200600258

No.

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Cascade International Seed Company

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED 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 TWENTY 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 [illegible]TING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE [illegible]URPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PR[illegible]Y THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

FESCUE, CHEWINGS

'Zodiac'

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 ninth day of April, in the year two thousand and seven.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Sec[illegible] Agric[illegible]

I

REPRODUCE LOCALLY. *Include form number and date on all reproductions*

Form Approved - OMB No. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

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 OWNER: Cascade International Seed Company

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME: 4601, BUR 4601

3. VARIETY NAME: Zodiac

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*: 8483 W. Stayton Rd. Aumsville, OR 97325

5. TELEPHONE *(include area code)*: (503) 749-1822

6. FAX *(include area code)*: (503) 749-1824

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PVPO NUMBER: 200600258
FILING DATE: 8/3/2006

7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.)*: Corporation

8. IF INCORPORATED, GIVE STATE OF INCORPORATION: OR

9. DATE OF INCORPORATION: 1986

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. *(First person listed will receive all papers)*

Steven J. Witten
Radix Research, Inc.
9176 Bates Rd.
Aumsville, OR 97325

FEES RECEIVED
FILING AND EXAMINATION FEES: $ 4,382 DATE 8/3/2006
CERTIFICATION FEE: $ 768.00 DATE 1/4/2007

11. TELEPHONE *(include area code)*: (503) 749-2888

12. FAX *(include area code)*: (503) 749-2800

13. E-MAIL:

14. CROP KIND *(Common Name)*: Chewings fescue

16. FAMILY NAME *(Botanical)*: *Graminae*

15. GENUS AND SPECIES NAME OF CROP: Festuca rubra spp. commutata

17. IS THE VARIETY A FIRST GENERATION HYBRID? ☐ YES ☑ NO

18. DOES THE VARIETY CONTAIN ANY TRANSGENES? (*OPTIONAL*)
☐ YES ☑ NO
IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERICALIZATION. _____

19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)
- a. ☑ Exhibit A. Origin and Breeding History of the Variety
- b. ☑ Exhibit B. Statement of Distinctness
- c. ☑ Exhibit C. Objective Description of Variety
- d. ☑ Exhibit D. Additional Description of the Variety *(Optional)*
- e. ☑ Exhibit E. Statement of the Basis of the Owner's Ownership
- f. ☑ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)*
- g. ☑ Filing and Examination Fee ($3,652), made payable to "Treasurer of the United States" *(Mail to the Plant Variety Protection Office)*

20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act)*
☐ YES *(If "yes", answer items 21 and 22 below)* ☑ NO *(If "no", go to item 23)*

21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES?
☐ YES ☑ NO
IF YES, WHICH CLASSES? [3] FOUNDATION [5] REGISTERED [5] CERTIFIED

22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☑ YES ☐ NO
IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS.
[3] FOUNDATION [5] REGISTERED [5] CERTIFIED
(If additional explanation is necessary, please use the space indicated on the reverse.)

23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES?
☑ YES ☐ NO
IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. *(Please use space indicated on reverse.)*

24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT *(PLANT BREEDER'S RIGHT OR PATENT)*?
☐ YES ☑ NO
IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. *(Please use space indicated on reverse.)*

25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

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

SIGNATURE OF OWNER		SIGNATURE OF OWNER	
Greg Hagen			
NAME *(Please print or type)*		NAME *(Please print or type)*	
Greg Hagen			
CAPACITY OR TITLE	DATE	CAPACITY OR TITLE	DATE
General Manager	7/28/06	General Manager	

(See reverse for instructions and information collection burden statement)

ST-470 (04-03) designed by the Plant Variety Protection Office using Word 2002.

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be received in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to reproduce the variety, or for tuber reproduced varieties verification that a viable *(in the sense that it will reproduce an entire plant)* tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for $3,652 ($432 filing fee and $3,220 examination fee), payable to "Treasurer of the United States" *(See Section 97.6 of the Regulations and Rules of Practice.)* Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfiled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of $432 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office
Telephone: (301) 504-5518
FAX: (301) 504-5291
Homepage: http://www.ams.usda.gov/science/pvpo/pvpindex.htm

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and provide evidence that name has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: Seed Branch, AMS, USDA, 10301 Baltimore Avenue, Suite 401 NAL Building, Beltsville, MD 20705. Telephone: (301) 504-5682 http://www.ams.usda.gov/lsg/seed.htm.

ITEM

19a. 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) evidence of uniformity and stability; and
(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified

19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety 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 are clear differences; and
(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.

19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.

19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, *etc.*

19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.

20. 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 this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. *(See Regulations and Rules of Practice, Section 97.103).*

23. *See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.*

24. *See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.*

22. CONTINUED FROM FRONT *(Please provide a statement as to the limitation and sequence of generations that may be certified.)*

23. CONTINUED FROM FRONT *(Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)*

First date of sale in U.S. - August 2006

24. CONTINUED FROM FRONT *(Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)*

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. *(See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)*

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

Exhibit A revised-8/25/06

Origin and Breeding History of 'Zodiac' (4601) Chewings Fescue

'Zodiac' (4601) Chewings fescue (*Festuca rubra* L. subsp. *commutata* Gaud.) is an advanced generation synthetic cultivar selected from the maternal progenies of 26 clones. 'Zodiac' was developed for

improved seed yield and turf performance, dark bright green color, and freedom from disease. Sixty-one percent of the parental germplasm in 'Zodiac' contain the Neotyphodium endophyte. Twelve plants contained an endophyte referred to as the Cambridge endophyte, which was discovered in plants selected from Longfellow Park in Cambridge, MA. Four plants contained an endophyte referred to as the Delaware endophyte, which was discovered in plants selected from 4 Delaware Drive in East Brunswick, NJ.

Tillers were selected from the better performing turf plots from the 1993 fine fescue trial at North Brunswick in 1998. Ten single-plot progenies were selected from 260 progenies from the 1993 trial. Approximately 1584 plants were tillered from the 1993 trial and established in greenhouse flats. Approximately 50% of the least vigorous plants were rogued prior to the establishment of a spaced plant nursery in the spring of 1998. In the spring of 1999, 26 plants were selected from this nursery for dark bright green color, high seed yield potential, and freedom from disease. The seed from these plants was sent to Cascade International Seed Company in July of 1999. Approximately 2600 plants were established in a spaced-plant nursery near Aumsville Oregon in the fall of 1999. Plants were selected over an 18-month period for increased winter and summer

growth activity, dense crown formation, general freedom from disease, floret fertility and general uniformity within the population. Approximately 60% of the population not exhibiting the selection criteria was rogued prior to final pollination and breeder seed was harvested from this nursery in 2001. 'Zodiac' has produced one additional generation of seed stock increase that was observed to be uniform and stable. No variants or off-types have been observed.

The 26 plants trace to each of the 10 different mother lines selected from the 1993 trial. Forty-six percent of the germplasm used in the development of 'Zodiac' traces to plants related to 'Longfellow' Chewings fescue. Thirty-six percent traces to plants related to 'Banner' Chewings fescue. Four percent traces to plants related to 'Southport' Chewings fescue. The remaining fourteen percent traces to germplasm developed using a germplasm and population improvement program initiated at the New Jersey Agricultural Experiment Station in 1962. The most promising plants used in this program were selected from old lawn-type turfs on the grounds of Fort Mc Henry, Baltimore, MD, Johnson Park in Piscataway, NJ, the College Avenue Campus of Rutgers University, New Brunswick, NJ, the Bridgehampton Golf Course, Bridgehampton, NY, Westview Cemetery in Atlanta, GA, old parks in Philadelphia, PA, Tennant Cemetery, in Tennant, NJ, and a lawn located at 4 Delaware Drive in East Brunswick, NJ.

Although Chewings fescue originated in Europe and performs best in cool-summer climates typical of northwestern Europe and the British Isles, millions of kilograms of seed have been used in turfgrass mixtures throughout the eastern United States. The performance of common types of Chewings fescue has been reasonably good on moderately fertile, moderately acid, well drained soils in the cool-summer parts of

New England and upstate New York, especially under conditions where light shade with adequate air circulation produce a cooling effect. In warmer regions, only a few elite plants have survived in old turfs. Many of these rare, outstanding plants have persisted and spread to produce attractive patches of turf often exceeding one or two meters in diameter. Such patches can be found in old turfs as far south as Atlanta, GA. The origin of these plants is unknown. However, selected plants appeared to be many decades old.

An intensive germplasm collection effort was initiated by Rutgers University in 1962 to select and utilize the best plants surviving in old turfs. Many weeks were spent examining old turfs for attractive, well-adapted plants of Chewings fescue and other useful turfgrasses. Promising plants selected from old turfs were subjected to clonal and progeny evaluation in closely mowed turf trials and spaced-plant nurseries. Of over a thousand Chewings fescue plants collected, only a few dozen were saved for further breeding work. These elite selections were crossed with other promising selections from the germplasm collection program or from current cycles of the breeding program. Progenies from these crosses were included in population improvement programs, which included screening in a greenhouse for improved disease resistance, in spaced-plant nurseries for increased seed yield and uniformity, and in closely mowed turf trials for improved turf performance and increased stress tolerance. The Cambridge endophyte and the Delaware endophyte were introduced into the germplasm base through population backcrossing. Extensive screening for improved disease resistance was conducted under greenhouse conditions as well as in spaced-plant nurseries and closely

200600258

mowed turf trials at North Brunswick, and Adelphia, NJ. 'Zodiac' has been observed to be uniform and stable from 2001 to the present without any evidence of variants or off-types.

200600258

Exhibit B Revised

'Zodiac' (4601) Chewings Fescue

Novelty statement

'Zodiac' (4601) Chewings fescue is a unique cultivar bred and developed at Rutgers University and Cascade International Seed Company. It originates from 26 plants and 10 different mother lines tracing back to the varieties 'Longfellow', 'Banner', and 'Southport'. **'Zodiac'** most closely resembles the variety **'Banner'** in its morphology and phenotypic expression.

The **'Zodiac'** 2-year average morphological comparison to **'Banner'** is as follows:

7) 'Total Plant Height' is 115 mm shorter than Banner (pg. 11)

   * Significant difference at 5% LSD

2) 'Flag Leaf Height' is 86.2 mm shorter than Banner (pg.12)

   * Significant difference at 5% LSD

7) 'Flag Leaf Length' is 41.2 mm shorter than Banner (pg.13)

   * Significant difference at 5% LSD

8) 'Flag Leaf Width' is similar (pg. 14)

5) 'Panicle Length' is 20.2 mm shorter than Banner (pg. 15)

   * Significant difference at 5% LSD

6) **'Zodiac'** has the same 'Heading'date, and is 1 day later to 'anthesis'.

Other supporting evidence of distinctness includes:

7) Panicle shape: Narrow-tapering for 'Zodiac' vs. Oblong for 'Banner' (pg.9)

8) Glume color: Bluish green for 'Zodiac' vs. Purple for 'Banner' (pg.9)

REPRODUCE LOCALLY. Include form number and date on all reproductions. Form Approved OMB NO 0581-0055

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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

Exhibit C

200600258

OBJECTIVE DESCRIPTION OF VARIETY
Fine Leaved Fescues (*Festuca* spp.)

NAME OF APPLICANT (S)	TEMPORARY OR EXPERIMENTAL DESIGNATION	VARIETY NAME
Cascade International Seed Company	4601, BUR 4601 (Until 12/12/2006)	Zodiac

ADDRESS (Street and No. or RD No., City, State, Zip Code and Country)
8483 West Stayton Rd.
Aumsville, Oregon 97325

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PVPO NUMBER 200600258

PLEASE READ ALL INSTRUCTIONS CAREFULLY:

Place the appropriate number that describes the varietal character of this variety in the boxes below. Use leading zeroes when necessary (e.g., [0][8][9] or [0][9]). Characteristics described including numerical measurements, should represent those that are typical for the variety. Measured data should be for SPACE PLANTS. Royal Horticultural Society or any recognized color fan may be used to determine plant colors; designate system used: _____.

Describe location of test area, conditions and number of plants used: _____.

1. SPECIES: (With comparison varieties for use below – use varieties within species of application variety)

[1]

1 = *F. rubra* spp. *commutata* (Chewings)	11 = Cascade 14 = Banner	12 = Highlight 15 = Barfalla	13 = Jamestown
2 = *F. rubra* spp. *litoralis* (Creeping Red)	21 = Dawson 24 = Pennlawn	22 = Starlight	23 = Merlin
3 = *F. rubra* spp. *rubra* (Spreading Red)	31 = Boreal 34 = Ensylva	32 = Ruby	33 = Fortress
4 = *F. ovina* (Sheep)	41 = Covar		
5 = *F. longifolia* (Hard)	51 = Durar	52 = Biljart (C-26)	53 = Scaldis
6 = *F. tenuifolia* (Fine-Leaved Sheep)	61 = Panda	62 = Barok	

7 = Other (Specify) *F.* _____

2. CYTOLOGY:

[4][2] Chromosome Number [3] Ploidy 1 = diploid 2 = tetraploid 3 = hexaploid 4 = octoploid

3. ADAPTATION: (0 = Not Tested, 1 = Not Adapted, 2 = Adapted)

[2] Northeast [0] Southeast [2] North Central [2] Pacific Northwest [2] Other (Specify) Transition Region

4. MATURITY: Date First Headed (Panicle Emergence) Location(s) of Trail(s) Radix Research -Peoria Farm - Corvallis, OR

[3] Maturity Class:

1 = Very Early (Covar) 2 = Early (Highlight) 3 = Medium Early (Boreal, Dawson) 4 = Medium Late (Cascade, Ruby)
5 = Late (Jamestown, Agram) 6 = Very Late

Date Headed 4/21/05 and 5/1/06

200600258

4. MATURITY: (continued)

[ ][ ]	Days earlier than	[ ][ ]	Comparison Variety
	Maturity Same as	[ ][ ]	
[0][1]	Days later than	[1][4]	

5. PLANT HEIGHT: (At Maturity; to Top of Panicle; Average of 10 Tallest Culms)

[7][7][8]	mm Height		
[1][2][7]	mm shorter than	[1][4]	Comparison Variety
	Height the same as	[ ][ ]	
[ ][ ][ ]	mm taller than	[ ][ ]	

6. GROWTH HABIT: (Mature)

[2] 1 = Erect (Ruby) 2 = Semi-erect (Highlight) 3 = Prostrate (Silvana)

7. RHIZOMES:

[ ][ ][ ] mm Length [ ][ ] mm Width [ ][ ] mm Internode Length

[1] 1 = Absent (Highlight) 2 = Weakly Creeping (Dawson) 2 = Strongly Creeping (Boreal)
4 = Very Strongly Creeping (Fortress)

8. LEAF BLADE:

[4] Color: 1 = Light Green (Starlight) 2 = Medium Light Green (Highlight) 3 = Medium Dark Green (Ruby, Agram)
4 = Dark Green (Jamestown, Manoir) 5 = Bluegreen (Saphir) 6 = Graygreen (Scaldis)
7 = Other (Specify) _____

[1] Glaucosity (Sowing Year): 1 = Absent (Koket) 2 = Present (Vendome)

[1] Anthocyanin: 1 = Absent 2 = Present

[1] Hairs (Basal): 1 = Absent 2 = Present

[2] Margins: 1 = Smooth 2 = Semi-rough 3 = Rough

[2] Margin folding (closure): 1 = Rolled inward (closed-Highlight) 2 = Flat (open-Jamestown, Engina)

[3] Width class: 1 = Very Fine (Agram, Frida) 2 = Fine (Jamestown, Highlight, Banner, Dawson)
3 = Medium Fine (Fortress, Ruby Scaldis) 4 = Medium Coarse (Engina)

[0][7][7]	mm Length (flag leaf)		
[2][8]	mm Shorter than	[1][4]	Comparison Variety
	Blade length same as	[ ][ ]	
[ ][ ]	mm Longer than	[ ][ ]	
[2].[6][8]	mm Width (flag leaf)		
[ ].[ ][ ]	mm Narrower than	[ ][ ]	Comparison Variety
	Blade width same as	[ ][ ]	
[0].[1][0]	mm Wider than	[1][4]	

9. LEAF SHEATH:

[2] Anthocyanin (seedling): 1 = Absent (Highlight) 2 = Present (Jamestown, Fortress, Marga)

[1] Auricle Hairiness: 1 = Absent 2 = Present

[2] Margins: 1 = Open (Highlight) 2 = Closed (Jamestown)

10. PANICLE: (Mature plant)

[1] Shape: 1 = Narrow-tapering 2 = Ovate 3 = Oblong 4 = Other (Specify) _____

[1] Type: 1 = Open 2 = Intermediate 3 = Compact

[1] Orientation: 1 = Erect 2 = Nodding

[1] Branch Pubescence: 1 = Glabrous 2 = Pubescent

[4] Anther Color:

[3] Glume Color (At 50% flowering): 1 = Yellowish Green 2 = Green 3 = Bluish Green 4 = Purplish 5 = Reddish 6 = Other (Specify) _____

200600258

[1 3 1] mm Length

[1 6] mm Shorter than [1 4]

Panicle length same as [ ] Comparison Variety

[ ] mm Longer than [ ]

11. PALEA:

[1] Hairs (On keels or margins): 1 = Absent (Banner) 2 = Short (Agram, Scaldis, Olds) 3 = Long (Ranier, Fortress, Jamestown)

12. LEMMA: (Mature)

[1] Hairs: 1 = Absent (Jamestown) 2 = Several 3 = Many (Highlight)

[5 .3] mm Lemma Length

[ ] mm Shorter than [ ]

Lemma length same as [ ] Comparison Variety

[0 .5] mm Longer than [1 4]

[0 .9 5] mm Lemma Width

[ ] mm Narrower than [ ]

Lemma width same as [ ] Comparison Variety

[0 .0 3] mm Wider than [1 4]

[2] Awns: 1 = Absent 2 = Present

[1 .8] mm Awn Length

[ ] mm Shorter than [ ]

Awn length same as [1 4] Comparison Variety

[ ] mm Longer than [ ]

13. SEED: (With lemma & palea)

[3] Size Class (g/1000 seed):
1 = < .9g (Billart, Dawson) 2 = .9 – < 1.1g (Jamestown, Highlight)
3 = 1.1 – 1.3g (Fortress, Novorubra) 4 = > 1.3g (Boreal, Golfrood)

[1 ,2 5 0] mm per 1000 seed

(BT: 9/29/06) [0 .0 1 5] mg per 1000 seed less than [1 4]

Seed Weight same as [ ] Comparison Variety

[ ] mg per 1000 seed more than [ ]

10.

14. DISEASE INSECT, AND NEMATODE REACTION: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

2	Melting-out (*Drechslera poae*) (*Helminthosporium vagans*)	0	Stripe Rust (*P. striiformis*)
2	Leaf Spot (*D. siccans*)	0	Leaf Rust (*P. poae-nemoralis*)
0	Net Blotch (*D. dictyoides*)	0	*P. crandallii*
0	Leaf Spot (*Bipolaris sorokiniana*)	0	Pythium Blight (*Pythium ultimum*)
0	Brown Patch (*Rhizoctonia solani*)	2	Red Thread (*Corticuim fusciforme*)
0	Powdery Mildew (*Erysiphe graminis*)	2	Dollar Spot (*Sclerotinia homeocarpa*)
0	Stripe Smut (*Ustilago striiformis*)		Insect _____
0	F. Patch, Pink Snow-mold (*Fusarium nivale*)		Nematode _____
0	Fusarium blight (*F. tricinctum, F. roseum*)	2	Other Summer Patch
0	Gray snow mold (*Typhula idahoensis*)		Other _____
2	Stem rust (*Puccinia graminis*)		Other _____

200600258

15. GIVE VARIETY OR VARIETIES THAT MOST CLOSELY RESEMBLE THE SUBITTED VARIETY: For the following characteristics indicate the Degree of Resemblance by placing the column marked D.R. with one of the following numbers:

1 = Application variety is less than comparison variety 2 = Same as 3 = More than, better, greater, darker, more disease resistant, etc.

CHARACTER	VARIETY	D.R.	CHARACTER	VARIETY	D.R.
Rhizome Length	Banner	2	Growth Habit	Longfellow II	2
Leaf Width	Jamestown	2	Leaf Color	Jamestown	3
Panicle Color	Jamestown	2	Panicle Shape	Jamestown	2
Winter Color	Ambassador	2	Cold Injury	Jamestown	2
Shade Tolerance	Ambassador	2	Heat	Longfellow II	2
Drought	Jamestown	1	Disease*		

* Specify each disease evaluated.

16. ADDITIONAL DESCRIPTION: (Use additional sheets as required)
Describe all characteristics that cannot be adequately described in the form above in Exhibit D. Comparative varieties should be used as may be appropriate, such as for disease. Append all comparative trial and evaluation data, including measured characters, environmental, and disease tests.

STATISTIX FOR WINDOWS

2004 FINE FESCUE PVP TRIAL
VARIABLE TPH: TOTAL PLANT HEIGHT - 2005 & 2006 AVERAGE (MM)

LSD (T) COMPARISON OF MEANS OF TPH BY ID

ID	MEAN TPH	HOMOGENEOUS GROUPS								
Flyer	955.7	A								
Banner	943.8	A								
Jamestown	899.1	..	B							
Koket	890.0	..	B	C						
Boreal	878.5	..	B	C	D					
Shadow	856.9	..	..	C	D	E				
Shademaster	847.9	..	..	..	D	E				
Zodiac (4601)	**828.8**	**..**	**..**	**..**	**..**	**E**	**F**			
Dawson	825.6	..	..	..	..	E	F			
Ensylva	812.3	..	..	..	..	..	F			
Merlin	804.2	..	..	..	..	..	F			
FC3	794.1	..	..	..	..	..	F			
BMXC-S02	755.8	..	..	..	..	..	..	G		
Barcrown	746.5	..	..	..	..	..	..	G		
FR1	697.2	..	..	..	..	..	..	..	H	
FR4	654.5	..	..	..	..	..	..	..	..	I
DW2	635.4	..	..	..	..	..	..	..	..	I

THERE ARE 9 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.

CRITICAL T VALUE	1.962
CRITICAL VALUE FOR COMPARISON (LSD)	34.917
STANDARD ERROR FOR COMPARISON	17.794
REJECTION LEVEL (ALPHA)	0.050

STATISTIX FOR WINDOWS

2004 FINE FESCUE PVP TRIAL
VARIABLE FLH: FLAG LEAF HEIGHT - 2005 & 2006 AVERAGE (MM)

LSD (T) COMPARISON OF MEANS OF FLH BY ID

ID	MEAN FLH	HOMOGENEOUS GROUPS
Banner	409.9	A
Jamestown	409.8	A
Dawson	366.9	.. B
Merlin	358.3	.. B C
Flyer	356.3	.. B C D
Shademaster	341.8	.. .. C D E
Boreal	341.5	.. .. C D E
Shadow	335.6	.. .. C D E
Barcrown	333.3	.. .. .. D E
Koket	332.8	.. .. E
Zodiac (4601)	**323.7**	**.. .. .. .. E**
Ensylva	319.3	.. .. E
FC3	290.2	.. .. F
BMXC-S02	239.6	.. .. G
FR4	228.8	.. .. G H
DW2	210.4	.. .. H I
FR1	194.5	 I

THERE ARE 9 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.

CRITICAL T VALUE	1.962
CRITICAL VALUE FOR COMPARISON (LSD)	23.283
STANDARD ERROR FOR COMPARISON	11.865
REJECTION LEVEL (ALPHA)	0.050

STATISTIX FOR WINDOWS

2004 FINE FESCUE PVP TRIAL
VARIABLE FLL: FLAG LEAF LENGTH - 2005 & 2006 AVERAGE (MM)

LSD (T) COMPARISON OF MEANS OF FLL BY ID

ID	MEAN FLL	HOMOGENEOUS GROUPS										
Boreal	144.4	A										
Banner	139.8	A	B									
Jamestown	130.1	..	B	C								
Flyer	125.4	..	..	C	D							
Ensylva	114.7	..	..	..	D	E						
Shadow	113.0	..	..	..	..	E	F					
Barcrown	111.2	..	..	..	..	E	F	G				
Shademaster	108.4	..	..	..	..	E	F	G	H			
FR4	101.9	..	..	..	..	..	F	G	H	I		
Koket	101.1	..	..	..	..	..	F	G	H	I		
Merlin	100.0	..	..	..	..	..	..	G	H	I		
BMXC-S02	99.0	..	..	..	..	..	..	..	H	I	J	
Zodiac (4601)	**98.6**	**..**	**..**	**..**	**..**	**..**	**..**	**..**	**H**	**I**	**J**	
DW2	96.7	..	..	..	..	..	..	..	H	I	J	
Dawson	91.2	..	..	..	..	..	..	..	..	I	J	K
FR1	87.6	..	..	..	..	..	..	..	..	..	J	K
FC3	84.4	..	..	..	..	..	..	..	..	..	..	K

THERE ARE 11 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.

CRITICAL T VALUE	1.962
CRITICAL VALUE FOR COMPARISON (LSD)	12.096
STANDARD ERROR FOR COMPARISON	6.1640
REJECTION LEVEL (ALPHA)	0.050

STATISTIX FOR WINDOWS

2004 FINE FESCUE PVP TRIAL
VARIABLE FLW: FLAG LEAF WIDTH - 2005 & 2006 AVERAGE (MM)

LSD (T) COMPARISON OF MEANS OF FLW BY ID

ID	MEAN FLW	HOMOGENEOUS GROUPS						
Boreal	3.94	A						
FR1	3.93	A	B					
BMXC-S02	3.71	..	B	C				
FR4	3.66	..	..	C				
Flyer	3.63	..	..	C	D			
Ensylva	3.51	..	..	C	D			
DW2	3.41	..	..	..	D			
Shademaster	3.41	..	..	..	D			
Shadow	2.96	..	..	..	..	E		
FC3	2.90	..	..	..	..	E		
Jamestown	2.85	..	..	..	..	E		
Merlin	2.84	..	..	..	..	E	F	
Dawson	2.80	..	..	..	..	E	F	G
Banner	2.78	..	..	..	..	E	F	G
Zodiac (4601)	**2.73**	**..**	**..**	**..**	**..**	**E**	**F**	**G**
Barcrown	2.62	..	..	..	..	..	F	G
Koket	2.58	..	..	..	..	..	..	G

THERE ARE 7 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.

CRITICAL T VALUE	1.962
CRITICAL VALUE FOR COMPARISON (LSD)	0.2327
STANDARD ERROR FOR COMPARISON	0.1186
REJECTION LEVEL (ALPHA)	0.050

STATISTIX FOR WINDOWS

2004 FINE FESCUE PVP TRIAL
VARIABLE PL: PANICLE LENGTH - 2005 & 2006 AVERAGE (MM)

LSD (T) COMPARISON OF MEANS OF PL BY ID

ID	MEAN PL	HOMOGENEOUS GROUPS							
Boreal	166.8	A							
Flyer	161.6	A	B						
Ensylva	155.4	..	B	C					
Jamestown	153.4	..	..	C	D				
Banner	152.4	..	..	C	D				
Shademaster	151.5	..	..	C	D				
Koket	146.1	..	..	..	D	E			
Shadow	146.0	..	..	..	D	E			
Dawson	139.7	..	..	..	..	E	F		
Zodiac (4601)	**132.2**	**..**	**..**	**..**	**..**	**..**	**F**	**G**	
FR1	125.2	..	..	..	..	..	..	G	H
FR4	121.8	..	..	..	..	..	..	..	H
DW2	121.2	..	..	..	..	..	..	..	H
FC3	119.0	..	..	..	..	..	..	..	H
BMXC-S02	119.0	..	..	..	..	..	..	..	H
Merlin	117.9	..	..	..	..	..	..	..	H
Barcrown	117.9	..	..	..	..	..	..	..	H

THERE ARE 8 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.

CRITICAL T VALUE	1.962
CRITICAL VALUE FOR COMPARISON (LSD)	7.7952
STANDARD ERROR FOR COMPARISON	3.9724
REJECTION LEVEL (ALPHA)	0.050

200600258

TABLE 1A. (CONT'D) MEAN TURFGRASS QUALITY RATINGS OF FINELEAF FESCUE CULTIVARS GROWN AT EIGHT LOCATIONS IN THE NORTHEAST REGION 1/
2004 DATA
TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF 2/

NAME	MA1	ME1	NJ1	NJ2	NY1	PA1	QE1	RI1	MEAN
* PATHFINDER	5.3	6.4	4.5	4.5	6.5	5.6	5.7	5.4	5.5
* AUDUBON	5.0	7.0	4.4	4.5	6.1	5.0	6.1	5.5	5.4
* QUATRO	4.5	7.3	3.8	4.8	6.4	5.4	5.1	5.9	5.4
* SCALDIS	4.0	7.3	2.9	4.2	6.0	6.8	6.1	5.5	5.3
C03-4676	5.2	5.7	4.3	4.2	6.0	5.4	6.2	5.2	5.3
* SHADEMASTER	4.4	5.8	2.7	3.2	6.1	4.5	5.9	5.1	4.7
* DAWSON E	5.0	4.8	3.5	4.1	6.4	5.1	5.0	3.6	4.7
* ORACLE	4.5	5.7	2.5	3.2	6.3	4.2	5.3	4.7	4.5
* BOREAL	4.2	5.5	2.1	3.1	5.9	3.9	5.6	5.1	4.4
LSD VALUE	0.6	1.0	0.8	0.7	0.4	0.8	0.5	1.0	0.3
C.V. (%)	6.4	8.6	9.4	8.9	4.3	8.8	5.0	11.1	8.0

TABLE 1B. MEAN TURFGRASS QUALITY RATINGS OF CHEWINGS FESCUE CULTIVARS GROWN AT EIGHT LOCATIONS IN THE NORTHEAST REGION 1/
2004 DATA
TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF 2/

NAME	MA1	ME1	NJ1	NJ2	NY1	PA1	QE1	RI1	MEAN
SRX 51G	5.9	7.3	6.9	6.5	6.2	6.3	6.5	6.3	6.5
PST-4TZ	6.3	7.3	6.2	5.3	6.8	6.4	6.3	6.4	6.4
ZODIAC (BUR 4601)	6.1	7.6	6.6	5.5	5.9	6.2	6.6	6.6	6.4
IS-FRC 17	5.5	7.5	6.1	5.6	6.3	5.9	6.5	6.8	6.3
LONGFELLOW II	5.6	7.1	5.6	5.6	6.0	6.2	6.8	5.8	6.1
AMBASSADOR	5.5	7.6	5.1	4.8	6.3	6.3	6.5	6.7	6.1
7 SEAS	5.8	7.3	6.4	5.3	6.4	5.8	6.5	4.9	6.1
DP 77-9886	5.5	7.4	5.4	4.6	6.3	5.9	6.7	6.6	6.1
DP 77-9885	5.7	7.3	6.3	5.0	6.0	5.8	6.3	6.0	6.0
CULUMBRA II (ACF 174)	5.2	7.2	5.0	5.7	6.4	6.1	6.7	6.1	6.0
COMPASS (ACF 188)	5.6	7.0	5.7	5.0	6.2	5.9	6.5	5.9	6.0
CASCADE	5.4	7.2	3.7	3.8	6.2	6.1	6.7	6.6	5.7
J-5 (JAMESTOWN 5)	5.4	6.8	4.5	4.5	6.5	5.4	6.7	5.8	5.7
LSD VALUE	0.5	1.0	0.9	0.6	0.4	0.9	0.4	1.2	0.3
C.V. (%)	5.0	8.7	9.4	7.1	3.7	9.3	3.8	12.2	8.0

* COMMERCIALLY AVAILABLE IN THE USA IN 2005.

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

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TABLE 2A. (CONT'D) MEAN TURFGRASS QUALITY RATINGS OF FINELEAF FESCUE CULTIVARS GROWN AT THREE LOCATIONS IN THE TRANSITION REGION 1/
2004 DATA

TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF 2/

NAME	KS3	MD1	VA1	MEAN
C03-4676	5.5	4.3	5.3	5.0
ASC 245	5.8	4.1	5.1	5.0
RAZOR	5.8	4.2	4.9	5.0
AUDUBON	5.6	4.0	5.3	5.0
IS-FRR 23	5.3	4.3	5.0	4.9
DAWSON E	5.3	4.1	5.0	4.8
SHADEMASTER	5.3	3.6	4.9	4.6
ORACLE	4.9	3.4	4.7	4.3
BOREAL	4.7	2.9	3.9	3.8
LSD VALUE	0.8	0.9	1.2	0.6
C.V. (%)	9.1	11.2	13.3	11.4

TABLE 2B. MEAN TURFGRASS QUALITY RATINGS OF CHEWINGS FESCUE CULTIVARS GROWN AT THREE LOCATIONS IN THE TRANSITION REGION 1/
2004 DATA

TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF 2/

NAME	KS3	MD1	VA1	MEAN
ZODIAC (BUR 4601)	6.3	5.8	6.1	6.1
SRX 51G	6.1	5.6	6.1	5.9
COMPASS (ACF 188)	5.4	5.5	6.4	5.8
AMBASSADOR	5.8	5.2	6.3	5.8
PST-4TZ	5.9	5.7	5.7	5.8
DP 77-9886	5.8	5.4	6.0	5.7
IS-FRC 17	5.3	5.9	5.8	5.7
LONGFELLOW II	5.3	5.8	5.9	5.7
7 SEAS	5.5	5.2	6.3	5.7
J-5 (JAMESTOWN 5)	5.3	5.1	6.1	5.5
CULUMBRA II (ACF 174)	5.3	5.1	6.0	5.5
DP 77-9885	5.4	4.9	6.1	5.5
CASCADE	5.3	4.8	5.9	5.3
LSD VALUE	1.3	0.5	1.2	0.6
C.V. (%)	14.8	5.9	12.8	12.0

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

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TABLE 3A. (CONT'D) MEAN TURFGRASS QUALITY RATINGS OF FINELEAF FESCUE CULTIVARS GROWN AT EIGHT LOCATIONS IN THE NORTH CENTRAL REGION 1/
2004 DATA

TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF 2/

NAME	IA1	IL1	IN1	MI1	MN1	ND1	SD1	WI1	MEAN
SR 3000	6.4	4.0	4.8	6.7	5.9	6.4	5.2	5.8	5.6
COMPASS (ACF 188)	6.6	4.2	6.0	6.9	3.8	5.8	6.3	4.9	5.6
SPM	6.1	3.7	5.0	7.0	4.7	6.1	6.1	5.6	5.5
SEABREEZE	6.6	4.4	5.0	6.2	5.5	5.7	5.3	5.4	5.5
DAWSON E	7.0	4.5	4.6	6.3	4.5	5.6	5.3	5.3	5.4
ORACLE	6.6	4.5	4.1	6.4	4.4	5.8	5.2	5.3	5.3
QUATRO	6.1	3.7	4.3	6.9	4.1	6.4	4.2	6.6	5.3
SHADEMASTER	6.1	4.1	5.0	6.2	3.7	5.8	5.3	4.8	5.1
BOREAL	6.7	4.6	3.9	6.1	4.3	5.8	4.9	4.3	5.1
LSD VALUE	0.9	0.8	1.1	0.4	1.6	0.6	0.5	0.8	0.3
C.V. (%)	8.2	11.7	12.4	3.7	18.0	6.2	5.2	9.0	9.7

TABLE 3B. MEAN TURFGRASS QUALITY RATINGS OF CHEWINGS FESCUE CULTIVARS GROWN AT EIGHT LOCATIONS IN THE NORTH CENTRAL REGION 1/
2004 DATA

TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF 2/

NAME	IA1	IL1	IN1	MI1	MN1	ND1	SD1	WI1	MEAN
ZODIAC (BUR 4601)	6.9	5.5	7.3	7.0	6.9	5.9	6.2	6.4	6.5
PST-4TZ	6.8	4.8	7.1	6.6	5.9	6.2	6.7	7.2	6.4
LONGFELLOW II	7.0	4.9	6.6	7.0	6.2	5.9	6.6	7.1	6.4
IS-FRC 17	6.2	5.1	6.8	7.0	6.2	6.1	6.3	6.8	6.3
SRX 51G	6.3	5.2	7.1	6.7	6.1	5.8	6.2	6.6	6.3
DP 77-9886	6.6	4.8	6.0	6.7	6.4	5.7	5.9	6.6	6.1
CULUMBRA II (ACF 174)	6.0	4.2	6.5	7.0	5.1	6.1	7.4	6.3	6.1
AMBASSADOR	6.5	4.5	6.3	6.7	4.9	6.2	6.7	6.8	6.1
7 SEAS	6.7	5.6	6.5	6.6	5.6	5.9	6.2	5.2	6.0
J-5 (JAMESTOWN 5)	6.4	4.8	6.5	6.3	5.1	5.9	6.4	5.6	5.9
CASCADE	6.7	5.0	5.8	6.6	5.9	5.7	5.7	5.6	5.9
DP 77-9885	6.2	4.3	6.4	6.5	4.4	6.2	6.2	6.3	5.8
COMPASS (ACF 188)	6.6	4.2	6.0	6.9	3.8	5.8	6.3	4.9	5.6
LSD VALUE	0.9	0.9	1.2	0.4	1.8	0.5	0.6	0.8	0.3
C.V. (%)	8.3	11.2	11.3	3.9	20.2	4.8	5.7	7.5	9.9

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

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TABLE 4A. (CONT'D) MEAN TURFGRASS QUALITY RATINGS OF FINELEAF FESCUE CULTIVARS FOR EACH MONTH GROWN AT LOGAN, UT 1/
2000 DATA

TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF: MONTHS 2/

NAME	JUL	SEP	OCT	MEAN
COMPASS (ACF 188)	2.3	6.0	3.7	4.0
SR 3000	3.3	5.3	3.0	3.9
AMBASSADOR	2.7	6.0	3.0	3.9
ASC 245	2.3	5.3	4.0	3.9
IS-FRR 23	4.3	4.0	3.3	3.9
TL1	3.0	5.3	3.3	3.9
SRX 51G	1.7	5.7	4.0	3.8
SRX 55R	2.3	4.7	3.3	3.4
7 SEAS	2.0	4.7	3.0	3.2
LSD VALUE	2.9	1.5	2.0	1.7
C.V. (%)	43.5	17.1	29.8	22.8

TABLE 4B. MEAN TURFGRASS QUALITY RATINGS OF CHEWINGS FESCUE CULTIVARS FOR EACH MONTH GROWN AT LOGAN, UT 1/
2000 DATA

TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF: MONTHS 2/

NAME	JUL	SEP	OCT	MEAN
DP 77-9885	4.7	6.0	5.0	5.2
LONGFELLOW II	4.3	6.0	5.0	5.1
CULUMBRA II (ACF 174)	4.7	6.0	4.0	4.9
J-5 (JAMESTOWN 5)	5.3	5.0	4.3	4.9
CASCADE	4.0	5.3	5.0	4.8
PST-4TZ	4.0	6.3	4.0	4.8
ZODIAC (BUR 4601)	4.7	5.7	4.0	4.8
DP 77-9886	4.0	5.7	4.0	4.6
IS-FRC 17	4.0	5.7	4.0	4.6
COMPASS (ACF 188)	2.3	6.0	3.7	4.0
AMBASSADOR	2.7	6.0	3.0	3.9
SRX 51G	1.7	5.7	4.0	3.8
7 SEAS	2.0	4.7	3.0	3.2
LSD VALUE	2.9	1.4	2.2	1.8
C.V. (%)	48.7	14.9	33.8	24.3

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

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TABLE 5A. (CONT'D) MEAN TURFGRASS QUALITY RATINGS OF FINELEAF FESCUE CULTIVARS GROWN AT TWO LOCATIONS IN THE PACIFIC REGION 1/
2004 DATA

TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF 2/

NAME	CA8	WA3	MEAN
ASC 245	6.2	4.8	5.5
SHADEMASTER	6.7	4.2	5.5
DP 77-9360	6.1	4.8	5.4
ORACLE	6.5	4.3	5.4
SR 3000	6.2	4.6	5.4
AUDUBON	6.7	3.9	5.3
QUATRO	5.7	4.8	5.2
IS-FL 28	5.2	4.9	5.1
SCALDIS	5.3	4.3	4.8
LSD VALUE	1.4	0.5	0.8
C.V. (%)	12.7	7.1	11.3

TABLE 5B. MEAN TURFGRASS QUALITY RATINGS OF CHEWINGS FESCUE CULTIVARS GROWN AT TWO LOCATIONS IN THE PACIFIC REGION 1/
2004 DATA

TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF 2/

NAME	CA8	WA3	MEAN
AMBASSADOR	7.3	5.5	6.4
SRX 51G	7.3	5.3	6.3
COMPASS (ACF 188)	7.6	5.0	6.3
IS-FRC 17	7.5	5.0	6.3
PST-4TZ	6.8	5.7	6.3
DP 77-9886	6.9	5.5	6.2
DP 77-9885	7.6	4.7	6.2
ZODIAC (BUR 4601)	6.7	5.5	6.1
7 SEAS	7.0	5.1	6.0
CULUMBRA II (ACF 174)	6.9	5.1	6.0
J-5 (JAMESTOWN 5)	7.3	4.6	5.9
LONGFELLOW II	6.9	4.9	5.9
CASCADE	7.0	4.7	5.8
LSD VALUE	1.0	0.6	0.6
C.V. (%)	8.9	7.7	8.6

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

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TABLE 6A. (CONT'D) MEAN TURFGRASS QUALITY RATINGS OF FINELEAF FESCUE CULTIVARS GROWN AT TWO LOCATIONS UNDER NON-MOWED CONDITIONS 1/
2004 DATA

TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF 2/

NAME	CA9	KY1	MEAN
CELESTIAL	6.9	6.5	6.7
AUDUBON	7.3	6.0	6.7
ASC 245	6.2	6.6	6.4
IS-FL 28	5.6	6.8	6.2
BERKSHIRE	5.7	6.5	6.1
QUATRO	5.3	6.9	6.1
PREDATOR	5.8	6.2	6.0
SPM	5.2	6.4	5.8
SCALDIS	4.8	6.7	5.7
LSD VALUE	1.4	0.8	0.8
C.V. (%)	12.4	6.7	9.9

TABLE 6B. MEAN TURFGRASS QUALITY RATINGS OF CHEWINGS FESCUE CULTIVARS GROWN AT TWO LOCATIONS UNDER NON-MOWED CONDITIONS 1/
2004 DATA

TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF 2/

NAME	CA9	KY1	MEAN
LONGFELLOW II	7.6	7.7	7.6
CULUMBRA II (ACF 174)	7.7	7.3	7.5
IS-FRC 17	7.4	7.4	7.4
CASCADE	7.1	7.7	7.4
7 SEAS	7.9	6.7	7.3
ZODIAC (BUR 4601)	6.9	7.7	7.3
AMBASSADOR	7.0	7.5	7.3
DP 77-9885	6.8	7.7	7.2
SRX 51G	7.2	7.2	7.2
DP 77-9886	6.7	7.6	7.1
PST-4TZ	6.9	7.1	7.0
COMPASS (ACF 188)	7.5	6.3	6.9
J-5 (JAMESTOWN 5)	7.1	6.5	6.8
LSD VALUE	1.3	0.8	0.8
C.V. (%)	11.6	6.7	9.5

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

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TABLE 7A. (CONT'D) MEAN TURFGRASS QUALITY RATINGS OF FINELEAF FESCUE CULTIVARS GROWN AT THREE LOCATIONS UNDER SHADE 1/
2004 DATA

TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF 2/

NAME	IL2	NE1	UT1	MEAN
SRX 3K	5.8	4.8	4.3	5.0
PATHFINDER	5.1	5.7	4.1	5.0
7 SEAS	5.6	5.9	3.2	4.9
SEABREEZE	4.4	5.6	4.7	4.9
COMPASS (ACF 188)	5.2	5.4	4.0	4.9
DP 77-9360	5.5	4.8	4.3	4.9
IS-FRR 23	5.1	5.5	3.9	4.8
DAWSON E	4.8	5.0	4.6	4.8
SRX 55R	4.8	5.9	3.4	4.7
LSD VALUE	1.1	0.6	1.7	0.7
C.V. (%)	12.1	6.7	22.8	14.1

TABLE 7B. MEAN TURFGRASS QUALITY RATINGS OF CHEWINGS FESCUE CULTIVARS GROWN AT THREE LOCATIONS UNDER SHADE 1/
2004 DATA

TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF 2/

NAME	IL2	NE1	UT1	MEAN
PST-4TZ	6.1	6.7	4.8	5.9
LONGFELLOW II	5.8	6.7	5.1	5.9
J-5 (JAMESTOWN 5)	6.1	6.2	4.9	5.7
DP 77-9885	5.7	6.2	5.2	5.7
DP 77-9886	6.7	5.8	4.6	5.7
CASCADE	5.9	6.3	4.8	5.7
CULUMBRA II (ACF 174)	5.9	6.0	4.9	5.6
IS-FRC 17	5.9	5.8	4.6	5.4
SRX 51G	5.3	7.0	3.8	5.4
AMBASSADOR	6.1	5.9	3.9	5.3
ZODIAC (BUR 4601)	5.3	5.5	4.8	5.2
7 SEAS	5.6	5.9	3.2	4.9
COMPASS (ACF 188)	5.2	5.4	4.0	4.9
LSD VALUE	1.1	0.6	1.8	0.7
C.V. (%)	11.6	6.4	24.3	14.1

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

TABLE 8A. (CONT'D)

GENETIC COLOR RATINGS OF FINELEAF FESCUE CULTIVARS 1/
2004 DATA

GENETIC COLOR RATINGS 1-9; 9=DARK GREEN 2/

NAME	IA1	IL1	IL2	IN1	KY1	MA1	ME1	MN1	ND1	NE1	NJ1	NJ2	PA1	QE1	SD1	UT1	VA1	WA3	WI1	MEAN
DLF-RCM	7.3	5.0	5.0	6.3	6.3	5.7	7.0	5.0	7.7	7.0	5.0	3.7	5.0	7.0	5.3	5.3	6.7	4.3	7.0	5.9
CASCADE	7.7	4.7	7.0	6.0	6.3	6.3	6.7	5.0	6.0	8.0	3.0	4.3	5.0	6.7	5.0	3.7	6.0	4.0	6.7	5.7
SRX 55R	8.0	5.3	2.7	5.0	7.7	6.0	5.3	3.3	7.3	4.0	5.0	4.3	5.7	7.0	6.0	5.7	6.7	5.3	7.0	5.6
DP 77-9886	7.3	5.0	5.3	6.0	7.0	5.7	6.3	5.0	6.3	7.0	4.3	4.3	4.3	6.0	5.3	5.3	6.0	4.3	5.3	5.6
SEABREEZE	7.0	6.0	3.7	4.3	6.3	5.7	7.0	4.0	6.3	5.7	3.3	4.0	5.3	7.0	6.0	4.7	5.3	5.7	6.7	5.5
SHADEMASTER	7.0	5.0	4.3	4.0	5.7	6.0	6.7	4.0	7.7	6.3	2.3	5.0	5.0	7.0	4.7	5.7	5.3	4.0	7.3	5.4
DAWSON E	7.0	5.3	2.3	3.7	5.7	5.7	5.7	3.3	5.7	8.0	3.0	3.3	4.0	6.3	5.7	5.0	6.0	5.0	6.0	5.1
ORACLE	6.7	4.7	1.3	5.3	6.7	5.0	5.0	3.3	7.3	7.0	2.7	4.0	4.0	6.0	4.7	4.3	5.7	4.0	6.3	4.9
BOREAL	7.0	4.3	1.3	5.0	6.3	5.7	4.7	3.0	7.0	6.7	3.0	3.3	4.7	6.3	4.3	3.3	6.0	4.0	5.7	4.8
LSD VALUE	0.7	1.2	2.0	1.4	1.3	1.0	1.5	1.7	1.4	1.1	2.4	1.4	1.0	0.8	0.9	1.7	1.1	1.5	1.0	0.3
C.V. (%)	6.1	12.7	19.1	12.9	11.2	10.0	13.4	19.3	12.4	9.4	27.4	16.7	10.2	6.5	9.1	18.5	10.2	19.2	9.0	13.6

TABLE 8B.

GENETIC COLOR RATINGS OF CHEWINGS FESCUE CULTIVARS 1/
2004 DATA

GENETIC COLOR RATINGS 1-9; 9=DARK GREEN 2/

NAME	IA1	IL1	IL2	IN1	KY1	MA1	ME1	MN1	ND1	NE1	NJ1	NJ2	PA1	QE1	SD1	UT1	VA1	WA3	WI1	MEAN
CULUMBRA II (ACF 174)	7.7	6.7	8.0	8.0	8.0	6.0	7.7	7.0	7.3	7.7	7.0	6.3	7.3	8.0	7.3	6.0	8.3	4.3	7.7	7.2
COMPASS (ACF 188)	8.3	5.3	9.0	8.0	8.3	7.3	8.0	7.0	7.7	7.0	4.3	4.7	7.0	8.0	7.3	6.7	8.0	4.7	8.0	7.1
AMBASSADOR	8.0	6.7	8.7	7.3	7.7	7.0	7.7	6.0	6.3	7.3	7.0	5.3	6.3	7.3	6.3	6.3	7.0	5.7	7.3	6.9
DP 77-9885	8.3	5.3	7.7	7.7	8.3	7.3	8.3	7.3	7.3	7.7	4.7	5.3	7.7	7.3	5.7	6.0	7.3	4.0	7.7	6.9
7 SEAS	7.7	6.0	5.7	7.0	8.7	7.3	8.0	7.3	6.0	6.7	6.0	5.3	6.7	7.3	6.0	6.0	7.3	5.0	7.7	6.7
LONGFELLOW II	7.7	6.3	7.0	7.3	8.0	6.7	7.0	6.3	7.3	7.7	6.0	6.0	5.3	7.0	6.0	5.3	7.0	5.7	6.7	6.6
J-5 (JAMESTOWN 5)	7.7	6.0	7.7	7.0	8.3	6.3	7.7	7.3	8.0	7.0	5.0	5.0	6.0	7.7	5.0	5.0	7.3	4.0	7.7	6.6
SRX 51G	7.7	5.7	7.7	8.0	7.3	6.7	7.0	6.3	6.3	7.7	7.0	6.3	5.3	6.7	6.3	6.0	6.7	4.3	6.7	6.6
ZODIAC (BUR 4601)	7.7	6.0	7.0	7.7	6.7	6.7	6.7	6.3	6.3	7.3	8.3	4.7	5.0	7.0	6.0	6.3	6.0	4.3	6.7	6.5
IS-FRC 17	8.0	5.3	7.0	7.3	7.0	6.7	7.3	5.7	7.3	3.0	6.0	5.3	6.3	7.0	6.0	6.3	6.7	4.0	7.7	6.3
PST-4TZ	7.3	5.7	5.7	7.3	8.3	6.0	6.7	5.7	6.0	7.3	6.7	4.0	4.7	6.7	5.7	6.3	5.3	4.7	6.0	6.1
CASCADE	7.7	4.7	7.0	6.0	6.3	6.3	6.7	5.0	6.0	8.0	3.0	4.3	5.0	6.7	5.0	3.7	6.0	4.0	6.7	5.7
DP 77-9886	7.3	5.0	5.3	6.0	7.0	5.7	6.3	5.0	6.3	7.0	4.3	4.3	4.3	6.0	5.3	5.3	6.0	4.3	5.3	5.6
LSD VALUE	0.9	1.4	1.8	1.3	1.2	0.8	1.7	1.4	1.5	1.2	2.1	1.3	1.2	0.7	0.7	1.6	1.1	1.2	0.9	0.3
C.V. (%)	6.8	15.3	15.6	10.8	9.5	7.7	14.7	13.6	13.5	10.9	22.3	16.2	12.4	5.9	7.1	17.0	10.2	15.8	7.5	12.6

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

TABLE 9A. (CONT'D) SPRING GREENUP RATINGS OF FINELEAF FESCUE CULTIVARS 1/
2004 DATA

SPRING GREENUP RATINGS 1-9; 9=COMPLETELY GREEN 2/

NAME	IA1	IL1	IN1	MI1	ND1	NE1	WA3	MEAN
DP 77-9360	8.7	5.7	6.7	6.7	3.7	5.3	3.7	5.8
BOREAL	8.7	6.0	5.7	5.7	4.7	5.7	3.7	5.7
QUATRO	9.0	4.0	6.0	6.0	5.3	6.0	3.7	5.7
SRX 3K	9.0	4.7	7.0	6.3	4.7	4.0	4.0	5.7
SHADEMASTER	8.3	5.3	5.7	6.0	4.7	6.0	3.3	5.6
SRX 55R	9.0	4.7	5.3	6.0	4.0	5.7	3.7	5.5
SEABREEZE	9.0	4.7	5.7	6.0	4.7	5.0	3.0	5.4
SPM	9.0	4.3	6.3	6.0	4.7	4.7	2.7	5.4
DAWSON E	9.0	3.7	5.7	5.7	4.3	5.0	3.7	5.3
LSD VALUE	0.5	1.3	0.9	0.8	1.0	0.9	1.1	0.4
C.V. (%)	3.2	15.1	8.4	7.5	13.4	9.5	18.2	10.0

TABLE 9B. SPRING GREENUP RATINGS OF CHEWINGS FESCUE CULTIVARS 1/
2004 DATA

SPRING GREENUP RATINGS 1-9; 9=COMPLETELY GREEN 2/

NAME	IA1	IL1	IN1	MI1	ND1	NE1	WA3	MEAN
SRX 51G	8.7	6.0	8.0	6.3	4.7	6.7	5.0	6.5
7 SEAS	9.0	5.7	7.7	6.3	5.0	7.0	4.3	6.4
PST-4TZ	8.7	5.7	7.7	6.0	5.0	7.0	4.7	6.4
COMPASS (ACF 188)	9.0	5.7	8.0	7.0	4.0	6.7	4.0	6.3
IS-FRC 17	8.7	6.3	7.7	6.7	5.0	5.3	4.7	6.3
LONGFELLOW II	9.0	6.0	8.0	7.0	4.3	5.7	4.3	6.3
J-5 (JAMESTOWN 5)	9.0	6.0	7.3	7.0	4.3	6.7	4.0	6.3
AMBASSADOR	9.0	5.0	8.0	7.0	4.7	4.3	5.3	6.2
ZODIAC (BUR 4601)	9.0	5.7	7.3	6.7	4.7	5.0	5.0	6.2
CULUMBRA II (ACF 174)	9.0	5.3	8.0	7.0	4.3	4.7	4.7	6.1
CASCADE	9.0	6.0	6.7	6.0	4.0	6.7	3.7	6.0
DP 77-9886	9.0	6.0	6.3	6.0	4.7	5.3	4.7	6.0
DP 77-9885	9.0	6.7	7.7	6.3	4.3	3.7	4.0	6.0
LSD VALUE	0.4	1.1	0.7	0.6	1.2	0.8	1.4	0.4
C.V. (%)	3.1	11.9	6.0	5.5	15.8	8.8	19.2	9.4

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

TABLE 10A. LEAF TEXTURE RATINGS OF FINELEAF FESCUE CULTIVARS 1/
(CONT'D) 2004 DATA

LEAF TEXTURE RATINGS 1-9; 9=VERY FINE 2/

NAME	MI1	MN1	ND1	NY1	QE1	MEAN
IS-FRR 30	6.3	6.0	8.7	7.7	6.0	6.9
DLF-RCM	6.3	6.0	8.7	7.3	6.3	6.9
DP 77-9579	6.0	6.0	8.7	7.3	6.7	6.9
SHADEMASTER	6.0	6.5	8.3	7.0	6.7	6.9
BMXC-S02	6.3	6.0	8.7	7.0	6.3	6.9
EDGEWOOD (CO3-RCE)	6.0	6.7	8.0	7.0	6.7	6.9
AUDUBON	6.0	6.3	9.0	7.0	6.0	6.9
ORACLE	6.0	6.3	8.0	7.3	6.0	6.7
LSD VALUE	0.7	1.1	0.6	0.8	0.6	0.4
C.V. (%)	6.7	10.0	4.2	6.7	5.6	6.7

TABLE 10B. LEAF TEXTURE RATINGS OF CHEWINGS FESCUE CULTIVARS 1/
2004 DATA

LEAF TEXTURE RATINGS 1-9; 9=VERY FINE 2/

NAME	MI1	MN1	ND1	NY1	QE1	MEAN
DP 77-9886	7.3	7.3	9.0	7.7	7.7	7.8
ZODIAC (BUR 4601)	7.0	7.7	9.0	7.3	8.0	7.8
CASCADE	7.0	7.7	8.3	7.7	8.0	7.7
LONGFELLOW II	7.3	6.7	8.7	8.0	8.0	7.7
7 SEAS	7.3	7.3	9.0	7.3	7.0	7.6
DP 77-9885	7.3	7.3	9.0	7.3	7.0	7.6
IS-FRC 17	7.7	6.7	9.0	7.7	7.0	7.6
PST-4TZ	7.0	7.0	9.0	7.3	7.3	7.5
AMBASSADOR	7.0	7.0	9.0	7.0	7.3	7.5
COMPASS (ACF 188)	7.7	7.0	8.7	7.3	6.7	7.5
CULUMBRA II (ACF 174)	7.0	7.3	8.7	7.3	7.0	7.5
J-5 (JAMESTOWN 5)	7.3	6.7	9.0	7.3	7.0	7.5
SRX 51G	7.0	7.0	9.0	7.3	7.0	7.5
LSD VALUE	0.7	0.9	0.5	0.9	0.5	0.3
C.V. (%)	5.9	7.9	3.6	7.1	4.4	5.8

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

TABLE 11A. (CONT'D) SEEDLING VIGOR RATINGS OF FINELEAF FESCUE CULTIVARS 1/
2004 DATA

SEEDLING VIGOR RATINGS 1-9; 9=MAXIMUM VIGOR 2/

NAME	IL2	KY1	MA1	MD1	MI1	ND1	NJ1	NY1	PA1	QE1	MEAN
SEABREEZE	5.0	6.0	6.7	6.3	6.3	7.0	3.0	5.0	5.0	4.0	5.4
QUATRO	6.3	6.3	5.3	4.3	7.0	7.0	3.0	5.3	6.0	3.3	5.4
SR 3000	6.0	7.3	5.3	5.7	6.7	7.0	2.3	5.7	3.0	4.3	5.3
SRX 3K	4.7	7.3	5.3	4.0	6.7	6.3	3.3	4.7	6.0	4.7	5.3
COMPASS (ACF 188)	4.7	6.0	6.7	7.0	6.7	5.0	3.3	4.7	4.0	4.7	5.3
DAWSON E	3.0	6.0	5.7	7.7	6.3	5.3	3.3	4.7	5.3	4.0	5.1
SCALDIS	4.0	7.7	3.7	3.7	7.0	6.0	3.7	4.7	5.7	4.0	5.0
PREDATOR	3.0	5.0	4.3	3.3	6.3	7.3	3.0	6.0	5.3	4.0	4.8
SPM	4.7	5.7	3.3	2.7	6.7	6.7	2.3	5.7	5.0	4.3	4.7
LSD VALUE	3.1	1.3	2.5	1.6	0.9	1.5	1.8	1.5	1.2	1.1	0.6
C.V. (%)	36.0	10.8	24.5	14.7	8.8	14.5	22.5	17.6	12.8	14.3	18.4

TABLE 11B. SEEDLING VIGOR RATINGS OF CHEWINGS FESCUE CULTIVARS 1/
2004 DATA

SEEDLING VIGOR RATINGS 1-9; 9=MAXIMUM VIGOR 2/

NAME	IL2	KY1	MA1	MD1	MI1	ND1	NJ1	NY1	PA1	QE1	MEAN
DP 77-9886	5.0	8.0	8.0	8.3	7.0	5.7	6.0	5.7	7.3	5.3	6.6
CASCADE	6.3	8.3	7.0	7.7	6.7	5.7	5.7	4.7	6.7	5.3	6.4
IS-FRC 17	6.7	8.3	7.0	8.3	7.0	6.0	4.3	4.0	5.7	5.0	6.2
LONGFELLOW II	5.0	7.3	5.7	8.3	7.0	6.7	6.0	5.3	5.3	5.3	6.2
AMBASSADOR	6.0	7.0	7.3	7.3	6.7	5.7	5.3	5.0	6.7	5.0	6.2
DP 77-9885	6.0	6.7	8.3	6.3	7.0	6.3	5.0	5.3	5.3	4.7	6.1
ZODIAC (BUR 4601)	5.3	6.7	6.7	7.3	7.0	5.7	5.7	5.3	6.0	5.0	6.1
J-5 (JAMESTOWN 5)	6.0	8.0	5.0	8.3	6.7	5.7	5.0	5.3	4.7	5.3	6.0
PST-4TZ	5.7	7.3	7.7	7.3	6.3	5.7	3.3	5.0	6.7	4.7	6.0
CULUMBRA II (ACF 174)	6.0	7.7	7.3	6.7	7.0	6.0	4.3	4.7	5.0	4.7	5.9
SRX 51G	6.7	6.7	7.0	7.3	6.3	6.0	3.7	4.7	5.7	4.7	5.9
7 SEAS	6.0	6.7	7.0	6.7	6.3	7.0	4.0	5.3	4.3	4.7	5.8
COMPASS (ACF 188)	4.7	6.0	6.7	7.0	6.7	5.0	3.3	4.7	4.0	4.7	5.3
LSD VALUE	3.2	1.2	2.7	1.4	0.9	1.2	2.2	1.4	1.1	1.2	0.6
C.V. (%)	34.5	10.1	23.6	11.8	8.6	13.0	29.0	17.8	12.4	15.2	18.6

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

2006002 58

TABLE 12A. SPRING DENSITY RATINGS OF FINELEAF FESCUE CULTIVARS 1/
(CONT'D) 2004 DATA

DENSITY RATINGS 1-9; 9=MAXIMUM DENSITY 2/

NAME	MI1	ND1	NE1	WA3	MEAN
7 SEAS	6.7	6.7	5.7	7.3	6.6
DP 77-9579	6.0	7.3	6.7	6.3	6.6
SHADEMASTER	6.7	6.0	7.3	6.3	6.6
CASCADE	6.3	6.3	6.3	7.0	6.5
DP 77-9360	6.3	6.7	6.0	6.3	6.3
DAWSON E	6.7	6.3	5.7	6.3	6.3
PREDATOR	6.3	6.7	5.7	6.3	6.3
SRX 3K	6.0	6.0	6.3	6.7	6.3
SEABREEZE	6.0	6.0	5.7	6.7	6.1
LSD VALUE	1.4	1.5	1.3	1.1	0.7
C.V. (%)	13.3	13.1	11.2	9.6	11.8

TABLE 12B. SPRING DENSITY RATINGS OF CHEWINGS FESCUE CULTIVARS 1/
2004 DATA

DENSITY RATINGS 1-9; 9=MAXIMUM DENSITY 2/

NAME	MI1	ND1	NE1	WA3	MEAN
CULUMBRA II (ACF 174)	7.0	7.7	8.0	7.7	7.6
LONGFELLOW II	7.7	7.0	7.7	8.0	7.6
IS-FRC 17	7.7	7.0	6.7	8.7	7.5
ZODIAC (BUR 4601)	7.3	7.3	7.0	8.0	7.4
J-5 (JAMESTOWN 5)	7.0	7.0	7.7	7.7	7.3
COMPASS (ACF 188)	6.7	7.3	7.3	7.7	7.3
SRX 51G	6.3	6.3	8.3	7.7	7.2
AMBASSADOR	6.7	7.0	6.0	8.7	7.1
DP 77-9886	7.0	6.7	6.7	8.0	7.1
PST-4TZ	6.0	6.7	7.3	8.3	7.1
DP 77-9885	6.3	7.3	7.3	7.3	7.1
7 SEAS	6.7	6.7	5.7	7.3	6.6
CASCADE	6.3	6.3	6.3	7.0	6.5
LSD VALUE	1.2	1.8	1.3	1.2	0.7
C.V. (%)	10.8	16.5	11.3	9.4	12.1

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

2006002 58

TABLE 13A. (CONT'D) SUMMER DENSITY RATINGS OF FINELEAF FESCUE CULTIVARS 1/
2004 DATA

DENSITY RATINGS 1-9; 9=MAXIMUM DENSITY 2/

NAME	ND1	NE1	QE1	MEAN
PREDATOR	5.7	7.3	6.3	6.4
SEABREEZE	6.0	7.0	6.3	6.4
SRX 3K	5.7	7.3	6.3	6.4
PATHFINDER	6.0	7.0	6.0	6.3
QUATRO	5.3	8.0	5.7	6.3
C03-4676	6.3	6.7	5.7	6.2
SR 3000	6.3	6.7	5.7	6.2
DAWSON E	6.3	7.0	5.0	6.1
SHADEMASTER	5.7	7.3	5.3	6.1
LSD VALUE	1.4	0.7	0.9	0.6
C.V. (%)	13.8	6.0	8.3	9.5

TABLE 13B. SUMMER DENSITY RATINGS OF CHEWINGS FESCUE CULTIVARS 1/
2004 DATA

DENSITY RATINGS 1-9; 9=MAXIMUM DENSITY 2/

NAME	ND1	NE1	QE1	MEAN
7 SEAS	7.0	7.7	7.3	7.3
COMPASS (ACF 188)	6.3	8.0	7.3	7.2
CULUMBRA II (ACF 174)	6.3	8.0	7.3	7.2
J-5 (JAMESTOWN 5)	6.7	8.0	6.7	7.1
PST-4TZ	6.0	8.3	7.0	7.1
SRX 51G	6.0	8.3	7.0	7.1
CASCADE	6.0	8.0	7.0	7.0
DP 77-9885	6.3	7.7	7.0	7.0
DP 77-9886	5.7	7.7	7.7	7.0
LONGFELLOW II	6.3	7.7	7.0	7.0
ZODIAC (BUR 4601)	7.0	7.0	7.0	7.0
AMBASSADOR	6.0	7.7	7.0	6.9
IS-FRC 17	5.7	7.7	7.3	6.9
LSD VALUE	1.4	0.7	0.6	0.6
C.V. (%)	13.5	5.8	5.5	8.5

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

2006002 58

30.
200600258
29

TABLE 14A. FALL DENSITY RATINGS OF FINELEAF FESCUE CULTIVARS 1/
(CONT'D) 2004 DATA

DENSITY RATINGS 1-9; 9=MAXIMUM DENSITY 2/

NAME	MI1	ND1	NE1	NJ1	NJ2	QE1	MEAN
TL1	6.0	6.7	8.0	4.7	4.3	6.7	6.1
IS-FRR 29	6.3	7.0	8.7	3.7	4.3	6.0	6.0
SCALDIS	6.0	5.7	7.3	5.3	4.3	7.0	5.9
AUDUBON	6.3	7.3	8.7	3.7	3.3	6.0	5.9
PATHFINDER	6.7	5.7	8.3	3.7	4.7	6.0	5.8
DAWSON E	6.3	5.3	7.3	5.0	5.0	5.3	5.7
SHADEMASTER	6.0	5.7	9.0	3.7	3.3	6.0	5.6
ORACLE	6.3	6.3	8.7	3.7	3.0	5.3	5.6
BOREAL	6.0	6.7	8.3	3.3	2.3	5.3	5.3
LSD VALUE	0.7	1.4	0.7	2.0	1.6	0.8	0.5
C.V. (%)	7.2	13.7	5.0	21.4	18.8	7.6	12.5

TABLE 14B. FALL DENSITY RATINGS OF CHEWINGS FESCUE CULTIVARS 1/
2004 DATA

DENSITY RATINGS 1-9; 9=MAXIMUM DENSITY 2/

NAME	MI1	ND1	NE1	NJ1	NJ2	QE1	MEAN
LONGFELLOW II	7.0	7.0	9.0	7.3	6.3	7.7	7.4
PST-4TZ	7.0	6.3	9.0	8.0	6.3	7.3	7.3
SRX 51G	6.7	6.3	9.0	7.3	6.7	7.7	7.3
ZODIAC (BUR 4601)	7.0	6.7	8.3	7.3	6.7	7.0	7.2
COMPASS (ACF 188)	6.3	6.3	9.0	7.7	5.7	7.3	7.1
DP 77-9885	7.0	6.3	8.7	6.3	5.3	7.7	6.9
IS-FRC 17	7.0	6.7	8.3	5.7	5.7	7.7	6.8
AMBASSADOR	6.7	6.0	8.7	6.3	6.0	7.0	6.8
7 SEAS	6.3	6.3	8.3	6.3	5.3	7.7	6.7
DP 77-9886	6.3	5.7	8.0	6.7	5.0	8.0	6.6
CULUMBRA II (ACF 174)	6.3	5.7	7.7	6.3	5.7	7.3	6.5
J-5 (JAMESTOWN 5)	6.0	6.0	9.0	5.3	4.7	7.3	6.4
CASCADE	6.0	5.3	8.7	5.0	4.7	7.3	6.2
LSD VALUE	0.6	1.4	0.7	2.0	1.3	0.8	0.5
C.V. (%)	6.0	13.7	4.9	18.7	14.1	6.8	11.1

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

200600258

TABLE 15A. (CONT'D) PERCENT LIVING GROUND COVER (SPRING) RATINGS OF FINELEAF FESCUE CULTIVARS 1/
2004 DATA

PERCENT LIVING GROUND COVER IN SPRING: LOCATIONS 2/

NAME	IL1	IL2	IL3	ME1	MI1	MN1	ND1	RI1	UT1	WI1	MEAN
7 SEAS	70.0	67.3	53.3	51.7	70.0	50.0	81.7	46.7	16.7	58.3	56.6
DP 77-9885	61.7	62.3	46.7	61.7	70.0	23.3	80.0	60.0	26.7	73.3	56.6
C03-4676	43.3	66.0	43.3	53.3	70.0	63.3	76.7	50.0	26.7	66.7	55.9
IS-FRR 29	66.7	68.3	43.3	65.0	63.3	28.3	71.7	60.0	20.0	70.0	55.7
DAWSON E	61.7	65.7	51.7	50.0	66.7	53.3	73.3	36.7	26.7	70.0	55.6
ASC 245	61.7	73.3	45.0	46.7	71.7	48.3	73.3	50.0	13.3	63.3	54.7
COMPASS (ACF 188)	58.3	75.0	51.7	56.7	70.0	38.3	63.3	53.3	10.0	60.0	53.7
TL 53	60.0	51.0	50.0	46.7	60.0	36.7	78.3	43.3	33.3	73.3	53.3
LSD VALUE	15.8	17.7	8.6	18.9	14.4	36.1	15.8	11.4	20.1	13.1	5.9
C.V. (%)	16.2	16.0	11.2	19.0	12.7	32.5	12.3	12.1	48.1	11.1	18.8

TABLE 15B. PERCENT LIVING GROUND COVER (SPRING) RATINGS OF CHEWINGS FESCUE CULTIVARS 1/
2004 DATA

PERCENT LIVING GROUND COVER IN SPRING: LOCATIONS 2/

NAME	IL1	IL2	IL3	ME1	MI1	MN1	ND1	RI1	UT1	WI1	MEAN
CASCADE	81.7	74.0	55.0	58.3	73.3	86.7	80.0	70.0	26.7	75.0	68.1
ZODIAC (BUR 4601)	73.3	64.0	46.7	83.3	76.7	81.7	66.7	66.7	36.7	78.3	67.4
DP 77-9886	70.0	72.0	55.0	78.3	73.3	71.7	71.7	66.7	26.7	75.0	66.0
IS-FRC 17	63.3	78.3	53.3	65.0	83.3	61.7	78.3	66.7	26.7	78.3	65.5
LONGFELLOW II	66.7	70.0	50.0	71.7	80.0	70.0	80.0	60.0	23.3	80.0	65.2
PST-4TZ	66.7	76.7	53.3	60.0	66.7	73.3	78.3	66.7	20.0	78.3	64.0
J-5 (JAMESTOWN 5)	66.7	79.0	55.0	65.0	78.3	48.3	80.0	56.7	26.7	70.0	62.6
CULUMBRA II (ACF 174)	71.7	76.3	51.7	65.0	70.0	43.3	80.0	60.0	26.7	73.3	61.8
SRX 51G	61.7	74.3	50.0	65.0	60.0	83.3	70.0	63.3	13.3	71.7	61.3
AMBASSADOR	66.7	66.7	43.3	70.0	70.0	55.0	70.0	73.3	16.7	75.0	60.7
7 SEAS	70.0	67.3	53.3	51.7	70.0	50.0	81.7	46.7	16.7	58.3	56.6
DP 77-9885	61.7	62.3	46.7	61.7	70.0	23.3	80.0	60.0	26.7	73.3	56.6
COMPASS (ACF 188)	58.3	75.0	51.7	56.7	70.0	38.3	63.3	53.3	10.0	60.0	53.7
LSD VALUE	15.4	18.8	9.4	21.3	12.4	42.8	16.1	12.6	19.8	10.5	6.4
C.V. (%)	14.2	16.3	11.4	20.2	10.7	44.0	13.3	12.6	53.9	9.0	20.1

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

2006002 58

32.
200600258

TABLE 16A. PERCENT LIVING GROUND COVER (SUMMER) RATINGS OF FINELEAF FESCUE CULTIVARS 1/
(CONT'D) 2004 DATA

PERCENT LIVING GROUND COVER IN SUMMER: LOCATIONS 2/

NAME	IL2	ME1	ND1	NJ1	RI1	WI1	MEAN
DP 77-9360	79.7	56.7	93.3	74.0	56.7	90.0	75.1
SEABREEZE	88.7	60.0	94.7	64.3	56.7	86.0	75.1
TL 53	90.3	48.3	93.3	82.7	46.7	86.7	74.7
PATHFINDER	92.7	53.3	94.3	63.3	53.3	90.0	74.5
BMXC-S02	91.7	55.0	91.7	67.7	50.0	88.3	74.1
BOREAL	89.3	90.0	91.7	51.7	43.3	78.3	74.1
SHADEMASTER	89.7	63.3	97.3	43.3	55.0	89.0	72.9
DAWSON E	88.7	60.0	91.3	72.7	33.3	89.0	72.5
LSD VALUE	20.0	19.1	6.0	9.1	13.2	6.0	5.5
C.V. (%)	13.7	17.1	3.9	7.4	14.0	4.1	10.5

TABLE 16B. PERCENT LIVING GROUND COVER (SUMMER) RATINGS OF CHEWINGS FESCUE CULTIVARS 1/
2004 DATA

PERCENT LIVING GROUND COVER IN SUMMER: LOCATIONS 2/

NAME	IL2	ME1	ND1	NJ1	RI1	WI1	MEAN
ZODIAC (BUR 4601)	91.7	86.7	98.3	87.3	66.7	92.3	87.2
AMBASSADOR	91.7	78.3	98.3	86.7	73.3	94.0	87.1
IS-FRC 17	93.3	81.7	91.7	83.3	66.7	95.7	85.4
LONGFELLOW II	93.3	78.3	94.3	89.0	60.0	95.7	85.1
PST-4TZ	94.7	73.3	91.3	87.3	66.7	95.7	84.8
DP 77-9886	89.0	78.3	95.7	80.0	66.7	95.0	84.1
SRX 51G	91.0	70.0	96.0	90.0	63.3	92.3	83.8
CULUMBRA II (ACF 174)	93.3	75.0	95.0	78.3	63.3	90.7	82.6
J-5 (JAMESTOWN 5)	94.3	70.0	95.7	79.0	60.0	88.3	81.2
CASCADE	81.7	78.3	89.3	69.0	70.0	91.7	80.0
COMPASS (ACF 188)	97.0	63.3	88.7	80.3	56.7	86.0	78.7
DP 77-9885	75.7	66.7	96.3	82.7	56.7	93.0	78.5
7 SEAS	95.3	56.7	93.3	81.7	43.3	87.7	76.3
LSD VALUE	15.6	18.8	7.8	7.8	13.6	4.7	5.1
C.V. (%)	10.7	15.9	5.1	5.9	13.5	3.2	9.3

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

31
200600258

TABLE 17A. (CONT'D) PERCENT LIVING GROUND COVER (FALL) RATINGS OF FINELEAF FESCUE CULTIVARS 1/
2004 DATA

PERCENT LIVING GROUND COVER IN FALL: LOCATIONS 2/

NAME	IA1	IL1	IL2	IL3	IN1	MA1	MD1	MI1	ND1	SD1	UT1	WA3	WI1	MEAN
SR 3000	90.0	71.7	86.3	75.0	87.7	93.0	99.0	98.0	98.7	92.3	53.3	66.7	90.0	84.7
IS-FL 28	86.7	66.7	82.3	53.3	88.7	85.3	99.0	99.0	97.3	93.3	73.3	80.0	95.0	84.6
COMPASS (ACF 188)	90.0	78.3	77.0	80.0	87.3	97.0	99.0	99.0	94.7	88.3	53.3	63.3	90.7	84.5
BOREAL	93.3	71.7	69.7	76.7	92.3	89.0	87.7	98.3	95.3	88.3	66.7	81.7	85.7	84.3
TL1	90.0	75.0	79.7	83.3	87.7	94.3	98.3	98.3	94.7	88.3	50.0	65.0	88.3	84.1
SPM	85.0	71.7	84.0	76.7	80.0	94.7	92.3	98.7	96.0	88.0	70.0	60.0	93.0	83.8
SCALDIS	90.0	63.3	84.3	76.7	89.3	63.3	99.0	98.3	98.7	92.3	66.7	73.3	93.0	83.7
ASC 245	90.0	78.3	62.7	83.3	80.0	92.7	98.0	98.0	91.7	88.3	56.7	70.0	86.7	82.8
LSD VALUE	5.8	15.7	19.0	10.1	3.7	10.8	3.2	0.7	4.7	5.9	23.3	15.0	4.4	3.2
C.V. (%)	4.0	12.3	14.8	7.7	2.6	7.2	2.0	0.4	3.0	4.0	23.5	12.5	2.9	8.3

TABLE 17B. PERCENT LIVING GROUND COVER (FALL) RATINGS OF CHEWINGS FESCUE CULTIVARS 1/
2004 DATA

PERCENT LIVING GROUND COVER IN FALL: LOCATIONS 2/

NAME	IA1	IL1	IL2	IL3	IN1	MA1	MD1	MI1	ND1	SD1	UT1	WA3	WI1	MEAN
CASCADE	91.7	90.0	79.3	88.3	92.3	97.3	98.0	98.7	95.3	90.0	76.7	88.3	94.0	90.8
LONGFELLOW II	91.7	85.0	88.0	81.7	90.7	97.7	99.0	98.7	97.3	92.3	70.0	76.7	97.0	89.7
IS-FRC 17	88.3	85.0	87.0	81.7	90.0	97.3	99.0	98.7	94.3	93.7	66.3	86.7	96.3	89.6
ZODIAC (BUR 4601)	88.3	88.3	85.0	83.3	92.0	97.3	98.3	99.0	98.3	93.3	60.0	85.0	95.0	89.5
PST-4TZ	90.0	85.0	84.7	86.7	87.0	97.7	99.0	99.0	97.3	95.0	56.7	83.3	98.3	89.2
DP 77-9886	91.7	88.3	86.0	85.0	89.3	98.3	99.0	99.0	98.7	89.0	56.7	80.0	97.7	89.1
J-5 (JAMESTOWN 5)	90.0	86.7	82.3	86.7	90.0	97.7	98.7	97.7	97.3	90.7	70.0	73.3	91.7	88.7
DP 77-9885	86.7	91.7	82.7	81.7	87.0	97.7	97.3	99.0	97.3	92.3	63.3	73.3	95.3	88.1
AMBASSADOR	86.7	80.0	84.3	80.0	89.3	96.7	99.0	98.7	98.7	94.0	60.0	80.0	97.0	88.0
CULUMBRA II (ACF 174)	85.0	73.3	85.3	81.7	88.0	97.7	98.7	98.3	97.3	98.3	63.3	75.0	91.3	86.8
SRX 51G	86.7	88.3	78.3	78.3	88.3	98.0	98.7	99.0	96.0	94.0	46.7	73.3	97.0	86.4
7 SEAS	90.0	83.3	80.7	85.0	88.7	98.7	98.7	99.0	97.3	90.7	43.3	66.7	92.3	85.7
COMPASS (ACF 188)	90.0	78.3	77.0	80.0	87.3	97.0	99.0	99.0	94.7	88.3	53.3	63.3	90.7	84.5
LSD VALUE	5.8	13.7	13.1	9.2	4.1	1.8	0.9	0.6	4.2	6.0	25.1	12.6	4.0	2.8
C.V. (%)	4.0	10.0	9.8	6.9	2.9	1.2	0.6	0.4	2.7	4.1	25.8	10.1	2.6	7.2

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

2006002258

34
200600258

TABLE 18A. WINTER COLOR RATINGS OF FINELEAF FESCUE CULTIVARS 1/
(CONT'D) 2004 DATA

WINTER COLOR RATINGS 1-9; 9=COMPLETE COLOR RETENTION 2/

NAME	KY1	VA1	MEAN
IS-FRR 23	5.0	6.3	5.7
SRX 55R	5.0	6.3	5.7
IS-FRR 29	5.3	5.7	5.5
PATHFINDER	5.0	6.0	5.5
ORACLE	4.3	5.7	5.0
SEABREEZE	4.7	5.0	4.8
SHADEMASTER	4.7	5.0	4.8
BOREAL	4.0	5.3	4.7
DAWSON E	4.0	5.0	4.5
LSD VALUE	1.2	1.4	0.9
C.V. (%)	12.1	13.0	12.6

TABLE 18B. WINTER COLOR RATINGS OF CHEWINGS FESCUE CULTIVARS 1/
2004 DATA

WINTER COLOR RATINGS 1-9; 9=COMPLETE COLOR RETENTION 2/

NAME	KY1	VA1	MEAN
CULUMBRA II (ACF 174)	7.7	7.3	7.5
IS-FRC 17	7.7	7.0	7.3
COMPASS (ACF 188)	7.3	7.3	7.3
7 SEAS	7.3	7.0	7.2
DP 77-9885	8.0	6.3	7.2
LONGFELLOW II	7.7	6.3	7.0
SRX 51G	6.7	7.3	7.0
PST-4TZ	7.0	6.7	6.8
ZODIAC (BUR 4601)	7.3	6.3	6.8
AMBASSADOR	6.7	6.3	6.5
CASCADE	6.3	6.3	6.3
J-5 (JAMESTOWN 5)	6.3	6.3	6.3
DP 77-9886	6.3	5.7	6.0
LSD VALUE	1.2	1.5	0.9
C.V. (%)	10.1	13.6	11.9

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

33
200600258

200600258

TABLE 19A. (CONT'D) MELTING-OUT (SPRING) RATINGS OF FINELEAF FESCUE CULTIVARS 1/
2004 DATA

MELTING-OUT RATINGS 1-9; 9=NO DISEASE 2/

NAME	SD1
RELIANT IV (A01630REL)	5.0
BERKSHIRE	4.7
OXFORD	4.3
PICK HF #2	4.3
QUATRO	4.3
SPM	4.3
SCALDIS	3.7
SRX 3K	3.7
SR 3000	3.3
LSD VALUE	1.1
C.V. (%)	11.8

TABLE 19B. MELTING-OUT (SPRING) RATINGS OF CHEWINGS FESCUE CULTIVARS 1/
2004 DATA

MELTING-OUT RATINGS 1-9; 9=NO DISEASE 2/

NAME	SD1
ZODIAC (BUR 4601)	7.3
7 SEAS	7.0
AMBASSADOR	7.0
PST-4TZ	7.0
SRX 51G	7.0
CULUMBRA II (ACF 174)	6.7
DP 77-9886	6.7
LONGFELLOW II	6.7
IS-FRC 17	6.3
CASCADE	6.0
DP 77-9885	6.0
J-5 (JAMESTOWN 5)	6.0
COMPASS (ACF 188)	5.7
LSD VALUE	1.3
C.V. (%)	12.0

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

34

35.

200600258

TABLE 20A. (CONT'D) LEAF SPOT RATINGS OF FINELEAF FESCUE CULTIVARS 1/
2004 DATA

LEAF SPOT RATINGS 1-9; 9=NO DISEASE 2/

NAME	ME1	NJ2	MEAN
QUATRO	8.0	3.7	5.8
SEABREEZE	6.0	5.3	5.7
DP 77-9886	7.3	3.8	5.5
SCALDIS	7.0	4.0	5.5
C03-4676	7.0	3.7	5.3
ORACLE	7.3	3.0	5.2
BOREAL	6.0	3.0	4.5
DAWSON E	3.7	5.3	4.5
SHADEMASTER	5.3	1.3	3.3
LSD VALUE	2.0	1.3	1.2
C.V. (%)	16.9	14.5	16.3

TABLE 20B. LEAF SPOT RATINGS OF CHEWINGS FESCUE CULTIVARS 1/
2004 DATA

LEAF SPOT RATINGS 1-9; 9=NO DISEASE 2/

NAME	ME1	NJ2	MEAN
DP 77-9885	8.3	7.0	7.7
IS-FRC 17	8.0	7.0	7.5
SRX 51G	7.7	7.3	7.5
LONGFELLOW II	8.0	6.7	7.3
AMBASSADOR	7.7	6.3	7.0
ZODIAC (BUR 4601)	8.0	6.0	7.0
CULUMBRA II (ACF 174)	7.0	6.3	6.7
PST-4TZ	7.0	6.3	6.7
7 SEAS	7.0	6.0	6.5
CASCADE	8.0	4.7	6.3
J-5 (JAMESTOWN 5)	7.0	5.7	6.3
COMPASS (ACF 188)	7.3	4.7	6.0
DP 77-9886	7.3	3.8	5.5
LSD VALUE	1.6	1.4	1.1
C.V. (%)	13.0	15.1	14.0

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

2006002 58

TABLE 21A. (CONT'D) DOLLAR SPOT RATINGS OF FINELEAF FESCUE CULTIVARS 1/
2004 DATA

DOLLAR SPOT RATINGS 1-9; 9=NO DISEASE 2/

NAME	MD1
RAZOR	6.0
CO3-4676	5.7
IS-FRR 23	5.3
DAWSON E	5.0
SHADEMASTER	5.0
SRX 55R	5.0
JASPER II	4.7
ORACLE	3.7
BOREAL	3.0
LSD VALUE	0.9
C.V. (%)	7.5

TABLE 21B. DOLLAR SPOT RATINGS OF CHEWINGS FESCUE CULTIVARS 1/
2004 DATA

DOLLAR SPOT RATINGS 1-9; 9=NO DISEASE 2/

NAME	MD1
COMPASS (ACF 188)	9.0
SRX 51G	9.0
PST-4TZ	8.3
ZODIAC (BUR 4601)	8.3
AMBASSADOR	8.0
DP 77-9885	8.0
IS-FRC 17	8.0
DP 77-9886	7.7
J-5 (JAMESTOWN 5)	7.7
7 SEAS	7.0
CULUMBRA II (ACF 174)	7.0
LONGFELLOW II	7.0
CASCADE	6.7
LSD VALUE	0.7
C.V. (%)	5.8

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

2006002 58
2006002 58
36
34

TABLE 22A. (CONT'D) RED THREAD RATINGS OF FINELEAF FESCUE CULTIVARS 1/
2004 DATA

RED THREAD RATINGS 1-9; 9=NO DISEASE 2/

NAME	ME1	PA1	WA3	WI1	MEAN
CELESTIAL	8.7	6.0	4.3	4.7	5.9
ORACLE	7.0	4.7	4.7	7.3	5.9
ASC 245	7.7	6.3	4.3	5.3	5.9
AUDUBON	8.0	5.7	3.7	5.7	5.8
C-SMX	6.7	5.3	4.7	6.3	5.8
RAZOR	7.3	4.3	5.0	6.0	5.7
SHADEMASTER	7.0	6.3	3.3	5.7	5.6
C03-4676	8.0	5.7	3.7	4.3	5.4
BOREAL	6.3	5.0	3.0	6.0	5.1
LSD VALUE	1.3	1.6	1.8	1.4	0.8
C.V. (%)	10.3	13.8	22.4	10.9	13.6

TABLE 22B. RED THREAD RATINGS OF CHEWINGS FESCUE CULTIVARS 1/
2004 DATA

RED THREAD RATINGS 1-9; 9=NO DISEASE 2/

NAME	ME1	PA1	WA3	WI1	MEAN
COMPASS (ACF 188)	8.3	8.0	5.7	9.0	7.8
DP 77-9886	9.0	7.7	5.3	9.0	7.8
AMBASSADOR	9.0	6.7	6.0	9.0	7.7
LONGFELLOW II	8.3	8.0	5.0	9.0	7.6
ZODIAC (BUR 4601)	8.7	7.7	5.0	9.0	7.6
7 SEAS	8.3	7.7	5.0	9.0	7.5
CASCADE	8.7	7.3	5.0	9.0	7.5
PST-4TZ	8.3	7.7	5.0	9.0	7.5
DP 77-9885	8.3	7.0	5.3	9.0	7.4
J-5 (JAMESTOWN 5)	8.0	7.3	4.7	9.0	7.3
SRX 51G	8.0	7.0	5.0	9.0	7.3
CULUMBRA II (ACF 174)	7.3	6.7	5.3	9.0	7.1
IS-FRC 17	7.7	6.3	4.7	8.7	6.8
LSD VALUE	1.5	1.7	1.7	0.3	0.7
C.V. (%)	11.1	14.7	20.8	1.8	12.0

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

200600258

TABLE 23A. (CONT'D) SUMMER PATCH RATINGS OF FINELEAF FESCUE CULTIVARS 1/
2004 DATA

SUMMER PATCH RATINGS 1-9; 9=NO DISEASE 2/

NAME	NJ1
PREDATOR	2.7
SR 3000	2.7
DAWSON E	2.3
QUATRO	2.3
SEABREEZE	2.3
ORACLE	2.0
SRX 3K	2.0
BOREAL	1.7
SCALDIS	1.7
LSD VALUE	1.8
C.V. (%)	23.6

TABLE 23B. SUMMER PATCH RATINGS OF CHEWINGS FESCUE CULTIVARS 1/
2004 DATA

SUMMER PATCH RATINGS 1-9; 9=NO DISEASE 2/

NAME	NJ1
DP 77-9885	8.3
7 SEAS	7.7
ZODIAC (BUR 4601)	7.7
DP 77-9886	7.3
SRX 51G	7.0
IS-FRC 17	6.3
COMPASS (ACF 188)	6.0
CULUMBRA II (ACF 174)	5.3
LONGFELLOW II	5.3
PST-4TZ	5.3
AMBASSADOR	4.3
J-5 (JAMESTOWN 5)	4.3
CASCADE	3.7
LSD VALUE	2.1
C.V. (%)	21.3

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

200600258

38

39.

40.
200600258

TABLE 27A. (CONT'D) SEEDHEAD RATINGS OF FINELEAF FESCUE CULTIVARS 1/
2004 DATA

SEEDHEAD RATINGS 1-9; 9=NONE 2/

NAME	KS3
PICK HF #2	3.3
PREDATOR	3.3
SPM	3.3
SR 3000	3.3
BERKSHIRE	3.0
OXFORD	3.0
RELIANT IV (A01630REL)	3.0
SRX 3K	3.0
SCALDIS	2.7
LSD VALUE	1.0
C.V. (%)	12.5

TABLE 27B. SEEDHEAD RATINGS OF CHEWINGS FESCUE CULTIVARS 1/
2004 DATA

SEEDHEAD RATINGS 1-9; 9=NONE 2/

NAME	KS3
AMBASSADOR	7.7
CULUMBRA II (ACF 174)	7.7
IS-FRC 17	7.3
ZODIAC (BUR 4601)	7.3
SRX 51G	7.0
DP 77-9886	6.7
LONGFELLOW II	6.0
7 SEAS	5.7
DP 77-9885	5.7
CASCADE	5.3
COMPASS (ACF 188)	5.3
J-5 (JAMESTOWN 5)	5.3
PST-4TZ	5.0
LSD VALUE	1.1
C.V. (%)	11.1

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

39
200600258

200600258

TABLE 28A. (CONT'D) MOWING QUALITY RATINGS OF FINELEAF FESCUE CULTIVARS 1/
2004 DATA

MOWING QUALITY RATINGS 1-9; 9=CLEANEST CUT 2/

NAME	ND1
IS-FRR 30	6.0
MUSICA	6.0
PATHFINDER	6.0
QUATRO	6.0
SRX 3K	6.0
SRX 51G	6.0
DAWSON E	5.7
IS-FRR 29	5.7
SEABREEZE	5.7
LSD VALUE	1.0
C.V. (%)	9.0

TABLE 28B. MOWING QUALITY RATINGS OF CHEWINGS FESCUE CULTIVARS 1/
2004 DATA

MOWING QUALITY RATINGS 1-9; 9=CLEANEST CUT 2/

NAME	ND1
AMBASSADOR	7.3
CULUMBRA II (ACF 174)	7.3
J-5 (JAMESTOWN 5)	7.3
7 SEAS	7.0
IS-FRC 17	7.0
LONGFELLOW II	7.0
DP 77-9886	6.7
ZODIAC (BUR 4601)	6.7
COMPASS (ACF 188)	6.3
DP 77-9885	6.3
PST-4TZ	6.3
CASCADE	6.0
SRX 51G	6.0
LSD VALUE	1.2
C.V. (%)	10.7

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

200600258

40

41.

TABLE 29A. PERCENT ESTABLISHMENT RATINGS OF FINELEAF FESCUE CULTIVARS 1/
(CONT'D) 2004 DATA 2/

NAME	IL1	ME1	NJ1	NJ2	SD1	VA1	WA1	WA3	MEAN
DAWSON E	60.0	28.3	61.7	48.3	87.7	96.3	70.0	73.3	65.7
SEABREEZE	53.3	30.0	65.0	50.0	89.7	96.3	60.0	75.0	64.9
COMPASS (ACF 188)	46.7	53.3	71.7	43.3	83.3	93.3	56.7	63.3	64.0
PREDATOR	46.7	33.3	65.0	46.7	90.7	91.7	50.0	60.0	60.5
SR 3000	46.7	15.0	58.3	43.3	89.3	95.0	50.0	66.7	58.0
SPM	30.0	50.0	56.7	35.0	81.7	88.3	46.7	60.0	56.0
LSD VALUE	20.2	31.5	19.8	8.7	6.7	6.2	10.3	15.0	6.0
C.V. (%)	21.5	33.5	15.2	9.8	4.6	4.1	10.4	12.5	14.7

TABLE 29B. PERCENT ESTABLISHMENT RATINGS OF CHEWINGS FESCUE CULTIVARS 1/
2004 DATA 2/

NAME	IL1	ME1	NJ1	NJ2	SD1	VA1	WA1	WA3	MEAN
ZODIAC (BUR 4601)	63.3	80.0	80.0	58.3	91.7	96.3	63.3	85.0	77.3
CASCADE	80.0	43.3	89.3	56.7	91.7	96.3	63.3	88.3	76.1
DP 77-9886	50.0	80.0	83.3	56.3	87.7	96.3	73.3	80.0	75.9
AMBASSADOR	56.7	63.3	87.0	63.3	93.0	99.0	63.3	80.0	75.7
LONGFELLOW II	63.3	73.3	83.0	55.0	87.7	96.3	63.3	76.7	74.8
SRX 51G	70.0	71.7	75.0	53.3	91.7	93.3	60.0	73.3	73.5
J-5 (JAMESTOWN 5)	63.3	71.7	70.7	53.3	90.7	95.0	66.7	73.3	73.1
IS-FRC 17	60.0	50.0	78.3	56.7	90.0	93.0	66.7	86.7	72.7
PST-4TZ	66.7	51.7	68.3	58.3	90.0	93.3	60.0	83.3	71.5
DP 77-9885	53.3	65.0	80.7	50.0	89.7	90.0	56.7	73.3	69.8
CULUMBRA II (ACF 174)	53.3	51.7	85.7	51.7	91.3	83.3	60.0	75.0	69.0
7 SEAS	60.0	46.7	80.3	45.0	87.7	96.3	50.0	66.7	66.6
COMPASS (ACF 188)	46.7	53.3	71.7	43.3	83.3	93.3	56.7	63.3	64.0
LSD VALUE	21.2	33.8	21.3	8.8	5.6	5.7	11.8	12.6	6.2
C.V. (%)	21.8	34.1	16.6	10.2	3.9	3.8	11.9	10.1	15.1

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

2006002 58

TABLE 31A. (CONT'D) PERCENT SEEDHEAD RATINGS OF FINELEAF FESCUE CULTIVARS 1/
2004 DATA 2/

NAME	KY1
ZODIAC (BUR 4601)	20.0
AMBASSADOR	16.7
SR 3000	14.0
SRX 55R	8.3
MUSICA	6.7
QUATRO	6.7
BOREAL	6.0
DAWSON E	6.0
LSD VALUE	33.1
C.V. (%)	49.0

TABLE 31B. PERCENT SEEDHEAD RATINGS OF CHEWINGS FESCUE CULTIVARS 1/
2004 DATA 2/

NAME	KY1
COMPASS (ACF 188)	75.0
SRX 51G	70.0
DP 77-9885	65.0
PST-4TZ	61.7
DP 77-9886	56.7
IS-FRC 17	56.7
J-5 (JAMESTOWN 5)	46.7
7 SEAS	45.0
CULUMBRA II (ACF 174)	35.0
LONGFELLOW II	26.7
CASCADE	25.0
ZODIAC (BUR 4601)	20.0
AMBASSADOR	16.7
LSD VALUE	36.6
C.V. (%)	49.3

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

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42
43.
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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

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

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
Cascade International Seed Company	4601, BUR 4601	Zodiac
4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)*	5. TELEPHONE *(Include area code)*	6. FAX *(Include area code)*
8483 W. Stayton Rd. Aumsville, OR 97325	(503) 749-1822	(503) 749-1824
	7. PVPO NUMBER 200600258	

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. **If no, please explain.** ☑ YES ☐ NO

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? **If no, give name of country.** ☑ YES ☐ NO

10. Is the applicant the original owner? ☑ YES ☐ NO **If no, please answer one of the following:**

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?
☐ YES ☐ NO **If no, give name of country**

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?
☐ YES ☐ NO **If no, give name of country**

11. Additional explanation on ownership *(Trace ownership from original breeder to current owner. Use the reverse for extra space if needed)*:

'Zodiac' was developed by Cascade International Seed Company using germplasm obtained from the New Jersey Agricultural Experiment station.

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 0.1 hour per response, including the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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