

No.



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

NexGen Turf Research, LLC

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 importing it, or exporting it, or conditioning it for propagation, or stocking it for any of the above purposes, or using it in producing a hybrid or different variety therefrom, to the extent provided by the PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

FESCUE, RED

'Tiara'

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 twelve day of July, in the year two thousand and ten.*

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

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

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).

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

1. NAME OF OWNER NexGen Turf Research, LLC		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME ASC245	3. VARIETY NAME Tiara																						
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) 33725 Columbus St. SE Albany, OR 97322		5. TELEPHONE (include area code) 541-967-8923	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="2" style="text-align: center;">FOR OFFICIAL USE ONLY</th> </tr> <tr> <td style="width:50%;">PVPO NUMBER</td> <td style="width:50%; text-align: center; font-size: 2em;">#201000166</td> </tr> <tr> <td>FILING DATE</td> <td style="text-align: center; font-size: 1.5em;">2/16/2010</td> </tr> </table>	FOR OFFICIAL USE ONLY		PVPO NUMBER	#201000166	FILING DATE	2/16/2010																
FOR OFFICIAL USE ONLY																									
PVPO NUMBER	#201000166																								
FILING DATE	2/16/2010																								
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) Incorporated	8. IF INCORPORATED, GIVE STATE OF INCORPORATION Oregon	9. DATE OF INCORPORATION July 31, 2006																							
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) Kenneth Hignight C/O NexGen Turf Research, LLC 33725 Columbus St. SE Albany, OR 97322 USA		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:5%; text-align: center;">F</td> <td style="width:95%;">FILING AND EXAMINATION FEES:</td> </tr> <tr> <td style="text-align: center;">E</td> <td>\$ 4,382.00</td> </tr> <tr> <td style="text-align: center;">S</td> <td>DATE 2/16/2010</td> </tr> <tr> <td style="text-align: center;">R</td> <td>CERTIFICATION FEE:</td> </tr> <tr> <td style="text-align: center;">E</td> <td>\$ 768.00</td> </tr> <tr> <td style="text-align: center;">C</td> <td>DATE 7/1/2010</td> </tr> <tr> <td style="text-align: center;">I</td> <td></td> </tr> <tr> <td style="text-align: center;">V</td> <td></td> </tr> <tr> <td style="text-align: center;">E</td> <td></td> </tr> <tr> <td style="text-align: center;">E</td> <td></td> </tr> <tr> <td style="text-align: center;">D</td> <td></td> </tr> </table>		F	FILING AND EXAMINATION FEES:	E	\$ 4,382.00	S	DATE 2/16/2010	R	CERTIFICATION FEE:	E	\$ 768.00	C	DATE 7/1/2010	I		V		E		E		D	
F	FILING AND EXAMINATION FEES:																								
E	\$ 4,382.00																								
S	DATE 2/16/2010																								
R	CERTIFICATION FEE:																								
E	\$ 768.00																								
C	DATE 7/1/2010																								
I																									
V																									
E																									
E																									
D																									
11. TELEPHONE (Include area code) (541) 967-8923	12. FAX (Include area code) (541) 967-8223	13. E-MAIL																							
14. CROP KIND (Common Name) Strong creeping red fescue	16. FAMILY NAME (Botanical) Poaceae	18. DOES THE VARIETY CONTAIN ANY TRANSGENES? (OPTIONAL) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERCIALIZATION.																							
15. GENUS AND SPECIES NAME OF CROP Festuca rubra rubra	17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	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) <input type="checkbox"/> YES (If "yes", answer items 21 and 22 below) <input checked="" type="checkbox"/> NO (If "no", go to item 23)																							
19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse) <ul style="list-style-type: none"> a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> 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. <input checked="" type="checkbox"/> Filing and Examination Fee (\$3,652), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office) 		21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED																							
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? <input type="checkbox"/> YES <input checked="" type="checkbox"/> 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.)		22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS. <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED (If additional explanation is necessary, please use the space indicated on the 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.		24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)																							
SIGNATURE OF OWNER 		SIGNATURE OF OWNER																							
NAME (Please print or type) Kenneth Hignight		NAME (Please print or type)																							
CAPACITY OR TITLE Director of Research	DATE 2-15-2010	CAPACITY OR TITLE Director of Research	DATE																						

(See reverse for instructions and information collection burden statement)

GENERAL INSTRUCTIONS: 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, F; (3) for a tuber reproduced variety, 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; and (4) payment by credit card or check drawn on a U.S. bank for \$4,382 (\$518 filing fee and \$3,864 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice). **NEW:** With the application for a seed reproduced variety or by direct deposit soon after filing, the applicant must provide at least 3,000 viable untreated seeds of the variety *per se*, and for a hybrid variety at least 3,000 untreated seeds of each line necessary to reproduce the variety. Partial applications will be held in the PVPO for not more than 90 days; then returned to the applicant as un-filed. 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 payment by credit card or check payable to "Treasurer of the United States" in the amount of \$768 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

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.)

Plant Variety Protection Office
Telephone: (301) 504-5518 **FAX:** (301) 504-5291
General E-mail: PVP@mail.usda.gov
Homepage: <http://www.ams.usda.gov/science/pvpo/PVPindex.htm>

SPECIFIC INSTRUCTIONS:

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and **provide evidence** that the permanent name of the application variety (even if it is a parental, inbred line) has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: U.S. Department of Agriculture, Agricultural Marketing Service, Livestock and Seed Programs, **Seed Regulatory and Testing Branch**, 801 Summit Crossing Place, Suite C, Gastonia, North Carolina 28054-2193 Telephone: (704) 810-8870. <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 replicated 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.)

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).)

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, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program (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).

Exhibit A:

**Origin and Breeding History
Tiara Strong Creeping Red Fescue**

1. Tiara Strong creeping red fescue (*Festuca rubra rubra.*) was developed from various cycles of recurrent phenotypic and genotypic selection. Each cycle was used to improve the genetic color, yield potential, and freedom from disease.

Ninety four percent of the parental germplasm of Tiara traces its origin to plants selected from old turfs of the United States during the period from 1962 through 1980 by turfgrass scientists at the New Jersey Agricultural Experiment Station. Six percent of the plants trace their origin to a plant found in the Rose City Cemetery, Portland, Oregon. This plant contained an *Epichloe* endophyte currently referred to as the Rose City endophyte. These collections were subjected to evaluation in spaced-plant nurseries, frequently mowed turf trials, and greenhouse tests for resistance to powdery mildew (caused by *Erysiphe graminis* DC). Progenies from intercrossing the best performing selections were than subjected to many cycles of recurrent phenotypic selection with each cycle followed by single-plot progeny tests in closely mowed turf trials. Tillers were subsequently selected from the best performing turf plots to initiate additional cycles of selection. Greenhouse facilities were also used to select disease resistant, lower-growing plants with abundant tillers, and a rich, bright, dark green color.

Single-plot progenies of 707 clones selected form the Rutgers turfgrass breeding program were seeded in individual turf plots at North Brunswick and Adelphia New Jersey during the late summers of 1992. A total of 420 plants were selected from the best performing progenies following a period of summer stress in August, 1994. Selection was based on turf performance and appearance of the plots at the time of selection. The selected plants were established in greenhouse flats prior to their transfer to an isolated spaced-plant nursery in September, 1994. The spaced plant nursery was evaluated for low growth habit, fine leaf texture and dark green color. One hundred and five plants were selected before anthesis and moved to an isolated block. Seed harvested from these plants was germinated and screened for dark-green color, low growth habit and high shoot density, 27 of the plants were discarded. The remaining 78 plants were used to establish a mowed spaced-plant evaluation trial. Fifty-two plants named 'FLT' were cycled again for low growth habit, fine leaf texture and dark green color prior to the establishment of a spaced-plant nursery in the spring of 1998 containing 2,040 plants from those fifty-two progenies. Thirty-seven progenies were selected from this nursery prior to anthesis for bright dark green color, high shoot density, prostrate-low growth habit, early uniform maturity and freedom from disease. These plants were moved to an isolated crossing block in the spring of 1999. Thirty progeny lines were harvested from

01054

2010 FEB 16 PM 3:21

#201000166

In the fall of 1999, a single spaced plant nursery was established at Albany, OR. The nursery contained 60 plants of 30 progeny lines for a total of 1,800 plants. The nursery was evaluated in the spring and fall of 2000 for plant type, heading date, uniformity, genetic color, crown density, yield potential, and freedom from disease. Ten clones were selected from the spaced plant nursery and moved to an isolated crossing block in the fall of 2000 and designated ASC245. In 2001, ASC245 was harvested in bulk and established in a turf trial near Salem, NJ. Based on turf performance, ASC245 was established by seed in an increase block (1,560 plants) in 2002. The increase block was harvested in bulk and designated Tiara, breeder seed. The breeder seed was used to establish a morphological nursery for Plant Variety Protection (PVP) measurements.

2. Breeder Seed Maintenance:

A breeder seed multiplication was planted in isolation in 2002 in Albany, Oregon. Seed was harvested in bulk in 2003 and is maintained in cold storage. Seed propagation is limited to three generations; one each of foundation, registered, and certified.

3. Stability and Uniformity:

Tiara has been a stable uniform cultivar over 2 generations. No off-type or variant plants have been observed during the multiplication or reproduction. Turf plots and production fields of Tiara have been uniform.

#5010

2010 FEB 16 PM 3:21

Novelty Statement of Tiara Strong Creeping Red Fescue

The following summary outlines the distinctive characteristics of Tiara. The novelty of Tiara is based on the unique combination of these characteristics. Tiara is most similar to Boreal, but may be differentiated by using the following criteria:

- 1) Tiara has an earlier heading and anthesis date compared to Boreal (tables 1A, 1B).
- 2) Tiara exhibits a darker genetic color compared to Boreal (tables 1A, 1B).
- 3) The mature plant height of Tiara is shorter than Boreal (tables 1A, 1B).
- 4) Tiara has a reduced panicle length compared to Boreal (tables 1A, 1B).
- 5) The morphological characteristics of flag leaf length, width, height, internode length and sheath length are shorter for Tiara compared to Boreal (tables 1A, 1B).
- 6) Tiara has shorter leaf blade characteristics such as length, width, height, and sheath length compared to Boreal (tables 1A, 1B).
- 7) Tiara has a shorter lemma and glume length than Boreal (tables 2A, 2B).
- 8) Tiara expresses a lower frequency of red pigmentation of the panicle compared to Boreal (tables 3A, 3B).
- 9) Tiara produces more plants with an erect plant type than Boreal (tables 5A, 5B).

01/24

2010 FEB 16 PM 3:20

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURE MARKETING SERVICE
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Fine Leaved Fescues)

OBJECTIVE DESCRIPTION OF VARIETY
FINE LEAVED FESCUES
(Festuca spp.)

#201000166

NAME OF APPLICANT(S) NexGen Turf Research, LLC	TEMPORARY DESIGNATION ASC245	VARIETY NAME Tiara
ADDRESS (Street and No. or R.F.D. No., City, State, Zip Code) 33725 Columbus St, SE Albany, OR 97322		FOR OFFICIAL USE ONLY PVPO NUMBER #200600166

Place the appropriate number that describes the varietal character of this variety in the boxes below. Use leading zeroes when necessary: (e.g., 08 or 09). Characteristics described including numerical measurements, should represent those that are typical for the variety. Measured data should be for SPACED PLANTS. Royal Horticulture 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: See section 16, page 4.

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

- | | | | |
|--|---------------|---------------------|----------------|
| ___ 1 = <i>F. rubra ssp. commutata</i> (Chewings) | 11 = Cascade | 12 = Highlight | 13 = Jamestown |
| ___ 2 = <i>F. rubra ssp. litoralis</i> (Creeping Red) | 14 = Banner | 15 = Barfalla | 23 = Merlin |
| <u>31</u> 3 = <i>F. rubra ssp. rubra</i> (Spreading Red) | 21 = Dawson | 22 = Starlight | |
| ___ 4 = <i>F. ovina</i> (Sheep) | 24 = Pennlawn | | |
| ___ 5 = <i>F. longifolia</i> (Hard) | 31 = Boreal | | |
| ___ 6 = <i>F. tenuifolia</i> (Fine-Leaved Sheep) | 34 = Ensylva | | |
| ___ 7 = Other (Specify) F. _____ | 41 = Covar | | |
| | 51 = Durar | 52 = Biljart (C-26) | 53 = Scaldis |
| | 61 = Panda | 62 = Barok | |

2. CYTOLOGY:

5 | 6 Chromosome Number 4 Ploidy 1 = diploid 2 = tetraploid 3 = hexaploid
4 = octoploid

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

2 Northeast 0 Southeast 0 North Central 2 Pacific N.W. ___ Other (Specify) _____

4. MATURITY: Date First Headed (panicle emergence) Location(s) of Trial(s) _____

2 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 38.75 days after March 1, ___

11.50 Days earlier than 31
| Maturity same as |
| Days later than |

} Comparison Variety

5. Plant Height: (At maturity; to top of panicle; Average of 10 culms)

576.10 mm height
102.00 mm shorter than 31
Height same as |
| mm taller than |

} Comparison Variety

6. GROWTH HABIT: (Mature)

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

7. RHIZOMES:

| | mm Length | mm Width | mm Internode length
3 1 = Absent (Highlight) 2 = Weakly Creeping (Dawson) 3 = Strongly Creeping (Boreal)
4 = Very Strongly Creeping (Fortress)

#501000146

#500000054

2010 FEB 16 PM 3:20

8. LEAF BLADE:

7 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) _____ Darker than Boreal

1 Glaucoity (Sowing Year): 1 = Absent (Koket) 2 = Present (Vendrome) #201000166
1 Anthocyanin: 1 = Absent 2 = Present
2 Hairs (Basal) 1 = Absent 2 = Present
1 Margins: 1 = Smooth 2 = Semi-rough 3 = Rough
1 Margin folding (closure): 1 = Rolled inward (closed-Highlight) 2 = Flat (open-Jamestown, Engina)
2 Width class:
 1 = Very Fine (Agram, Frida) 2 = Fine (Jamestown, Highlight, Banner, Dawson)
 3 = Medium Fine (Fortress, Ruby, Scaldis) 4 = Medium Coarse (Engina)

189.50 mm Length (flag leaf)
106.35 mm Shorter than 31
 Blade length same as
 mm Longer than } Comparison Variety

3.40 mm Width (flag leaf)
0.33 mm Narrower than 31
 Blade width same as
▲ mm Wider than } Comparison Variety

9. LEAF SHEATH:

1 Anthocyanin (seedling): 1 = Absent (Highlight) 2 = Present (Jamestown, Fortress, Marga)
2 Auricle Hairiness: 1 = Absent 2 = Present
2 Margins: 1 = Open (Highlight) 2 = Closed (Jamestown)

10. PANICLE (Mature plant):

3 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
2 Branch Pubescence: 1 = Glabrous 2 = Pubescent (6%)
4 Anther Color: } 1 = Yellowish Green 2 = Green 3 = Bluish Green 4 = Purplish
2 Glume Color (At 50% } 5 = Reddish 6 = Other (Specify) _____
 flowering):

488.48 mm Length
45.12 mm Shorter than 31
 Panicle length same as
 mm Longer than } Comparison Variety

11. PALEA:

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

2010 FEB 16 PM 3:20

12. LEMMA (Mature):

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

5.98 mm Lemma Length
0.55 mm Shorter than 31
 Lemma length same as
 mm Longer than } Comparison Variety

1.03 mm Lemma Width
 mm Narrower than
 Lemma width same as 31
 mm Wider than } Comparison Variety

2 Awns: 1 = Absent 2 = Present
1.45 mm Awn Length
 mm Shorter than
 Awn length same as 31
 mm Longer than } Comparison Variety

13. SEED (With lemma & palea):

4 Size Class (g/1000 seed):
 1 = <.9g (Biljart, Dawson) 2 = .91-< 1.1g (Jamestown, Highlight)
 3 = 1.1 - 1.3 g (Fortress, Novorubra) 4 = > 1.3g (Boreal, Golfrood)

1,450.00 mg per 1000 seed
30.00 mg per 1000 seed less than 31
 Seed Weight same as
 mg per 1000 more than } Comparison Variety

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

- | | |
|---|---|
| <u>0</u> Melting-out <i>Drechslera poae</i>
(<i>Helminthosporium vagans</i>) | <u>0</u> Stripe rust <i>P. striiformis</i> |
| <u>0</u> Leaf spot <i>D. siccans</i> | <u>0</u> Leaf rust <i>P. poae-nemoralis</i> |
| <u>0</u> Net blotch <i>D. dictyoides</i> | <u>0</u> <i>P. crandalli</i> |
| <u>0</u> Leaf spot <i>Bipolaris sorkiniana</i> | <u>0</u> Pythium Blight <i>Pythium ultimum</i> |
| <u>0</u> Brown patch <i>Rhizoctonia solani</i> | <u>0</u> Red thread <i>Corticium fusciforme</i> |
| <u>0</u> Powdery Mildew <i>Erysiphe graminis</i> | <u>0</u> Dollar spot <i>Sclerotinia homoeocarpa</i> |
| <u>0</u> Stripe smut <i>Ustilago striiformis</i> | <u>0</u> Insect _____ |
| <u>0</u> F. Patch, Pink snow-mold <i>Fusarium nivale</i> | <u>0</u> Nematode _____ |
| <u>0</u> Fusarium blight <i>F. tricinctum</i> , <i>F. roseum</i> | <u>0</u> Other _____ |
| <u>0</u> Gray snow mold <i>Typhula lotana</i> | <u>0</u> Other _____ |
| <u>0</u> Stem rust <i>Puccinia graminis</i> | <u>0</u> Other _____ |

2010 FEB 16 PM 3:20

15. GIVE VARIETY OR VARIETIES THAT MOST CLOSELY RESEMBLE THE APPLICATION VARIETY. For the following characteristics indicate Degree of Resemblance by placing the column marked, D. R., 1 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.

#201000166

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

* 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 test.

A morphological nursery designated 03PVPFRR was established in September 2003, in Albany, Oregon. Experimental design consisted of 6 entries; 4 replications per entry; 20 plants per replication; for a total of 80 plants per entry. Shademaster, Flyer, and Boreal were used as standards. Plants were established on 2.5 foot centers with a skip row between replications and between entries.

The nursery received 30 pounds of nitrogen per acre rate following establishment and 50 pounds of nitrogen per acre per year in 2004 and 2005. The fertilizer source was 15 - 15 - 15 and was applied as a split application with 1/2 applied in the spring and 1/2 in the autumn. The nursery was sprayed twice each spring, 3 weeks between applications, with Quilt (2oz/acre rate), to prevent stem rust. One pound of Karmex per acre rate was applied during the late summer to prevent emergence of volunteer seedlings.

Data was analyzed using analysis of variance for a randomized complete block design. Means were calculated for each replication and then analyzed for tables 1A, 1B, 2A, and 2B.

Tables 3A, 3B, 4A, 4B, 5A, and 5B data were analyzed using binary data confidence intervals. The confidence intervals are given for the characteristics which expressed significant differences.

Faint, illegible handwritten text on the left side of the page.

Faint, illegible handwritten text on the right side of the page.

2010 FEB 16 PM 3:20

Exhibit D:**Additional Description****Tiara Strong Creeping Red Fescue**

Tiara has improved characteristics over current cultivars, such as Shademaster, Flyer, Fortitude, ASC266 and Boreal. The mature plant height of Tiara is shorter than ASC266, Boreal, Flyer, and Shademaster (tables 1A, 1B). Tiara exhibits a reduced panicle length compared to Flyer, Boreal, and Shademaster (tables 1A, 1B). The flag leaf characteristics length, height, internode length, and sheath length of Tiara are shorter compared to ASC266, Shademaster, Flyer and Boreal (tables 1A, 1B). The flag leaf sheath length of Tiara is shorter than Fortitude (tables 1A, 1B). The leaf blade characteristics; length, height and sheath length of Tiara are shorter compared to ASC266, Flyer and Boreal (tables 1A, 1B). The length of the lemma is shorter for Tiara compared to ~~Fortitude~~, Flyer and Boreal, but longer than Fortitude (tables 2A, 2B). The glume length of Tiara is shorter compared to ASC266, Shademaster, Flyer, and Boreal (tables 2A, 2B). The number of florets per spikelet is greater for Tiara than Fortitude (tables 2A, 2B). Tiara differs from the other Strong creeping red fescues in many whorl characteristics. The length of longest branch of the lower most whorl is shorter for Tiara than ASC266, Shademaster, Flyer and Boreal (tables 2A, 2B, illus. 1). The distance between the lower most whorls of Tiara is shorter than ASC266, Shademaster, Flyer, and Boreal (tables 2A, 2B, illus. 1). The number of spikelets on the longest branch of the lower most whorl of Tiara is reduced compared to Fortitude, ASC266, Shademaster, Flyer and Boreal (tables 2A, 2B, illus. 1). The number of spikelets per panicle is also reduced for Tiara compared to Fortitude, ASC266, Shademaster, Flyer, and Boreal (tables 2A, 2B, illus. 1). The length of the panicle from the lower most whorl to panicle tip of Tiara is shorter than Flyer, Boreal, and Shademaster, and ASC266 (tables 2A, 2B, illus. 1).

Tiara may be differentiated on several visual characteristics. Tiara has a higher frequency of plants with an erect growth habit compared to Shademaster, Flyer and Boreal (tables 5A, 5B). Tiara has a lower frequency of plants with a narrow panicle compared to ASC266 (tables 3A, 3B). Tiara expresses fewer plants with a compact panicle compared to ASC266 (tables 3A, 3B). Tiara has a higher seed weight per 1,000 compared to ~~ASC266~~ and Flyer, but lower than Fortitude (tables 5A, 5B).

2010 FEB 16 PM 3:20

Table 1A

2004 Morphological Data

(85:2/16/10)

Cultivar	Heading Date days after March 1	Anthesis Date days after March 1	Genetic Color (scale: 1-9, 9= darkest)	Mature Plant Height (mm)	Plant Width (mm)	Panicle Length (mm)	Flag Leaf Length (mm)	Flag Leaf Width (mm)	Flag Leaf Height (mm)	Flag Leaf Sheath Length (mm)	Flag Leaf Internode Length (mm)	Leaf Blade Length (mm)	Leaf Blade Width (mm)	Leaf Blade Height (mm)	Leaf Sheath Length (mm)
Tiara	38.75	48.50	6.55	576.10	205.08	488.48	189.50	3.40	213.45	116.35	68.28	140.45	3.15	95.60	62.43
Fortitude	42.75	49.00	5.95	550.33	238.90	457.90	191.85	3.53	201.28	104.40	64.73	147.65	3.00	92.10	62.48
ASC266	41.50	48.00	5.95	655.98	276.95	517.70	238.65	3.83	276.70	134.60	98.98	177.60	3.35	121.60	77.15
Shademaster	34.50	45.00	5.30	762.28	265.58	617.80	276.65	3.48	306.90	162.15	105.85	196.53	3.13	129.15	87.08
Flyer	36.25	45.25	5.40	760.08	244.63	600.78	276.93	3.60	326.00	163.65	118.03	209.93	3.13	145.08	95.08
Boreal	50.25	55.00	5.00	678.10	244.45	533.60	295.85	3.73	306.78	166.83	98.40	226.15	3.98	139.53	98.60
LSD 5%	2.28	1.51	0.25	42.29	40.00	44.52	15.83	0.24	20.80	6.79	9.53	12.82	0.34	14.87	5.90
C.V.	4.52	2.52	3.59	5.14	13.12	6.70	5.21	5.29	6.17	3.88	8.32	5.65	8.38	9.96	5.92

■ Cultivar under evaluation

■ Significant difference over two years one location.

■ Significant difference over one year one location.

Measurements taken in Albany, Oregon

4 reps; 20 plants/rep = 80 data points

Table 1B

2005 Morphological Data

Cultivar	Heading Date days after March 1	Anthesis Date days after March 1	Genetic Color (scale: 1-9 9=darkest)	Mature Plant Height (mm)	Plant Width (mm)	Panicle Length (mm)	Flag Leaf Length (mm)	Flag Leaf Width (mm)	Flag Leaf Height (mm)	Flag Leaf Sheath Length (mm)	Flag Leaf Internode Length (mm)	Leaf Blade Length (mm)	Leaf Blade Width (mm)	Leaf Blade Height (mm)	Leaf Sheath Length (mm)
Tiara	28.25	50.00	5.65	727.83	251.63	587.18	245.03	3.80	277.98	142.35	117.15	189.08	2.73	104.83	85.03
Fortitude	35.75	51.75	5.25	677.60	282.38	542.98	238.23	4.23	260.08	127.35	113.20	184.40	2.38	99.40	79.03
ASC266	28.25	48.00	5.35	844.45	289.38	677.95	289.55	4.30	332.20	167.60	144.50	215.85	2.95	126.40	96.70
Shademaster	27.75	50.00	4.93	888.98	282.00	729.20	319.10	3.85	328.15	186.73	138.95	227.90	2.43	115.15	103.23
Flyer	25.75	49.00	5.13	929.03	286.50	751.78	325.03	4.10	377.15	191.60	156.88	237.03	2.65	138.48	113.65
Boreal	38.50	53.50	5.03	907.15	284.08	723.15	388.90	4.18	385.90	207.73	154.28	291.40	3.40	145.15	126.85
LSD 5%	3.38	1.66	0.23	32.26	20.47	33.78	16.08	0.32	26.06	7.39	12.97	13.60	0.26	13.89	6.34
C.V.	8.87	2.66	3.59	3.14	5.91	4.08	4.31	6.42	6.43	3.49	7.61	4.89	7.68	9.21	5.07

■ Cultivar under evaluation

■ Significant difference over two years one location.

■ Significant difference over one year one location.

Measurements taken in Albany, Oregon

4 reps; 20 plants/rep = 80 data points

#201000166

2010 FEB 16 PM 3:20

Table 2A

2004 Laboratory Morphological Data

Cultivar	Lemma Length (mm)	Lemma Width (mm)	Lemma Awn Length (mm)	Glume Length (mm)	Florets per Spikelet	Spikelet Length (mm)	Length of Longest Branch Lowermost Whorl (mm)	Distance Between Lower Most Whorls (mm)	Number of Spikelets on the Longest Branch Lowermost Whorl	Spikelets per Panicle	Length of Panicle from Lower Most Whorl to Tip (mm)
Tiara	6.10	1.13	3.15	4.90	7.25	14.20	55.30	32.48	8.25	30.00	104.68
Fortitude	5.85	1.15	2.98	4.90	6.25	12.73	54.08	31.13	11.50	39.25	102.78
ASC266	6.25	1.15	3.53	5.45	6.75	14.25	65.63	34.60	11.75	40.00	123.93
Shademaster	6.35	1.10	3.45	5.45	6.75	15.25	75.05	40.80	14.00	46.00	145.63
Flyer	6.85	1.15	3.50	5.65	7.00	16.13	78.95	42.55	11.50	39.25	147.80
Boreal	6.78	1.13	3.78	6.03	7.00	16.18	86.68	44.00	14.75	47.75	159.18
LSD 5%	0.20	0.07	0.26	0.25	0.64	0.58	5.69	2.04	1.99	4.67	8.46
C.V.	2.53	4.65	6.23	3.73	7.56	3.15	6.62	4.38	13.45	9.34	5.22

■ Cultivar under evaluation

■ Significant difference over two years one location.

■ Significant difference over one year one location.

Measurements taken in Albany, Oregon

4 reps; 20 plants/rep = 80 data points

Table 2B

2005 Laboratory Morphological Data

Cultivar	Lemma Length (mm)	Lemma Width (mm)	Lemma Awn Length (mm)	Glume Length (mm)	Florets per Spikelet	Spikelet Length (mm)	Length of Longest Branch Lowermost Whorl (mm)	Distance Between Lower Most Whorls (mm)	Number of Spikelets on the Longest Branch Lowermost Whorl	Spikelets per Panicle	Length of Panicle from Lower Most Whorl to Tip (mm)
Tiara	5.98	1.03	1.45	4.58	6.75	13.18	61.03	34.83	6.00	32.00	118.35
Fortitude	5.58	0.98	1.38	4.38	5.50	10.98	58.30	34.20	7.25	41.00	112.60
ASC266	5.93	1.05	1.65	5.00	6.25	12.08	67.25	37.75	7.75	41.00	135.10
Shademaster	6.08	1.03	1.68	5.13	5.75	12.40	72.40	42.35	8.75	46.75	154.05
Flyer	6.53	1.03	1.58	5.35	6.50	13.88	82.38	45.38	8.00	40.00	160.33
Boreal	6.53	1.03	1.60	5.55	6.00	13.58	93.08	47.35	10.00	52.50	174.30
LSD 5%	0.22	0.05	0.21	0.25	0.75	1.05	5.63	2.55	0.87	2.78	7.28
C.V.	2.96	4.10	10.91	4.05	9.85	6.68	6.27	5.11	8.86	5.31	4.12

■ Cultivar under evaluation

■ Significant difference over two years one location.

■ Significant difference over one year one location.

Measurements taken in Albany, Oregon

4 reps; 20 plants/rep = 80 data points

#201000166

2010 FEB 16 PM 3:20

Panicle Type Inflorescence

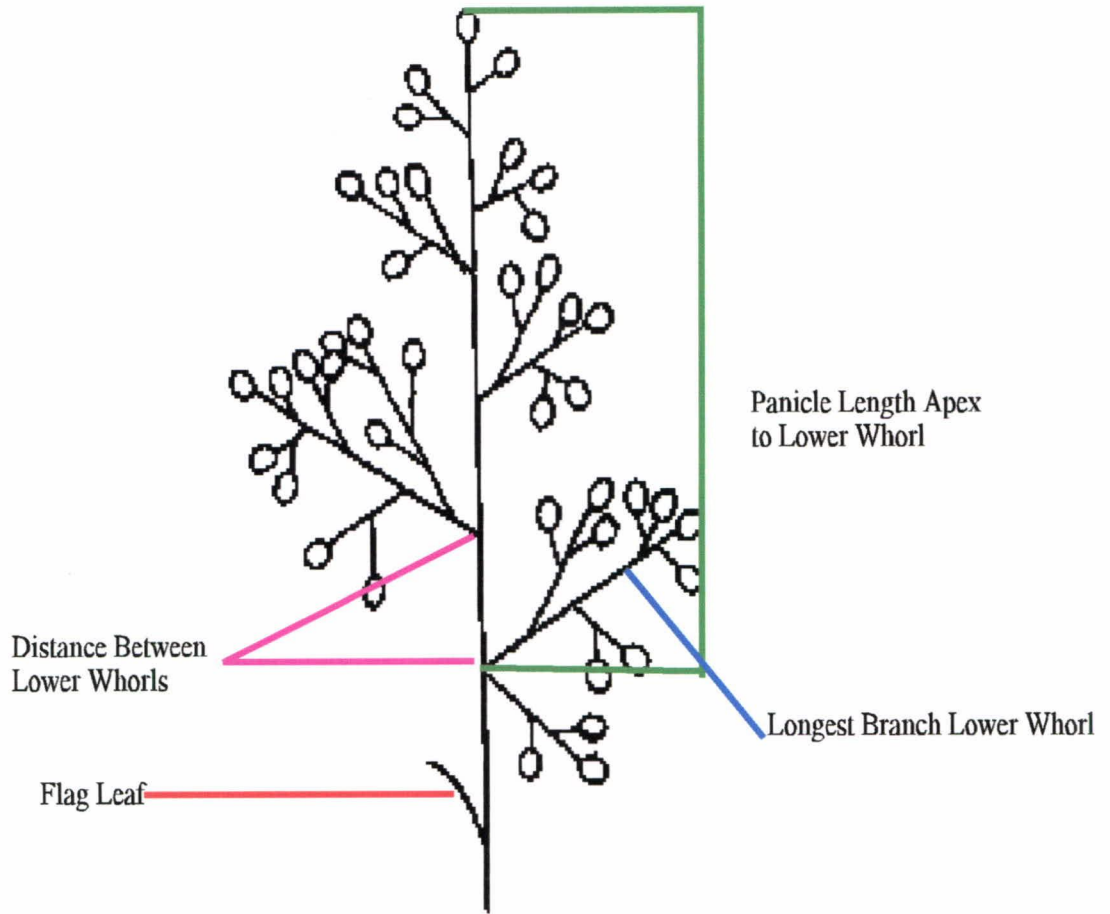


Illustration 1.

100-100000-1000

2010 FEB 16 PM 3:20

Table 3A

2004 Morphological Measurements of the Panicle

Cultivar	Anther Color % Yellow	Anther Color % Purple	Panicle Color % Red	Glume Color % Purple	Panicle Orientation % Nodding	Panicle Shape Narrow			Panicle Shape Oblong	Panicle Type % Open	Panicle Type Compact			Percent Branches of Lower Whorl =1	Percent Branches of Lower Whorl =2	Percent Branches of Lower Whorl >3	Panicle Branch Pubescence % Present
						% Present	Lower CI	Upper CI			% Present	Lower CI	Upper CI				
Tiara	0	100	8	19	2	33	0.227	0.433	68	68	33	0.227	0.433	16	79	5	0
Fortitude	1	99	18	15	4	31	0.209	0.411	69	69	31	0.209	0.411	6	76	18	1
ASC266	1	99	19	16	2	59	0.482	0.698	40	40	59	0.482	0.698	15	74	11	13
Shademaster	1	99	20	24	14	59	0.482	0.698	41	41	59	0.482	0.698	24	65	11	11
Flyer	0	100	20	27	10	54	0.431	0.649	46	46	54	0.431	0.649	31	55	14	16
Boreal	3	97	69	40	9	43	0.322	0.538	58	58	43	0.322	0.538	19	75	6	15
LSD (0.05)																	

■ Cultivar under evaluation

■ Significant difference over two years one location.

■ Significant difference over one year one location.

Measurements taken in Albany, Oregon

4 reps; 20 plants/rep = 80 data points

CI= Confidence Interval

Table 3B

2005 Morphological Measurements of the Panicle

Cultivar	Anther Color % Yellow	Anther Color % Purple	Panicle Color % Red	Glume Color % Purple	Panicle Orientation % Nodding	Panicle Shape Narrow			Panicle Shape Oblong	Panicle Type % Open	Panicle Type Compact			Percent Branches of Lower Whorl =1	Percent Branches of Lower Whorl =2	Percent Branches of Lower Whorl >3	Panicle Branch Pubescence % Present
						% Present	Lower CI	Upper CI			% Present	Lower CI	Upper CI				
Tiara	3	97	46	30	70	38	0.274	0.486	63	63	38	0.274	0.486	14	84	2	6
Fortitude	5	95	37	25	0	21	0.121	0.299	79	79	21	0.121	0.299	4	84	12	4
ASC266	3	97	55	27	79	61	0.503	0.717	39	39	61	0.503	0.717	11	83	6	15
Shademaster	5	95	65	49	100	45	0.341	0.559	55	55	45	0.341	0.559	12	80	8	16
Flyer	3	97	47	36	100	61	0.503	0.717	39	39	61	0.503	0.717	30	60	10	19
Boreal	1	99	69	41	94	54	0.431	0.649	46	46	54	0.431	0.649	6	89	5	24
LSD (0.05)																	

■ Cultivar under evaluation

■ Significant difference over two years one location.

■ Significant difference over one year one location.

Measurements taken in Albany, Oregon

4 reps; 20 plants/rep = 80 data points

CI= Confidence Interval

#201000166

2010 FEB 16 PM 3:20

Table 4A

2004 Additional Measurements of the Leaf Blade and Seed

Cultivar	Node Color % Distinct	Lemma Hairs % Several	Lemma Hairs % Many	Lemma Awn % Present	Palea Hairs % Present	Leaf Blade Margin Hairs % Present	Leaf Sheath Auricle Hairs % Short	Leaf Sheath Auricle Hairs % Long	Leaf Sheath Surface Hairs % Glabrous	Leaf Sheath Collar Hairs % Glabrous	Leaf Blade Surface Hairs % Present
Tiara	36	95	4	100	100	48	33	20	3	100	100
Fortitude	41	69	29	100	100	51	42	14	10	100	100
ASC266	44	68	30	100	100	57	35	10	1	100	100
Shademaster	31	71	8	100	100	49	15	4	13	100	100
Flyer	63	79	8	100	100	75	27	11	8	100	100
Boreal	65	88	5	100	100	71	25	9	16	100	100

■ Cultivar under evaluation

■ Significant difference over two years one location.

■ Significant difference over one year one location.

Measurements taken in Albany, Oregon

4 reps; 20 plants/rep = 80 data points

Table 4B

2005 Additional Measurements of the Leaf Blade and Seed

Cultivar	Node Color % Distinct	Lemma Hairs % Several	Lemma Hairs % Many	Lemma Awn % Present	Palea Hairs % Present	Leaf Blade Margin Hairs % Present	Leaf Sheath Auricle Hairs % Short	Leaf Sheath Auricle Hairs % Long	Leaf Sheath Surface Hairs % Glabrous	Leaf Sheath Collar Hairs % Glabrous	Leaf Blade Surface Hairs % Present
Tiara	24	95	5	100	100	49	23	19	12	100	100
Fortitude	44	68	33	100	100	41	30	28	28	100	100
ASC266	23	66	34	100	100	55	41	7	0	100	100
Shademaster	24	83	11	100	100	57	7	10	4	100	100
Flyer	34	88	11	100	100	61	8	16	12	100	100
Boreal	38	93	5	100	100	54	18	19	17	100	100

■ Cultivar under evaluation

■ Significant difference over two years one location.

■ Significant difference over one year one location.

Measurements taken in Albany, Oregon

4 reps; 20 plants/rep = 80 data points

#201000166

2010 FEB 16 PM 3:20

Table 5A 2004 Additional Morphological Measurements

Cultivar	Growth Habit Erect			Growth Habit at Anthesis % Semi-Erect	Growth Habit at Anthesis % Prostrate	Leaf Blade Anthocyanin % Purple	Leaf Blade Margin Folding % Closed	Leaf Sheath Margins % Open	Spring Growth Habit % Prostrate	Spring Growth Habit % Semi-Erect	Spring Growth Habit % Erect	Leaf Blade Margin Roughness % Smooth	Leaf Blade Margin Roughness % Semi-Rough	Leaf Blade Margin Roughness % Rough	Seed Weight mg per 1,000 seeds
	% Present	Lower CI	Upper CI												
Tiara	95	0.902	0.998	5	0	0	100	0	8	91	1	100	0	0	1329
Fortitude	91	0.847	0.973	9	0	0	100	0	11	88	1	100	0	0	1567
ASC266	99	0.968	1.012	1	0	0	100	0	9	90	1	100	0	0	1443
Shademaster	11	0.041	0.179	70	19	0	100	0	11	86	3	100	0	0	1300
Flyer	13	0.056	0.204	74	13	0	100	0	11	88	1	100	0	0	1355
Boreal	14	0.064	0.216	84	2	0	100	0	8	91	1	100	0	0	1418
LSD (0.05)															

■ Cultivar under evaluation
■ Significant difference over two years one location.
■ Significant difference over one year one location.
 Measurements taken in Albany, Oregon
 4 reps; 20 plants/rep = 80 data points
 CI = Confidence Interval

Table 5B 2005 Additional Morphological Measurements

Cultivar	Growth Habit Erect			Growth Habit at Anthesis % Semi-Erect	Growth Habit at Anthesis % Prostrate	Leaf Blade Anthocyanin % Purple	Leaf Blade Margin Folding % Closed	Leaf Sheath Margins % Open	Spring Growth Habit % Prostrate	Spring Growth Habit % Semi-Erect	Spring Growth Habit % Erect	Leaf Blade Margin Roughness % Smooth	Leaf Blade Margin Roughness % Semi-Rough	Leaf Blade Margin Roughness % Rough	Seed Weight mg per 1,000 seeds
	% Present	Lower CI	Upper CI												
Tiara	96	0.917	1.003	4	0	0	100	0	0	95	5	81	19	0	1450
Fortitude	99	0.968	1.012	1	0	0	100	0	1	99	0	89	11	0	1470
ASC266	93	0.874	0.986	7	0	0	100	0	0	100	0	90	10	0	1464
Shademaster	9	0.027	0.156	91	0	0	100	0	0	99	1	90	10	0	1316
Flyer	5	0.002	0.098	95	0	0	100	0	1	98	1	88	12	0	1326
Boreal	10	0.034	0.166	60	0	0	100	0	2	98	0	83	17	0	1420
LSD (0.05)															

■ Cultivar under evaluation
■ Significant difference over two years one location.
■ Significant difference over one year one location.
 Measurements taken in Albany, Oregon
 4 reps; 20 plants/rep = 80 data points
 CI = Confidence Interval

2010 FEB 16 PM 3:20

U.S. DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE

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).

**EXHIBIT E
 STATEMENT OF THE BASIS OF OWNERSHIP**

1. NAME OF APPLICANT(S) NexGen Turf Research, LLC	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER AS#245	3. VARIETY NAME Tiara
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) 33725 Columbus St. SE Albany, OR 97322 USA	5. TELEPHONE (Include area code) (541) 967-8923	6. FAX (Include area code) (541) 967-8223
7. PVPO NUMBER <div style="text-align: center; font-size: 2em; font-weight: bold;">#201000166</div>		

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):

PLEASE NOTE:

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

- 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.
- 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.
- 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.

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, D.C. 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provide and employer.

#50100000

2010 FEB 15 PM 3:20

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 5 minutes 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.

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

**EXHIBIT F
DECLARATION REGARDING DEPOSIT**

NAME OF OWNER (S) NexGen Turf Research, LLC	ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country) 33725 Columbus St, S. E Albany, OR 97322	TEMPORARY OR EXPERIMENTAL DESIGNATION ASC245
		VARIETY NAME Tiara
NAME OF OWNER REPRESENTATIVE (S) Kenneth Hignight	ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country) 33725 Columbus St, S. E Albany, OR 97322	FOR OFFICIAL USE ONLY
		PVPO NUMBER

I do hereby declare that during the life of the certificate a viable sample of propagating material of the subject variety will be deposited, and replenished as needed periodically, in a public repository in the United States in accordance with the regulations established by the Plant Variety Protection Office.

Kenneth Hignight
Signature

5-25-2010
Date

2010 JUN 7 PM12:02

DEPT. AGRICULTURE
OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20250
U.S. DEPARTMENT OF AGRICULTURE