No. 7900119

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Cornell Agricultural Experiment Station

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF 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 EX-[illegible]UDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, [illegible]MPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT [illegible]Y THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. [illegible]NITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS [illegible]F CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS [illegible] THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOFT WHITE WINTER WHEAT

'Houser'

PLANT VARIETY PROTECTION OFFICE · U.S. DEPARTMENT OF AGRICULTURE

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* 29th *day of* January *in the year of our Lord one thousand nine hundred and* eighty-one.

Attest:

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

Secretary of Agriculture

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: *See Reverse.*

FORM APPROVED
OMB NO. 40-R3822

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1a. TEMPORARY DESIGNATION OF VARIETY NY 5954-36	1b. VARIETY NAME Houser	FOR OFFICIAL USE ONLY PV NUMBER 7900119
2. KIND NAME Soft White Winter	3. GENUS AND SPECIES NAME Triticum aestivum L. em. Thell.	FILING DATE 9-17-79 / TIME 4:00 A.M. P.M.
4. FAMILY NAME (BOTANICAL) Gramineae	5. DATE OF DETERMINATION 9/77	FEE RECEIVED $ 500.00 / $ 250.00 / DATE 9-10-79 / 12/01/80
6. NAME OF APPLICANT(S) Cornell Agricultural Experiment Station	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)* Cornell University, Ithaca, NY 14853	8. TELEPHONE AREA CODE AND NUMBER (607) 256-5420

9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)* State Agricultural Experiment Station	10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION New York	11. DATE OF INCORPORATION 1888

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

Mark E. Sorrells, Department of Plant Breeding and Biometry, 252 Emerson Hall, Cornell University, Ithaca, New York 14853 (607) 256-3103

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.

D 10/17/80

14a. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a). (If "Yes," answer 14B and 14C below.)* [x] YES [ ] NO

14b. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? [x] YES [ ] NO

14c. IF "YES," TO 14B, HOW MANY GENERATIONS OF PRODUCTION BEYOND BREEDER SEED? [x] FOUNDATION [ ] REGISTERED [x] CERTIFIED

15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? [ ] YES [x] NO *(If "Yes," give name of countries and dates.)*

15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? [ ] YES [x] NO *(If "Yes," give name of countries and dates.)*

16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? [x] YES [ ] NO

17. The applicant(s) declare(s) that a viable sample of basic seed 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 Act.

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

August 28, 1979
(DATE)

Ronald J. Kuhr
(SIGNATURE OF APPLICANT)

(DATE)

(SIGNATURE OF APPLICANT)

FORM GR-470 (1-78)

INSTRUCTIONS

GENERAL: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and $500 fee ($250 filing fee and $250 examination fee) to U.S. Dept. of Agriculture, Agricultural Marketing Service, Livestock, Poultry, Grain and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, 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 commercial 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 uniformity and 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, his decision published, or the certificate has been issued. However, if the applicant specified "NO," he may change his choice. (See section 180.16 of the Regulations and Rules of Practice.)

15a See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.

EXHIBIT 13A.

1. Houser (C.I. 17736) is a selection from the F_5 bulk of the following 1959 hybrid cross: Brevor/Norin 10//NY wheat-rye selection/3/Hope Hussar/Yorkwin/4/Genesee//C.I. 12658/Alaskan/3/Avon.

2. The bulk progeny of the cross was field grown at a population density of three bushels per acre until the F_4 generation. The F_5 generation was space planted and individual spikes selected from plants showing good agronomic type. Each spike was increased as an individual line. No further selection was practiced within the line. Purity was maintained by annually roguing off types. Houser was tested in 14 yield trials over a period of 10 years. During this period data were collected on grain yield, test weight, height, grain quality, general appearance, and reaction to prevailing diseases. 11/3/80

	Grain Yield Kg/h	Test Weight Kg/hl	Height cm
Yorkstar	4080	71.6	100
Arrow	3906	74.8	98
Ticonderoga	4123	71.2	89
Houser	4333	71.0	90
Purcell	4357	73.9	95

3. Variants observed in Houser are beardless plants, usually shorter in height but similar in other characteristics. The frequency of this variant is less than or equal to 0.1 percent in all recognized classes of seed.

4. The characteristics of Houser described herein, are stable over generations and may be substantiated by inspection records of the New York Seed Improvement Cooperative.

Table 1

SUMMARY OF QUALITY CHARACTERISTICS - HOUSER

Advanced Nursery - 3 years, 8 tests

Milling Quality Score +	106.1A
Baking Quality Score	101.1A
Combined Quality Score	98.6B

Wheat

Micro Test Weight kg/hl	73.9
Protein %	9.8
Particle Size Index %	43.3
Flour Yield %	70.8

Quadrumat Flour

Ash %	0.46
Protein %	8.0
Viscosity as is	32.0
Viscosity adjusted	71.6
Micro AWRC %	53.9
Cookie Diameter cm	18.4
Top Grain	6.6

Uniform Eastern Soft White Winter Wheat Nursery - 3 years, 3 tests

Milling Quality Score	104.3A
Baking Quality Score	101.0A
Combined Quality Score	100.8A

Wheat

*Moisture %	11.8
*Test Weight kg/hl	74.2
Protein %	10.3
Ash %	0.39
Particle Size Index %	38.6
Sizing Flour Content %	9.3
Reduction Passes No.	9.0
Break Flour Yield	37.6
Flour Yield %	76.8
*Millability Score	118.3

Straight - Grade Flour

*Moisture %	13.7
Ash %	0.39
Protein %	8.5
Viscosity as is	52.3
Viscosity adjusted	80.0
Micro AWRC %	49.7
Cookie Diameter cm	17.9
Top Grain	6.0

cont'd.....

Summary (cont'd.)

Cake Patent Flour

Ash %	0.30
Protein %	7.7
Initial pH	5.75
Final pH	4.75
*Chlorine Response pH/ml/g	2.94
Opt. Liquid Level ml	121.0
Cake Volume ml	877.0
International Score	67.3

*Data available from only two years
+Scores are all relative to Genesee

All tests conducted between 1976 and 1979 by the Soft Wheat Quality Laboratory, Ohio Agric. Research and Development Center, Wooster, Ohio 44691

EXHIBIT 13B.

'Houser' is the only common soft white winter wheat that is adapted to growing conditions in the northeastern United States and has a mid dense, awned spike with white chaff. 11/3/80

Houser is most similar to the Cornell cultivars, 'Ticonderoga' and 'Yorkwin'. Houser and Ticonderoga are similar in kind, type, maturity, most stem and leaf traits, spike density, color, and shape, seed shape, and seed crease size. Compared to Ticonderoga, Houser is slightly taller, has a more erect flag leaf at booting, and has slightly longer glumes and kernels. The glume shoulders of Houser are square and the beaks are acuminate in contrast to the oblique shoulders and obtuse beaks of Ticonderoga. The most obvious difference between these two cultivars is the presence of awns on Houser and apical awnlets on Ticonderoga. The spike shape of Houser is slightly more tapered than that of Ticonderoga. Houser is more resistant to leaf rust and powdery mildew, and Ticonderoga is more resistant to stem rust and stripe rust. Houser also has several similarities to Yorkwin. These two cultivars are similar in maturity, most stem characteristics, spike length, shape and color, glume width, shoulder shape, and seed crease size. Houser is significantly shorter in plant height, and its spike is wider and awned not awnleted. The glumes of Yorkwin are shorter and the beaks are not acuminate and the seed are somewhat smaller than that of Houser. Houser is more resistant to leaf rust and powdery mildew.

Houser also has similarities to other cultivars developed in Canada, Michigan, and the northwestern United States; however, to my knowledge, Houser has the greatest number of similarities to Ticonderoga and Yorkwin. Houser is probably more similar to the Canadian variety 'Fredrick' in glume length and width, and more similar to 'Genesee' in seed length and width. Both of these cultivars may be easily distinguished from Houser by their brown glume color and apical awnlets. Houser may be distinguished from soft white cultivars developed in the northwestern United States by several traits. Most cultivars from the northwest have demonstrated some resistance to stripe rust and bunt or root rot. Some have a lower vernalization requirement and most have a more oblong or clavate shaped spike. To my knowledge, none are as similar to Houser as Ticonderoga and Yorkwin.

Adaptation to northeastern United States conditions is based on performance records that are summarized in Exhibit 13A and on milling and baking characteristics summarized in Table 1.

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)
Cornell Agricultural Research Station

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*
Cornell University
Ithaca, New York 14853

FOR OFFICIAL USE ONLY
PVPO NUMBER
7900119
VARIETY NAME OR TEMPORARY DESIGNATION
HOUSER

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0|8|9] or [0|9]) when number is either 99 or less or 9 or less.

1. KIND:

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

2. TYPE:

[2] 1 = SPRING 2 = WINTER 3 = OTHER *(Specify)* _____

[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|5|7] FIRST FLOWERING

[2|6|1] LAST FLOWERING

4. MATURITY *(50% Flowering)*:

[ ] NO. OF DAYS *EARLIER* THAN .....

[0|6] NO. OF DAYS *LATER* THAN .....

[ ] 1 = ARTHUR 2 = SCOUT 3 = CHRIS
[1] 4 = LEMHI 5 = NUGAINES 6 = LEEDS

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

[9|0] CM. HIGH

[ ] CM. TALLER THAN .....

[0|3] CM. SHORTER THAN .....

[ ] 1 = ARTHUR 2 = SCOUT 3 = CHRIS
[1] 4 = LEMHI 5 = NUGAINES 6 = LEEDS

6. PLANT COLOR AT BOOTING *(See reverse)*:

[1] 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

[2] Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT

[1] Internodes: 1 = HOLLOW 2 = SOLID

[0|4] NO. OF NODES *(Originating from node above ground)*

[2|2] CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

9. AURICLES:

[1] Anthocyanin: 1 = ABSENT 2 = PRESENT

[2] Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:

[1] 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

[2] Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT

[1|2] MM. LEAF WIDTH *(First leaf below flag leaf)*

[2|0] CM. LEAF LENGTH *(First leaf below flag leaf)*:

OCT 17 1980

11. HEAD:

[3] Density: 1 = LAX 2 = DENSE 3 = middense (11/3/80)

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

[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 6] 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.)*

[4] Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE

[3] Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

[1] 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

[1] 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

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

16. SEED:

[1] 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

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

[0 7] MM. LENGTH

[0 4] MM. WIDTH

[4 6] 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)

[1] STEM RUST *(Races)* _____

[2] LEAF RUST *(Races)* _____

[1] STRIPE RUST *(Races)* _____

[2] LOOSE SMUT

[2] POWDERY MILDEW

[1] BUNT

[ ] OTHER *(Specify)* _____

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

[0] SAWFLY

[0] APHID *(Bydv.)*

[0] GREEN BUG

[0] CEREAL LEAF BEETLE

[ ] OTHER *(Specify)* _____

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

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

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

EXHIBIT 13D.

Houser may be distinguished from Stephens (CI 17596) in the following characteristics:

Stripe Rust - Stephens was consistently rated as highly resistant in the 1978 International Winter Wheat Rust Nursery (IWWRN) and in the 1979 Cooperative Wheat Rust Observation Nurseries (CWRON). In contrast, Houser must be considered susceptible to stripe rust, since it rated in the upper 15% of the nursery in coefficient of infection in both the 1976 and 1977 (IWWRN) and susceptibility was noted at every location tested.

Other Characteristics - Houser has a more tapered spike and wider glumes with narrow but square shoulders. The seed crease of Houser is shallower and narrower. Houser usually shows more stem rust and less leaf rust. Coefficients of infection of leaf rust were consistently higher for Stephens in the 1978 and 1979 CWRON and in the 1978 IWWRN than for Houser in the 1976 and 1977 IWWRN.

Houser may be distinguished from McDermid (CI 14565) in the following characteristics:

Stripe Rust - Although to my knowledge McDermid has never been entered in the rust nurseries, it was resistant to stripe rust when released. In contrast, Houser has never shown any resistance.

Other Characteristics - The spike of Houser is more dense, more tapered, and longer than that of McDermid under New York growing conditions. Glumes of Houser are wide and shoulders are square as contrasted to the wanting to oblique shoulders and narrow to medium glume width of McDermid. Seed of McDermid are more elliptical and narrower than those of Houser. The seed crease of Houser is narrower and shallower.

Additional Characteristics of Houser:

Spike density - 10 rachis internodes = 4.8 cm
Spike length = 8.8 cm
Awns - range from 1 to 8 cm in length
average 6 cm on upper half of spike and are shorter toward base of spike.
Glumes - glabrous
length 9.1 MM
width 4.1 MM
Seed length 7.2 MM
Seed width 4.0 MM

Root system is below average in dry weight compared to other Cornell cultivars, while recovery from winter injury is better than average. Houser is susceptible to pre-harvest sprouting and it appears to have little or no dormancy at physiologic maturity.