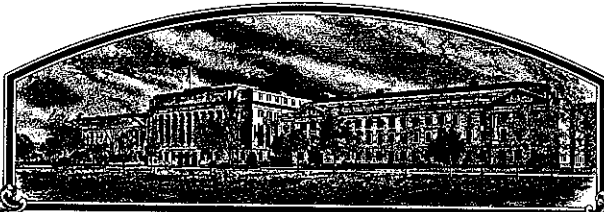


No.

8700091



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Nickerson American Plant Breeders, 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 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 SEED OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS PERMITTED BY THE OWNER OF THE RIGHTS. (34 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

DURUM WHEAT

'Stockholm'

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 October in the year of our Lord one thousand nine hundred and eighty-eight.

Attest:

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



Richard E. Lyng
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

FORM APPROVED: OMB NO. 05B1-0055

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

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) Nickerson American Plant Breeders Inc.		2. TEMPORARY DESIGNATION HD81-466		3. VARIETY NAME Stockholm	
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) 5201 Johnson Drive Mission, Kansas 66205		5. PHONE (Include area code) 913-384-4940 KS 303-532-3721 CO		FOR OFFICIAL USE ONLY PVPO NUMBER 8700091	
6. GENUS AND SPECIES NAME Triticum durum		7. FAMILY NAME (Botanical) Gramineae		FILING DATE March 23, 1987 TIME 10:15 <input checked="" type="checkbox"/> A.M. <input type="checkbox"/> P.M.	
8. KIND NAME Spring Durum Wheat		9. DATE OF DETERMINATION 1=1981 2=1984		AMOUNT FOR FILING \$ 1800 ⁰⁰ DATE March 23, 1987	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation				AMOUNT FOR CERTIFICATE \$ 200 ⁰⁰ DATE Sept. 7, 1988	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware				12. DATE OF INCORPORATION	

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

R.E. Heiner 5201 Johnson Drive Mission, KS 66205 (913-384-4940)	or	R.F. Bruns C. Bruns 806 N. Second St. Berthoud, CO 80513 PHONE (Include area code): (303-532-3721)
---	----	---

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 Variety (Request form from Plant Variety Protection Office.)
- d. Exhibit D. Additional Description of Variety.
- e. Exhibit E. Statement of the Basis of Applicant's Ownership.
- f. Exhibit F. Quality and Agronomic Data

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

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?

Yes (If "Yes," give date)
 No

19. HAS THE VARIETY BEEN RELEASED, 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 or 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.


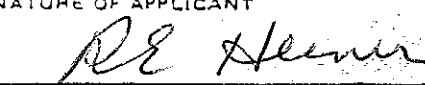
SIGNATURE OF APPLICANT 	DATE 2-12-87
SIGNATURE OF APPLICANT 	DATE 2-23-87

EXHIBIT A

ORIGIN AND BREEDING HISTORY OF STOCKHOLM

Stockholm originated from the cross 'Calvin/Edmore' which was made at Berthoud, Colorado in 1978. F2 selections from this cross were advanced in the greenhouse through the F4 generation by single seed descent. The original bulk was from a single F5 head-row selection made at an AgriPro breeding nursery in Hunter, North Dakota in 1980. This bulk was entered into yield trials in 1981 under the experimental number HD81-466. This line has been yield tested in AgriPro nurseries in the Red River Valley from 1981 to 1986. It has been tested in the Uniform Regional Durum Nursery from 1984 to 1986.

There were 100 head-rows grown in Berthoud, CO in 1983 and 94 were selected to produce breeder seed. Approximately 2,276 pounds of breeder seed was produced in Berthoud, CO in 1984.

Stockholm is uniform and stable. Less than .5% of the plants were rogued from the foundation fields in 1985. Approximately 95% of the rogued variant plants were 2 to 10 centimeters taller than Stockholm. Less than .5% of these total variant plants may be encountered in subsequent generations.

EXHIBIT B

NOVELTY STATEMENT

Stockholm is most similar to the durum wheat 'Lloyd'. However, it can be distinguished by the following morphological characteristics:

-Both Stockholm and Lloyd have acuminate type beaks. However, Stockholm's are significantly longer, (see statistical data following page).

-Stockholm has an apiculate shoulder shape. Lloyd is described as having an elevated shoulder shape. (Crop Science, Volume 24, March-April 1984).

8700091

ANOVA TABLE FOR BEAK LENGTH

STOCKHOLM VS. LLOYD

SOURCE	DF	SS	MS
TOTAL	49	359.825	
VAR	1	114.610	114.610
ERROR	48	245.216	5.109

F-TEST = 22.434**
CV = 5.247
LSD(5%) = 0.256

MEANS FOR EACH VARIETY

Stockholm Mean: 7.504 mm's
Lloyd Mean: 4.476 mm's

** The difference in means of beak length are significantly different at the .01 probability level.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY
WHEAT (TRITICUM SPP.)

INSTRUCTIONS: See Reverse.

NAME OF APPLICANT(S) Nickerson American Plant Breeders Inc. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) 5201 Johnson Drive Mission, KS 66205	FOR OFFICIAL USE ONLY
	PVPO NUMBER 8700091 VARIETY NAME OR TEMPORARY DESIGNATION

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:

<input type="text" value="2"/>	1 = COMMON	2 = DURUM	3 = EMMER	4 = SPELT	5 = POLISH	6 = POULARD	7 = CLUB
--------------------------------	------------	-----------	-----------	-----------	------------	-------------	----------

2. TYPE:

<input type="text" value="1"/>	1 = SPRING	2 = WINTER	3 = OTHER (Specify) _____	<input type="text" value="2"/>	1 = SOFT	3 = OTHER (Specify) _____
					2 = HARD	
<input type="text" value="3"/>	1 = WHITE	2 = RED	3 = OTHER (Specify) Amber			

3. SEASON - NUMBER OF DAYS FROM _____ planting TO:

<input type="text" value="0"/> <input type="text" value="6"/> <input type="text" value="2"/>	FIRST FLOWERING	<input type="text" value="0"/> <input type="text" value="6"/> <input type="text" value="7"/>	LAST FLOWERING
--	-----------------	--	----------------

4. MATURITY (50% Flowering):

<input type="text" value="0"/> <input type="text" value="1"/>	NO. OF DAYS EARLIER THAN	<input type="text" value="7"/>	1 = ARTHUR	2 = SCOUT	3 = CHRIS																
<input type="text" value="---"/>	NO. OF DAYS LATER THAN	<input 26="" 498="" 605"="" 924="" data-label="Form" type="text" value="---</input></td> <td>4 = LEMHI</td> <td>5 = NUGAINES</td> <td>6 = LEEDS 7=Lloyd</td> </tr> </table> </div> <div data-bbox="/> <p>5. PLANT HEIGHT (From soil level to top of head):</p> <table> <tr> <td><input type="text" value="0"/><input type="text" value="6"/><input type="text" value="9"/></td> <td>CM. HIGH</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="text" value="0"/><input type="text" value="2"/></td> <td>CM. TALLER THAN</td> <td><input type="text" value="7"/></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="text" value="---"/></td> <td>CM. SHORTER THAN</td> <td><input 26="" 605="" 650"="" 924="" data-label="Form" type="text" value="---</input></td> <td>1 = ARTHUR</td> <td>2 = SCOUT</td> <td>3 = CHRIS</td> </tr> <tr> <td></td> <td></td> <td></td> <td>4 = LEMHI</td> <td>5 = NUGAINES</td> <td>6 = LEEDS 7=Lloyd</td> </tr> </table> </div> <div data-bbox="/> <table> <tr> <td>6. PLANT COLOR AT BOOTING (See reverse):</td> <td>7. ANTHUR COLOR:</td> </tr> <tr> <td><input type="text" value="3"/> 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN</td> <td><input type="text" value="1"/> 1 = YELLOW 2 = PURPLE</td> </tr> </table> </td></tr></table>	<input type="text" value="0"/> <input type="text" value="6"/> <input type="text" value="9"/>	CM. HIGH					<input type="text" value="0"/> <input type="text" value="2"/>	CM. TALLER THAN	<input type="text" value="7"/>				<input type="text" value="---"/>	CM. SHORTER THAN	<input 26="" 605="" 650"="" 924="" data-label="Form" type="text" value="---</input></td> <td>1 = ARTHUR</td> <td>2 = SCOUT</td> <td>3 = CHRIS</td> </tr> <tr> <td></td> <td></td> <td></td> <td>4 = LEMHI</td> <td>5 = NUGAINES</td> <td>6 = LEEDS 7=Lloyd</td> </tr> </table> </div> <div data-bbox="/> <table> <tr> <td>6. PLANT COLOR AT BOOTING (See reverse):</td> <td>7. ANTHUR COLOR:</td> </tr> <tr> <td><input type="text" value="3"/> 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN</td> <td><input type="text" value="1"/> 1 = YELLOW 2 = PURPLE</td> </tr> </table>	6. PLANT COLOR AT BOOTING (See reverse):	7. ANTHUR COLOR:	<input type="text" value="3"/> 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN	<input type="text" value="1"/> 1 = YELLOW 2 = PURPLE
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<input type="text" value="3"/> 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN	<input type="text" value="1"/> 1 = YELLOW 2 = PURPLE																				

8. STEM:

<input type="text" value="1"/> Anthocyanin: 1 = ABSENT 2 = PRESENT	<input type="text" value="2"/> Waxy bloom: 1 = ABSENT 2 = PRESENT
<input type="text" value="1"/> Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT	<input type="text" value="1"/> Internodes: 1 = HOLLOW 2 = SOLID
<input type="text" value="0"/> <input type="text" value="5"/> NO. OF NOCES (Originating from node above ground)	<input type="text" value="1"/> <input type="text" value="8"/> CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

9. AURICLES:

<input type="text" value="2"/> Anthocyanin: 1 = ABSENT 2 = PRESENT	<input type="text" value="1"/> Hairiness: 1 = ABSENT 2 = PRESENT
--	--

10. LEAF:

<input type="text" value="2"/> Flag leaf at booting stage: 1 = ERECT 2 = RECURVED 3 = OTHER (Specify) _____	<input type="text" value="2"/> Flag leaf: 1 = NOT TWISTED 2 = TWISTED
<input type="text" value="1"/> Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT	<input type="text" value="2"/> Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT
<input type="text" value="1"/> <input type="text" value="4"/> MM. LEAF WIDTH (First leaf below flag leaf)	<input type="text" value="2"/> <input type="text" value="6"/> CM. LEAF LENGTH (First leaf below flag leaf)

11. HEAD:

3 Density: 1 = LAX 2 = DENSE 3 = MIDDENSE 1-2 Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER (Specify) _____

4 Awedness: 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) _____

8. 4 CM. LENGTH 1 1 MM. WIDTH

12. GLUMES AT MATURITY:

3 Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.) 3 = LONG (CA. 9 mm.) 3 Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.) 3 = WIDE (CA. 4 mm.)

6 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:

2 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

1 Brush: 1 = SHORT 2 = ~~SHORT~~ midlong 3 = LONG 1 Brush: 1 = NOT COLLARED 2 = COLLARED

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

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

7. 6 MM. LENGTH 3. 0 MM. WIDTH 3 8 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) 3 = Moderately Susceptible 4 = Moderately Resistant

2 STEM RUST (Races) field races 4 LEAF RUST (Races) field races 0 STRIPE RUST (Races) _____ 0 LOOSE SMUT

0 POWDERY MILDEW 0 BUNT 0 OTHER (Specify) _____

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant) 3 = Moderately Susceptible 4 = Moderately 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	Lloyd	Seed size	Lloyd
Leaf size	Lloyd	Seed shape	Lloyd
Leaf color	Lloyd	Coleoptile elongation	Lloyd
Leaf carriage	Lloyd	Seedling pigmentation	Lloyd

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. T. Briggie 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. 25 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.

EXHIBIT D

ADDITIONAL DESCRIPTION OF STOCKHOLM

Stockholm is a spring durum wheat bred and developed by Nickerson American Plant Breeders Inc. It was tested as the experiment number HD81-466.

Stockholm is a semidwarf height variety with very good straw strength and medium to medium-early maturity. It has good test weight levels compared to other semidwarf varieties. The quality of Stockholm is satisfactory with strong gluten properties.

Juvenile plant growth habit is erect. Plant color at boot is blue green with a recurved, twisted flag leaf. Head shape is tapering to strap, middense, awned and head color is white at maturity. Glumes are long and wide with apiculate shoulders and acuminate beaks. Seed shape is elliptical with rounded cheeks; seed crease is narrow and shallow.

Stockholm is well adapted to the durum wheat region of North Dakota and surrounding areas. It is especially well suited to the high yield areas such as the Red River Valley.

EXHIBIT E

STATEMENT OF THE BASIS OF APPLICANT'S OWNERSHIP

Nickerson American Plant Breeders Inc. is the applicant for protection in this case being:

- a) The incorporated business (registered in Delaware) for and within which regular employees have bred the named variety.
- b) The proprietary owner and intending commercial user of the variety.

EXHIBIT F.

QUALITY AND AGRONOMIC DATA

Quality datapage 1-2
Agronomic datapage 3 Thru 7
Disease Ratingspage 8

9

NAPB DURUM QUALITY DATA
1981-1986 AVERAGES

Variety	No. Loc.	T. Wt. Lbs/Bu	Semolina Protein 14% mb	Semolina Color ppm	Mix Rate
Vic	15	60.6	14.0	7.0	7.0
Fjord	15	61.2	13.5	8.7	7.8
Lloyd	5*	60.8	12.2	7.0	6.0
Stockholm	5*	60.9	12.2	6.3	6.6
Vic	5*	60.8	13.3	6.0	7.4
Cando	12	58.6	13.3	7.6	3.5
Stockholm	12	60.0	13.1	8.0	6.6

* 1984-1986

1985 UNIFORM REGIONAL DURUM NURSERY
Langdon, Minot, Carrington, Williston, Dickinson, Fargo

Variety	T. Wt. Lbs/Bu	Vit Ker %	1000 K.Wt. gm	Wht Pro %	Semo Ext %	Specks* Spk/10 sq"	Spag Color Unit	Mix Rate 1-8	Firm g-cm	Overall Value**
Ward	59.9	79	39.8	16.1	59.4	73	8.2	3.2	8.1	1.8
Cando	59.9	67	37.0	14.9	58.0	78	8.1	2.8	7.9	1.5
Vic	60.8	71	42.4	15.5	57.6	69	8.6	6.0	8.8	3.8
Lloyd	60.3	68	40.7	14.6	58.5	93	8.3	6.5	8.6	2.3
Monroe	59.5	70	42.6	15.3	57.6	77	8.5	6.7	9.0	3.7
Stockholm	60.5	63	39.7	14.1	57.5	74	8.4	6.0	8.6	2.2
Fjord	60.8	61	40.3	15.2	56.8	73	8.8	6.7	8.2	2.7

* low score = good

** evaluation 1 = no promise 2 = little promise 3 = some promise 4 = good promise

NAPB DURUM QUALITY DATA
1981-1986 AVERAGES

<u>Variety</u>	<u>No. Loc.</u>	<u>T. Wt. Lbs/Bu</u>	<u>Semolina Protein 14% mb</u>	<u>Semolina Color ppm</u>	<u>Mix Rate</u>
Vic	15	60.6	14.0	7.0	7.0
Fjord	15	61.2	13.5	8.7	7.8
Lloyd	5*	60.8	12.2	7.0	6.0
Stockholm	5*	60.9	12.2	6.3	6.6
Vic	5*	60.8	13.3	6.0	7.4
Cando	12	58.6	13.3	7.6	3.5
Stockholm	12	60.0	13.1	8.0	6.6

* 1984-1986

OVER YEAR SUMMARY OF REGIONAL DURUM NURSERY - N. DAKOTA LOCATIONS, 1984-85

Variety	Yield - Bu/A			3 Yr. Avg.	% of Vic	(16)	(16)	(16)	(9)
	84(5)	85(5)	86(5)			T.Wt. lb/bu	Head. Days	Ht. cm	Lodg. 1-9
Rugby	43.8	53.1	53.1	50.2	103	59.6	57.9	92.0	2.6
Fjord	43.3	54.5	49.4	49.1	101	60.2	57.2	90.2	2.4
Ward	43.5	51.3	51.7	49.0	101	59.3	57.7	91.3	2.5
Vic	44.8	52.9	48.2	48.6	100	59.3	57.7	91.8	2.4
Stockholm	44.9	56.3	43.7	48.0	99	56.4	58.3	70.4	1.4
Monroe	44.4	49.8	48.8	47.7	98	58.6	55.8	86.8	2.3
Laker	43.6	53.8	44.1	47.0	96	56.8	59.6	77.4	3.6
Lloyd	42.1	54.0	41.6	45.6	94	54.2	59.8	69.3	1.6
Cando*	41.7	50.6	-	45.0	93	55.3	58.8	68.0	1.2

() - indicates number of locations

* - Cando not tested in 1986. Yield and agronomic averages adjusted.

1-9 - Scores based on a scale of 1-9 (1 = best)

SPRING WHEAT TRIAL SUMMARIES
OVER LOCATIONS-OVER YEARS

VARIETY OR LINE: CANDO VERSUS STOCKHOLM

<u>STATE</u>	<u>YIELD OVER YEARS</u>			<u>STATE</u>	<u>TEST WT. OVER YEARS</u>		
	<u>BU/A</u>	<u>BU/A</u>	<u>NO.</u>		<u>BU/A</u>	<u>BU/A</u>	<u>NO.</u>
	<u>CANDO</u>	<u>STK</u>	<u>LOC.</u>		<u>CANDO</u>	<u>STK</u>	<u>LOC.</u>
MN	60.1	61.6	8	MN	60.5	60.3	4
ND	53.2	55.7	19	ND	59.0	59.3	14
SD	39.6	43.6	4	SD	57.9	60.1	4

<u>REGION</u>	<u>YIELD OVER YEARS</u>			<u>REGION</u>	<u>TEST WT. OVER YEARS</u>		
	<u>BU/A</u>	<u>BU/A</u>	<u>NO.</u>		<u>BU/A</u>	<u>BU/A</u>	<u>NO.</u>
	<u>CANDO</u>	<u>STK</u>	<u>LOC.</u>		<u>CANDO</u>	<u>STK</u>	<u>LOC.</u>
EAST	55.9	57.1	8	EAST	58.1	58.2	8
R.RIVER	67.9	70.9	14	R.RIVER	62.3	62.4	5
WEST	37.3	40.3	12	WEST	58.9	60.1	12

OVER LOCATION/YEARS

<u>VARIETY</u>	<u>NO.</u>	<u>YIELD</u>	<u>NO.</u>	<u>AVE</u>	<u>NO.</u>	<u>AVE</u>	<u>NO.</u>	<u>AVE</u>
	<u>LOC</u>		<u>LOC</u>	<u>TW</u>	<u>LOC</u>	<u>HT.</u>	<u>LOC.</u>	<u>HD.</u>
CANDO	34	54.2	25	59.3	27	73.1	25	62.2
STOCKHOLM	34	56.8	25	60.0	27	74.4	25	61.2

NOTE: This summary includes AgriPro and Uniform Regional data from 1984-86.

SPRING WHEAT TRIAL SUMMARIES
OVER LOCATIONS-OVER YEARS

VARIETY OR LINE: STOCKHOLM VERSUS VIC

STATE	YIELD OVER YEARS			STATE	TEST WT. OVER YEARS		
	BU/A	BU/A	NO.		BU/A	BU/A	NO.
	STK	VIC	LOC.		STK	VIC	LOC.
MN	61.5	61.7	11	MN	59.2	59.9	6
ND	51.5	51.4	28	ND	57.8	59.5	23
SD	42.2	41.2	6	SD	59.7	61.4	6

REGION	YIELD OVER YEARS			REGION	TEST WT. OVER YEARS		
	BU/A	BU/A	NO.		BU/A	BU/A	NO.
	STK	VIC	LOC.		STK	VIC	LOC.
EAST	52.9	56.2	11	EAST	55.8	58.4	11
R.RIVER	65.4	63.6	20	R.RIVER	58.8	60.7	9
WEST	41.6	39.7	20	WEST	60.3	60.8	20

OVER LOCATION/YEARS

VARIETY	NO. LOC	YIELD	NO. LOC	AVE TW	NO. LOC	AVE HT.	NO. LOC.	AVE HD.
STOCKHOLM	51	53.4	40	58.7	41	73.0	36	59.1
VIC	51	52.6	40	60.1	41	94.5	36	58.6

NOTE: This summary includes AgriPro and Uniform Regional data from 1984-86.

SPRING WHEAT TRIAL SUMMARIES
OVER LOCATIONS-OVER YEARS

VARIETY OR LINE: LLOYD VERSUS STOCKHOLM

STATE	YIELD OVER YEARS			STATE	TEST WT. OVER YEARS		
	BU/A	BU/A	NO.		BU/A	BU/A	NO.
	LLOYD	STK	LOC.		LLOYD	STK	LOC.
MN	61.0	60.6	9	MN	58.1	59.2	6
ND	48.9	50.0	25	ND	56.5	57.8	23
SD	37.2	42.2	6	SD	57.0	59.7	6

REGION	YIELD OVER YEARS			REGION	TEST WT. OVER YEARS		
	BU/A	BU/A	NO.		BU/A	BU/A	NO.
	LLOYD	STK	LOC.		LLOYD	STK	LOC.
EAST	50.8	52.9	11	EAST	54.2	55.8	11
R.RIVER	63.7	65.7	15	R.RIVER	57.0	58.8	9
WEST	40.2	41.6	20	WEST	58.8	60.3	20

OVER LOCATION/YEARS

VARIETY	NO. LOC	YIELD	NO. LOC	AVE TW	NO. LOC	AVE HT.	NO. LOC.	AVE HD.
LLOYD	46	50.4	40	57.2	36	71.4	31	61.3
STOCKHOLM	46	52.1	40	58.7	36	71.9	31	59.7

NOTE: This summary includes AgriPro and Uniform Regional data from 1984-86.

SPRING WHEAT TRIAL SUMMARIES
OVER LOCATIONS-OVER YEARS

VARIETY OR LINE: FJORD VERSUS STOCKHOLM

STATE	YIELD OVER YEARS			STATE	TEST WT. OVER YEARS		
	BU/A	BU/A	NO.		BU/A	BU/A	NO.
	FJORD	STK	LOC.		FJORD	STK	LOC.
MN	60.9	61.5	11	MN	60.7	59.2	6
ND	52.3	51.5	28	ND	60.4	57.8	23
SD	41.4	42.2	6	SD	60.9	59.7	6

REGION	YIELD OVER YEARS			REGION	TEST WT. OVER YEARS		
	BU/A	BU/A	NO.		BU/A	BU/A	NO.
	FJORD	STK	LOC.		FJORD	STK	LOC.
EAST	56.2	52.9	11	EAST	59.7	55.8	11
R.RIVER	62.7	65.4	20	R.RIVER	61.4	58.8	9
WEST	42.1	41.6	20	WEST	61.3	60.3	20

OVER LOCATION/YEARS

VARIETY	NO. LOC	YIELD	NO. LOC	AVE TW	NO. LOC	AVE HT.	NO. LOC.	AVE HD.
FJORD	51	53.2	40	60.9	41	92.3	36	58.0
STOCKHOLM	51	53.4	40	58.7	41	73.0	36	59.1

NOTE: This summary includes Agripro and Uniform Regional data from 1984-86.

STEM RUST AND LEAF RUST RATINGS FROM ST. PAUL, MINNESOTA (McVEY)

	STEM RUST		LEAF RUST	
	<u>1985</u>	<u>1986</u>	<u>1985</u>	<u>1986</u>
Fjord	0	0	60MS	T-5MS-S
Monroe	0	0	40MS	TR
Rugby	0	0	20MR,60S	TMS
Ward	0	0	60MS	TS
Stockholm	0	0	60MS	TR
Cando	0	-	40S	-
Lloyd	0	0	60S	TMS
Vic	0	0	60S	TMS
Laker	40MS	5MR	60MS	TMR
Mindum	40S	40S	TS	TS