)* _____

[0] LEAF RUST *(Races)* _____

[2] STRIPE RUST *(Races)* _____

[0] LOOSE SMUT

[2] POWDERY MILDEW

[0] BUNT

[2] OTHER *(Specify)* Aluminum toxicity

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

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Anza	Seed size	Anza
Leaf size		Seed shape	Anza
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.

8400048

Sogetal, Inc.

Agri-Business
Biotechnology

PHONE: 415-981-5500

830 Bransten Road
San Carlos, Ca. 94070

EXHIBIT D. 'MINDORO'
YIELD DATA: ~~IS-8322~~

EC
2/11/87

Yield Trial Data

The following yield data was derived from trials at the respective sites indicated. The experimental design used was a four replication test of twenty-five varieties in a complete randomized block design. The mean square error term indicated is for the complete experiment.

1982 Yield Data

Location: Ontario, Oregon

Grower Cooperator: T. Frahm
Rt. 1 Box 745
Ontario, OR 97914

Planting Date: May 1, 1982

Harvest Date: September 15, 1982

Plot Size: $5.5m^2$

Variety	Yield (kilogram/plot)					Yield
	Rep 1	Rep 2	Rep 3	Rep 4	Avg	(bu/ac)
IS 8322	3.320	2.839	2.277	2.093	2.716	73.3 *
ANZA	3.021	2.472	2.256	2.082	2.458	66.2

Error Mean Square - .121606

Protected Least Significant Difference - .331 kilograms *

1983 Yield Data

Location: Wellton, Arizona

Grower Cooperator: Ronald McDonnell
Rt. 1 Box 100
Wellton, AZ 85356

Planting Date: October 25, 1982

Harvest Date: May 10, 1983

Plot Size: $7.5m^2$

11

8400048

Sogetal, Inc.

Agri-Business
Biotechnology

PHONE: 415-981-5500

830 Bransten Road
San Carlos, Ca. 94070

Variety	Yield (kilograms/plot)					Yield
	Rep 1	Rep 2	Rep 3	Rep 4	Avg	(bu/ac)
MINDORO ~~IS 8322~~	5.358	4.791	5.188	5.443	5.195	99.8 *
ANZA	5.330	5.419	5.185	5.106	5.260	101.0

Error Mean Square - .0779

Protected Least Significant Difference - .345 kilograms *

* Yield not significantly different between varieties at the 5% level of confidence using Fisher's Protected Least Significant Difference method of pairwise comparison.

EXHIBIT D

USDA, SEA AR
WESTERN WHEAT QUALITY LAB.
PULLMAN, WA.

INTERNATIONAL PLANT BREEDERS ADV. HRS

NURSCO 1 YUMA, AZ HAL A. LEWIS

LABNUM	VARIETY	IDNO	CLASS	TWT	FYELD	MSCOR	FASH 1/	FPROT 1/	WPROT	MABSC 3/	MTYPE
830001	YECORA ROJO	UC112	HRS	64.6	64.0	71.2	0.42	11.0	12.5	62.3	3H
830002	YOLO	UC353	HRS	65.3	67.2	77.6	0.40	8.6	10.2	60.2	1H
830003	ANZA	CI15284	HRS	65.1	66.1	75.2	0.41	8.2	10.4	61.0	1H
830004		IS8312	HWS	65.1	63.2	69.6	0.43	9.7	11.2	61.3	3H
830005		IS8314	HRS	64.3	70.9	84.0	0.40	11.3	12.3	66.6	4H
830006		IS8316	HWS	64.8	66.4	73.1	0.47	10.1	11.8	67.9	4H
830007		IS8319	HRS	63.4	65.8	72.1	0.48	9.0	11.0	61.9	2H
830008	MINDORO	IS8322	HRS	64.8	69.1	78.7	0.44	10.1	11.3	64.7	2H
830009		IS8325	HRS	66.2	60.3	63.5	0.48	10.8	12.3	62.8	2H

1/ Observed Values Corrected to 14% Moisture Basis.
3/ Absorption at 14% Moisture Corrected to 10% Protein.
4/ Observed Values Corrected to 10% Protein.
5/ Particularly Promising Overall Quality Characteristics.
6/ Promising Overall Quality Characteristics.

USDA, SEA AR
WESTERN WHEAT QUALITY LAB.
PULLMAN, WA.

INTERNATIONAL PLANT BREEDERS ADV. HRS

NURSCO 1 YUMA, AZ HAL A. LEWIS

LABNUM	VARIETY	IDNO	CLASS	BABS	BABSC 3/	MTIME	LVOL	LVOLC 4/	BCRGR	RMKS
830001	YECORA ROJO	UC112	HRS	65.5	64.5	3.6	925	863	4	
830002	YOLO	UC353	HRS	59.0	60.4	1.0	775	862	9	VP-MTIME,LVOL,BCRGR
830003	ANZA	CI15284	HRS	58.4	60.2	1.0	570	680	9	VP-MTIME,LVOL,BCRGR
830004		IS8312	HWS	65.2	65.5	4.1	705	724	9	VP-LVOL,BCRGR
830005		5/IS8314	HRS	72.1	70.8	3.4	925	844	2	
830006		IS8316	HWS	72.2	72.1	4.1	820	814	4	Q-FYELD,LVOL,BCRGR
830007		IS8319	HRS	65.1	66.1	2.7	550	612	9	VP-LVOL,BCRGR
830008		6/IS8322	HRS	69.0	68.9	2.5	805	799	2	Q-LVOL
830009		IS8325	HRS	67.8	67.0	2.6	780	730	9	VP-FYELD,LVOL,BCRGR

COMMENTS: *These samples were evaluated in co-operation with International Plant Breeders. Two selections, IS8314 and IS8322 appear to have promising overall quality characteristics for hard red spring wheat. Milling properties of the check varieties were lower than normal, but used as a reference for the experimental selections. Proteins were lower than desirable levels, which influence loaf volume.*

8400048

15