No. 9900307

# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

## Progeny Advanced Genetics, Inc.

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 [illegible]GHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR [illegible]RTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE [illegible] PURPOSE , OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE [illegible] OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT P[illegible]Y THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

*LETTUCE*

*'Grand Max'*

*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 nineteenth day of September, in the year two thousand and five.*

*Attest:*

*Commissioner*
*Plant Variety Protection Office*
*Agricultural Marketing Service*

*[illegible] of Agriculture*

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

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

FORM APPROVED - OMB NO. 0581-0

# 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 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 protect certificate is to be issued (7 U.S.C. 2421). Information is held confiden until certificate is issued (7 U.S.C. 2426).*

1. NAME OF APPLICANT(S) *(as it is to appear on the Certificate)*
PROGENY ADVANCED GENETICS, INC.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER
PX634 B

3. VARIETY NAME RWS12-9-4
Grand Max
~~PX 634 B~~ RAD
~~PX634B~~ 4/16/

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
1536 B MOFFETT STREET
SALINAS CA 93905

5. TELEPHONE *(include area code)*
831-751-6030

6. FAX *(include area code)*
831-751-6032

FOR OFFICIAL USE ONLY

PVPO NUMBER 9900307

FILING DATE 5/18/99

FEES RECEIVED
FILING AND EXAMINATION FEE: $ 2450.00
DATE 5-18-99
CERTIFICATION FEE: $ 432.00
DATE 8-1-05

7. GENUS AND SPECIES NAME
LACTUCA SATIVA

8. FAMILY NAME *(Botanical)*
COMPOSITAE

9. CROP KIND NAME *(Common name)*
LETTUCE

10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.)* *(Common name)*
CORPORATION

11. IF INCORPORATED, GIVE STATE OF INCORPORATION
CALIFORNIA

12. DATE OF INCORPORATION
DECEMBER 26, 1994

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
MR. NATHAN K. OLIVAS, PRESIDENT
PROGENY ADVANCED GENETICS, INC.
1536 B MOFFETT STREET
SALINAS, CALIFORNIA 93905

14. TELEPHONE *(include area code)*
831-751-6030

15. FAX *(include area code)*
831-751-6032

16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow instructions on reverse)*
- a. [X] Exhibit A. Origin and Breeding History of the Variety
- b. [X] Exhibit B. Statement of Distinctness
- c. [X] Exhibit C. Objective Description of the Variety
- d. [X] Exhibit D. Additional Description of the Variety *(Optional)*
- e. [X] Exhibit E. Statement of the Basis of the Applicant's Ownership
- f. [X] 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. [X] Filing and Examination Fee ($2,450), made payable to "Treasurer of the United States" *(Mail to PVPO)*

17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY, AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act)*
☐ YES *(If "yes," answer items 18 and 19 below)* ☒ NO *(If "no," go to item 20)*

18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ YES ☒ NO

19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
☒ YES *(If "yes," give names of countries and dates)* ☐ NO
USA JUNE 5, 1998

21. The applicant(s) declare that a viable sample of basic seed of the variety will be 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 applicant(s) is(are) the owner(s) 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.

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

SIGNATURE OF APPLICANT *(Owner(s))*

NAME *(Please print or type)*
NATHAN K. OLIVAS

CAPACITY OR TITLE
PRESIDENT

DATE
5/12/99

SIGNATURE OF APPLICANT *(Owner(s))*

NAME *(Please print or type)*

CAPACITY OR TITLE

DATE

STD 470

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**Exhibit A**
**Origin and Breeding History**

Grand Max is an iceberg lettuce variety developed from a hand pollinated cross of Raider and Tres Equis made in 1993 in the San Joaquin Valley. The F1 seed harvested was designated 55X41. The two parent varieties were selected for their compatibility. Raider, selected for its heat tolerances, and Tres Equis for its larger head and frame size. The cross was made to produce a tip burn tolerant, improved heading iceberg lettuce for the fall plantings in the lettuce production regions of Huron California and Yuma Arizona.

Approximately 40 plants of the F1 seed 55X41 were planted in the San Joaquin Valley research production field for increase in 1994. The plants were rogued, eliminating the self-pollinating plants. The F2 seed was harvested in August of 1994.

The F2 seed was designated as 94140B and plants from the F2 seed were evaluated in research trials in 1994. Individual F2 plants were selected for improved head and frame size, heavier leaf texture, slow bolting, and tolerance to tip burn. Selected plants were grown to seed in our San Martin green house facility where the F3 seed was harvested. A small quantity of the seed from the individual plants were trialed in Yuma in 1995 and one F3 line was identified as demonstrating the desired traits of improved head and frame size, improved leaf texture, slower bolting, and tolerance to tip burn. This F3 line was identified as PX 634 B.

The F3 seed designated as PX 634 B was planted in our research production field in 1996 where it was evaluated and rogued to remove all early bolting and small plants. The remaining plants from each line were harvested to produce F4 seed in August of 1996. Seed from these lines were immediately cleaned, packaged and trialed in Yuma during the 1996 production year. The F4 seed of PX 634B as evaluated in repeated research trials was noted as uniform and stable, and stood out as demonstrating the desired traits. The traits that distinguished this particular line, were its improved head and frame size, its slow bolting, its improved leaf texture, and its tolerance to tip burn.

Remnant F4 breeder seed for the variety PX 634 B was increased in the 1997 San Joaquin Valley research production field. The variety was selectively rogued, removing all small and early maturing plants. The F5 increase of PX 634 B was harvested in the fall. The bulk of the F5 seed was transferred to our commercial inventory and named Grand Max in the spring of 1998. Grand Max was first sold on June 5, 1998. At no point prior had harvested material from the variety been sold or offered for sale. Fields of the F5 seed were evaluated in the lettuce production regions of Huron and Yuma where the variety

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was noted as uniform and stable, with out variants. The variety Grand Max has been uniform and stable for 2 generations.

Additional increases of the variety have been made in 2001 and 2002. Seed from all production years has been evaluated as uniform and stable with no variants other than those within commercially acceptable level.

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**Exhibit A Amendment:**

As evaluated in commercial trials and seed production fields, the variety Grand Max has been uniform and stable with no observed variants for 2 generations.

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**Exhibit B Revision**
**Statement of Distinctness**

Grand Max is a strong heading tip burn tolerant iceberg lettuce variety developed for the fall plantings of the Huron California and Yuma Arizona lettuce production regions. This variety is extremely uniform and large heading and framed providing an excellent option for growers that plant the commercial variety Raider. Grand Max being 1 to 2 days later maturing than Raider, allows growers to split plantings between the 2 varieties and increase the their harvest options.

Grand Max is most similar to the commercial variety Raider. Grand Max is distinguished from Raider as it consistently demonstrates larger size as indicated by 4 quantitative traits. In repeated trials, Grand Max has proven to have a larger head diameter, a longer head length, a heavier head weight, and a larger frame diameter. This data is supported statistically, at a minimum 95% confidence level in 4 repeated trials.

Grand Max is larger heading than Raider, as indicated by the 4 heading measurements to follow.

1. Grand Max has a larger head diameter. This measurement is made perpendicular to the core at the widest part of the sliced head. This data is statistically significant in 4 repeated trials, with a minimum confidence level of 96%.
2. Grand Max has a longer head length. This measurement is made vertically from the base of the core to the top of the sliced head. This data is statistically significant in 4 repeated trials, with a minimum confidence level of 96%.
3. Grand Max has a larger frame diameter. This measurement is made horizontally across the top of the growing lettuce plant at widest point of leaf margins. This data is statistically significant in 4 repeated trials, with a minimum confidence level of 97%.
4. Grand Max produces a heavier head than Raider. This weight is representative of a harvested head of lettuce trimmed to market specs. This data is statistically significant in 4 repeated trials, with a minimum confidence level of 97%.

In addition to the above mentioned distinctions, further distinctness is evident by observation of the 4 trials comparing Grand Max and Raider.

Grand Max is distinct from the variety Raider in color. In the 4 trials evaluated Grand Max had a color reading of 5GY5/6 and Raider a reading of 5GY 6/6 when using the Munsell Book of Color for Plant Tissue.

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**Exhibit B Addendum:**

Additional differences of the varieties Grand Max and Raider:

1. Shape of the 4th leaf:
   Grand Max: Elongated
   Raider: Oval

2. The Butt Shape:
   Grand Max: Rounded
   Raider: Flat

3. Bolter Leaf Shape:
   Grand Max: Dentate
   Raider: Entire

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Grand Max is typically 1 to 2 days later maturing than Raider.

In addition, observation of the leaf margin distinguishes the varieties as well. Where as the Leaf Margin of Raider is somewhat undulating, the leaf margin of Grand Max is much more jagged.

Grand Max also resembles its male parent Tres Equis. Grand Max is distinguished from Tres Equis as it consistently demonstrates larger size as indicated by 4 quantitative traits. In repeated trials, Grand Max has proven to have a larger head diameter, a longer head length, a heavier head weight, and a larger frame diameter. This data is supported statistically, at a minimum 95% confidence level in 4 repeated trials. Grand Max is also earlier maturing and lighter in color than Tres Equis.

Grand Max is larger heading than Tres Equis, as indicated by the 4 heading measurements to follow.

1. Grand Max has a larger head diameter. This measurement is made perpendicular to the core at the widest part of the sliced head. This data is statistically significant in 4 repeated trials, with a minimum confidence level of 95%.
2. Grand Max has a longer head length. This measurement is made vertically from the base of the core to the top of the sliced head. This data is statistically significant in 3 of the 4 repeated trials, with the following confidence levels: 99.4%, 80.2%, 99.8%, 99.9%. By pooling the data we see that over all this trait is a statistically significant difference at a 98.1% confidence level.
3. Grand Max has a larger frame diameter. This measurement is made horizontally across the top of the growing lettuce plant at widest point of leaf margins. This data is statistically significant in 4 repeated trials, with a minimum confidence level of 99.9%.
4. Grand Max produces a heavier head than Tres Equis . This weight is representative of a harvested head of lettuce trimmed to market specs. This data is statistically significant in 3 of the 4 repeated trials, with the following confidence levels: 99.1%, 99.9%, 91.6%, 99.9%. By pooling the data we see that over all, this trait is a statistically significant difference at a 99.8% confidence level.

In addition to the above mentioned distinctions, further distinctness is evident by observation of the 4 trials comparing Grand Max and Tres Equis.

Grand Max is distinct from the variety Tres Equis in color. In the 4 trials evaluated Grand Max had a color reading of 5GY5/6 and Tres Equis a reading of 5GY 4/6 when using the Munsell Book of Color for Plant Tissue.

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**Trial map #:** PD99016
**Wet Date:** 9/22/1999
**Date evald:** 12/5/1999

***PVP DATA:***
**Comparison of Head Characteristics**

**Location:** Yuma Valley **Ranch/lot** Hopper/2 **Commercial variety:** Fortuna
**Grower:** Salyer

| | **Maturity Date:** | **Color** |
|---|---|---|
| 1 Grand Max | 12/6/1999 | 5gy5/6 |
| 2 Tres Equis | 12/9/1999 | 5gy4/6 |

| | Core length (cm) | | Core diam. (cm) | | Head diam. (cm) | | Head length (cm) | | Avg Head Diameter (cm) | | Avg Head Diam:Core Length | | Frame diam (cm) | | Head wt. (g) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample # | Grand Max | Tres Equis | Grand Max | Tres Equis | Grand Max | Tres Equis | Grand Max | Tres Equis | Grand Max | Tres Equis | Grand Max | Tres Equis | Grand Max | Tres Equis | Grand Max | Tres Equis |
| 1 | 3.7 | 3.5 | 3.4 | 3.3 | 16.3 | 15.1 | 15.2 | 13.2 | 15.8 | 14.2 | 4.3 | 4.0 | 50 | 46 | 910 | 708 |
| 2 | 3.5 | 3.4 | 3.3 | 3.7 | 16.7 | 14.8 | 14.8 | 14.0 | 15.8 | 14.4 | 4.5 | 4.2 | 50 | 47 | 944 | 507 |
| 3 | 3.2 | 5.1 | 3.6 | 3.4 | 15.6 | 15.3 | 15.0 | 14.1 | 15.3 | 14.7 | 4.8 | 2.9 | 47 | 45 | 933 | 727 |
| 4 | 3.5 | 4.0 | 3.3 | 3.5 | 15.8 | 15.6 | 15.6 | 15.1 | 15.7 | 15.4 | 4.5 | 3.8 | 49 | 50 | 593 | 570 |
| 5 | 3.6 | 5.3 | 3.5 | 3.6 | 17.3 | 16.0 | 15.2 | 14.3 | 16.3 | 15.2 | 4.5 | 3.8 | 52 | 50 | 667 | 428 |
| 6 | 3.2 | 5.3 | 3.4 | 3.1 | 18.6 | 16.5 | 13.5 | 15.2 | 16.1 | 15.9 | 5.0 | 3.0 | 50 | 47 | 607 | 576 |
| 7 | 4.3 | 3.2 | 3.4 | 3.4 | 16.5 | 14.3 | 15.5 | 14.2 | 16.0 | 14.3 | 3.7 | 2.7 | 52 | 46 | 695 | 640 |
| 8 | 3.0 | 3.5 | 3.4 | 3.5 | 15.1 | 17.2 | 15.3 | 15.0 | 15.2 | 16.1 | 5.1 | 5.0 | 49 | 43 | 794 | 633 |
| 9 | 3.2 | 3.5 | 3.6 | 3.5 | 17.2 | 14.5 | 13.2 | 12.1 | 15.2 | 13.3 | 4.8 | 3.8 | 47 | 50 | 546 | 702 |
| 10 | 3.8 | 3.4 | 3.5 | 3.5 | 17.1 | 15.2 | 16.3 | 15.0 | 16.7 | 15.1 | 4.4 | 4.3 | 48 | 48 | 793 | 748 |
| 11 | 3.7 | 3.0 | 3.2 | 3.2 | 14.5 | 15.0 | 13.2 | 14.1 | 13.9 | 14.6 | 3.7 | 4.3 | 51 | 47 | 544 | 746 |
| 12 | 4.5 | 3.2 | 3.6 | 3.2 | 16.9 | 14.8 | 15.6 | 13.2 | 16.3 | 14.0 | 3.6 | 4.7 | 52 | 46 | 607 | 653 |
| 13 | 3.2 | 3.0 | 3.4 | 3.6 | 16.5 | 14.5 | 15.3 | 14.2 | 15.9 | 14.4 | 5.0 | 4.5 | 51 | 47 | 857 | 780 |
| 14 | 2.8 | 2.8 | 3.5 | 3.0 | 15.0 | 13.5 | 13.2 | 12.3 | 14.1 | 12.9 | 5.0 | 4.3 | 52 | 50 | 820 | 562 |
| 15 | 3.8 | 5.6 | 3.4 | 3.7 | 17.3 | 15.2 | 16.0 | 13.5 | 16.7 | 14.4 | 4.4 | 5.1 | 50 | 47 | 661 | 636 |
| 16 | 4.5 | 3.5 | 3.1 | 3.2 | 16.0 | 13.8 | 15.2 | 12.0 | 15.6 | 12.9 | 3.5 | 2.3 | 48 | 46 | 1005 | 658 |
| 17 | 3.2 | 3.8 | 3.6 | 3.4 | 14.2 | 15.4 | 13.5 | 14.2 | 13.9 | 14.8 | 4.3 | 3.9 | 52 | 45 | 667 | 743 |
| 18 | 3.6 | 4.0 | 3.4 | 3.5 | 15.1 | 16.2 | 14.0 | 15.1 | 14.6 | 15.7 | 4.0 | 3.9 | 50 | 46 | 722 | 699 |
| 19 | 3.4 | 3.4 | 3.3 | 3.5 | 16.5 | 17.3 | 14.2 | 15.0 | 15.4 | 16.2 | 4.5 | 4.8 | 50 | 43 | 852 | 521 |
| 20 | 3.6 | 3.7 | 3.2 | 3.1 | 16.8 | 16.3 | 13.8 | 12.3 | 15.3 | 14.3 | 4.3 | 3.9 | 50 | 46 | 634 | 692 |
| 21 | 3.5 | 4.1 | 3.4 | 3.6 | 14.3 | 16.7 | 14.2 | 13.5 | 14.3 | 15.1 | 4.1 | 3.7 | 50 | 45 | 788 | 544 |
| 22 | 3.2 | 4.0 | 3.1 | 3.5 | 15.2 | 15.2 | 13.7 | 14.0 | 14.5 | 14.6 | 4.5 | 3.7 | 53 | 47 | 752 | 555 |
| 23 | 3.7 | 3.6 | 3.2 | 3.4 | 15.8 | 17.2 | 14.8 | 13.5 | 15.3 | 15.4 | 4.1 | 4.3 | 49 | 50 | 639 | 701 |
| 24 | 3.8 | 3.8 | 3.6 | 3.7 | 16.8 | 16.3 | 15.4 | 13.0 | 16.1 | 14.7 | 4.2 | 3.9 | 51 | 47 | 529 | 625 |
| Average | 3.6 | 3.8 | 3.4 | 3.4 | 16.1 | 15.5 | 14.7 | 13.8 | 15.4 | 14.7 | 4.4 | 3.9 | 50.1 | 46.8 | 731.6 | 639.8 |
| Stan dev | 0.4301794 | 0.7666864 | 0.1558055 | 0.1999547 | 1.09722146 | 1.0535568 | 0.9546131 | 0.9973062 | 0.837914942 | 0.874849884 | 0.447978835 | 0.696130487 | 1.6235361 | 2.0359095 | 137.581221 | 90.445395 |
| T test | 1.57E-01 | | 5.76E-01 | | 4.71E-02 | | 5.74E-03 | | 5.23E-03 | | 1.60E-02 | | 1.49E-07 | | 8.86E-03 | |
| %Confidence Level | 84.324204 | | 42.428912 | | 95.28534 | | 99.426496 | | 99.47669974 | | 98.39917383 | | 99.999985 | | 99.1139307 | |

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**Trial map #:** PD99017
**Wet Date:** 9/23/1999
**Date evald:** 12/7/1999

***PVP DATA:***
**Comparison of Head Characteristics**

**Location:** Bard
**Grower:** Top Flavor/T&A
**Ranch/lot** Kenley/11
**Commercial variety:** Annie

**Maturity Date:** **color**
1 Grand Max 12/6/1999 5gy 4/6
2 Tres Equis 12/9/1999 5gy 4/6

| | Core length (cm) | | Core diam. (cm) | | Head diam. (cm) | | Head length (cm) | | Avg Head Diameter (cm) | | Avg Head Diam:Core Length | | Frame diam (cm) | | Head wt. (g) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample # | Grand Max | Tres Equis | Grand Max | Tres Equis | Grand Max | Tres Equis | Grand Max | Tres Equis | Grand Max | Tres Equis | Grand Max | Tres Equis | Grand Max | Tres Equis | Grand Max | Tres Equis |
| 1 | 4.5 | 3.3 | 3.5 | 3.2 | 14.6 | 14.1 | 13.2 | 14.0 | 13.9 | 14.1 | 3.1 | 4.3 | 54 | 45 | 709 | 516 |
| 2 | 3.5 | 4.1 | 3.4 | 3.1 | 15.5 | 13.2 | 13.3 | 13.2 | 14.4 | 13.2 | 4.1 | 3.2 | 52 | 50 | 764 | 652 |
| 3 | 5.2 | 4.7 | 3.8 | 3.3 | 14.3 | 14.5 | 13.6 | 13.7 | 14.0 | 14.1 | 2.7 | 3.0 | 50 | 47 | 614 | 647 |
| 4 | 3.4 | 4.1 | 3.6 | 3.3 | 15.2 | 12.5 | 13.0 | 14.2 | 14.1 | 13.4 | 4.1 | 3.3 | 48 | 52 | 718 | 623 |
| 5 | 3.0 | 4.9 | 3.5 | 3.5 | 15.2 | 13.2 | 12.6 | 14.6 | 13.9 | 13.9 | 4.6 | 3.4 | 49 | 47 | 657 | 617 |
| 6 | 4.5 | 5.6 | 3.6 | 3.2 | 16.5 | 16.0 | 14.5 | 13.5 | 15.5 | 14.8 | 3.4 | 3.0 | 50 | 50 | 689 | 709 |
| 7 | 3.0 | 3.0 | 3.7 | 3.4 | 16.1 | 13.5 | 12.8 | 12.8 | 14.5 | 13.2 | 4.8 | 2.3 | 50 | 46 | 873 | 724 |
| 8 | 2.6 | 3.7 | 3.8 | 3.5 | 13.2 | 15.5 | 12.1 | 14.8 | 12.7 | 15.2 | 4.9 | 5.1 | 51 | 48 | 752 | 686 |
| 9 | 3.6 | 6.3 | 3.5 | 3.2 | 15.2 | 13.2 | 15.5 | 14.1 | 15.4 | 13.7 | 4.3 | 3.7 | 52 | 49 | 893 | 723 |
| 10 | 4.3 | 4.2 | 3.6 | 3.0 | 16.2 | 15.1 | 14.3 | 14.0 | 15.3 | 14.6 | 3.5 | 2.3 | 51 | 49 | 681 | 540 |
| 11 | 3.8 | 4.3 | 3.4 | 3.6 | 15.0 | 14.2 | 14.2 | 13.8 | 14.6 | 14.0 | 3.8 | 3.3 | 48 | 43 | 694 | 523 |
| 12 | 2.8 | 4.6 | 3.5 | 3.5 | 13.8 | 15.0 | 12.2 | 14.2 | 13.0 | 14.6 | 4.6 | 3.4 | 50 | 46 | 824 | 827 |
| 13 | 3.5 | 5.1 | 3.8 | 3.3 | 15.2 | 14.1 | 14.3 | 13.2 | 14.8 | 13.7 | 4.2 | 3.0 | 52 | 47 | 765 | 620 |
| 14 | 4.9 | 6.5 | 4.0 | 3.1 | 14.9 | 13.6 | 14.6 | 11.2 | 14.8 | 12.4 | 3.0 | 2.4 | 47 | 50 | 768 | 577 |
| 15 | 4.3 | 2.8 | 3.3 | 3.1 | 16.2 | 13.5 | 15.0 | 11.8 | 15.6 | 12.7 | 3.6 | 1.9 | 51 | 47 | 830 | 697 |
| 16 | 4.3 | 4.3 | 3.6 | 3.4 | 15.2 | 15.0 | 14.5 | 14.1 | 14.9 | 14.6 | 3.5 | 5.2 | 50 | 46 | 681 | 583 |
| 17 | 3.0 | 6.7 | 3.4 | 3.2 | 13.5 | 13.5 | 12.8 | 12.5 | 13.2 | 13.0 | 4.4 | 1.9 | 50 | 48 | 711 | 560 |
| 18 | 3.1 | 3.8 | 3.7 | 3.0 | 16.2 | 13.2 | 15.1 | 13.0 | 15.7 | 13.1 | 5.0 | 3.4 | 50 | 47 | 680 | 638 |
| 19 | 3.3 | 3.6 | 3.0 | 3.7 | 15.6 | 15.3 | 15.0 | 14.1 | 15.3 | 14.7 | 4.6 | 4.1 | 53 | 48 | 624 | 763 |
| 20 | 3.6 | 4.0 | 3.5 | 3.5 | 15.3 | 14.2 | 14.1 | 13.5 | 14.7 | 13.9 | 4.1 | 3.5 | 49 | 45 | 689 | 723 |
| 21 | 4.0 | 3.5 | 3.6 | 3.2 | 16.2 | 15.0 | 14.3 | 13.6 | 15.3 | 14.3 | 3.8 | 4.1 | 51 | 47 | 633 | 652 |
| 22 | 3.8 | 3.4 | 3.6 | 3.3 | 14.7 | 12.8 | 14.0 | 11.2 | 14.4 | 12.0 | 3.8 | 3.5 | 50 | 49 | 854 | 698 |
| 23 | 3.6 | 4.2 | 3.4 | 3.1 | 15.0 | 13.5 | 14.3 | 12.3 | 14.7 | 12.9 | 4.1 | 3.1 | 52 | 51 | 745 | 524 |
| 24 | 3.5 | 3.9 | 3.9 | 3.4 | 13.5 | 14.2 | 12.3 | 15.0 | 12.9 | 14.6 | 3.7 | 3.7 | 47 | 50 | 659 | 666 |
| Average | 3.7 | 4.4 | 3.6 | 3.3 | 15.1 | 14.1 | 13.8 | 13.4 | 14.5 | 13.8 | 4.0 | 3.3 | 50.3 | 47.8 | 729.5 | 645.3 |
| Stan dev | 0.6726408 | 1.0487743 | 0.2115762 | 0.189918 | 0.92852345 | 0.9278208 | 0.9954971 | 1.0336372 | 0.873935688 | 0.829917819 | 0.616729398 | 0.831547861 | 1.7564581 | 2.1260121 | 78.8873601 | 81.324186 |
| T test | 1.45E-02 | | 2.10E-05 | | 4.31E-04 | | 1.97E-01 | | 6.60E-03 | | 3.29E-03 | | 5.58E-05 | | 6.94E-04 | |
| %Confidence Level | 98.545039 | | 99.997898 | | 99.9569198 | | 80.283237 | | 99.33978741 | | 99.67054692 | | 99.994424 | | 99.9306344 | |

9

990036

10

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Trial map #:** | RSJV00051 | **Location:** | Tres Picos | **Ranch/lot:** | 35-4-4 | **Date evald:** | 11/3/2000 |
| **Wet Date:** | 8/28/2000 | **Grower:** | T&A | **Commercia** | Raider | **Eval by:** | nd/ac/dg |

| | **Maturity** | **Color** |
|---|---|---|
| Grand Max | 11/1/2003 | 5gy5/6 |
| Tres Equis | 11/5/2003 | 5gy4/6 |

| | Core length (cm) | | Core diam. (cm) | | Head diam. (mm) | | Head length (mm) | | Avg Head Diameter (mm) | | Avg Head Diam:Core Length | | Frame diam (cm) | | Head wt. (g) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample # | Tres Equis | Grandmax | Tres Equis | Grandmax | Tres Equis | Grandmax | Tres Equis | Grandmax | Tres Equis | Grandmax | Tres Equis | Grandmax | Tres Equis | Grandmax | Tres Equis | Grandmax |
| 1 | 56.0 | 65.0 | 39.0 | 37.0 | 160.0 | 160.0 | 161.0 | 174.0 | 160.5 | 167.0 | 2.9 | 2.6 | 46 | 51 | 721 | 834 |
| 2 | 45.0 | 72.0 | 31.0 | 40.0 | 168.0 | 174.0 | 150.0 | 184.0 | 159.0 | 179.0 | 3.5 | 2.5 | 46 | 52 | 976 | 762 |
| 3 | 31.0 | 52.0 | 34.0 | 40.0 | 152.0 | 175.0 | 142.0 | 160.0 | 147.0 | 167.5 | 4.7 | 3.2 | 44 | 50 | 737 | 992 |
| 4 | 45.0 | 61.0 | 39.0 | 39.0 | 169.0 | 164.0 | 182.0 | 169.0 | 175.5 | 166.5 | 3.9 | 2.7 | 44 | 50 | 842 | 774 |
| 5 | 35.0 | 52.0 | 33.0 | 42.0 | 166.0 | 181.0 | 160.0 | 155.0 | 163.0 | 168.0 | 4.7 | 2.8 | 45 | 47 | 812 | 890 |
| 6 | 52.0 | 44.0 | 35.0 | 40.0 | 164.0 | 174.0 | 152.0 | 170.0 | 158.0 | 172.0 | 3.0 | 3.3 | 45 | 52 | 910 | 1069 |
| 7 | 55.0 | 41.0 | 35.0 | 42.0 | 159.0 | 160.0 | 160.0 | 167.0 | 159.5 | 163.5 | 2.9 | 3.7 | 49 | 50 | 673 | 980 |
| 8 | 60.0 | 48.0 | 40.0 | 40.0 | 156.0 | 172.0 | 166.0 | 169.0 | 161.0 | 170.5 | 2.7 | 4.2 | 46 | 50 | 827 | 848 |
| 9 | 42.0 | 59.0 | 37.0 | 37.0 | 166.0 | 160.0 | 145.0 | 158.0 | 155.5 | 159.0 | 3.7 | 3.3 | 46 | 51 | 805 | 701 |
| 10 | 47.0 | 42.0 | 32.0 | 39.0 | 165.0 | 160.0 | 147.0 | 169.0 | 156.0 | 164.5 | 3.3 | 2.8 | 47 | 50 | 918 | 729 |
| 11 | 54.0 | 49.0 | 32.0 | 41.0 | 166.0 | 174.0 | 162.0 | 172.0 | 164.0 | 173.0 | 3.0 | 4.1 | 48 | 50 | 799 | 791 |
| 12 | 61.0 | 44.0 | 37.0 | 40.0 | 169.0 | 162.0 | 153.0 | 165.0 | 161.0 | 163.5 | 2.6 | 3.3 | 51 | 48 | 940 | 927 |
| 13 | 42.0 | 50.0 | 38.0 | 36.0 | 197.0 | 172.0 | 150.0 | 176.0 | 173.5 | 174.0 | 4.1 | 4.0 | 49 | 49 | 946 | 855 |
| 14 | 55.0 | 45.0 | 44.0 | 35.0 | 152.0 | 174.0 | 157.0 | 160.0 | 154.5 | 167.0 | 2.8 | 3.3 | 48 | 47 | 733 | 736 |
| 15 | 65.0 | 40.0 | 40.0 | 37.0 | 153.0 | 159.0 | 160.0 | 170.0 | 156.5 | 164.5 | 2.4 | 3.7 | 41 | 48 | 1016 | 1140 |
| 16 | 52.0 | 50.0 | 35.0 | 39.0 | 151.0 | 155.0 | 141.0 | 159.0 | 146.0 | 157.0 | 2.8 | 3.9 | 49 | 49 | 785 | 791 |
| 17 | 46.0 | 54.0 | 32.0 | 39.0 | 166.0 | 194.0 | 162.0 | 161.0 | 164.0 | 177.5 | 3.6 | 3.3 | 47 | 51 | 698 | 1344 |
| 18 | 55.0 | 32.0 | 30.0 | 38.0 | 154.0 | 164.0 | 152.0 | 142.0 | 153.0 | 153.0 | 2.8 | 4.8 | 49 | 49 | 826 | 980 |
| 19 | 56.0 | 35.0 | 39.0 | 39.0 | 158.0 | 156.0 | 157.0 | 152.0 | 157.5 | 154.0 | 2.8 | 4.4 | 48 | 49 | 812 | 1018 |
| 20 | 42.0 | 42.0 | 35.0 | 40.0 | 169.0 | 169.0 | 142.0 | 155.0 | 155.5 | 162.0 | 3.7 | 3.9 | 49 | 52 | 936 | 959 |
| 21 | 62.0 | 36.0 | 35.0 | 39.0 | 176.0 | 165.0 | 155.0 | 152.0 | 165.5 | 158.5 | 2.7 | 4.4 | 49 | 51 | 998 | 877 |
| 22 | 54.0 | 39.0 | 32.0 | 39.0 | 154.0 | 176.0 | 161.0 | 162.0 | 157.5 | 169.0 | 2.9 | 4.3 | 50 | 47 | 858 | 988 |
| 23 | 55.0 | 55.0 | 39.0 | 41.0 | 158.0 | 164.0 | 152.0 | 165.0 | 155.0 | 164.5 | 2.8 | 3.0 | 46 | 49 | 826 | 858 |
| 24 | 62.0 | 62.0 | 35.0 | 40.0 | 155.0 | 187.0 | 155.0 | 164.0 | 155.0 | 175.5 | 2.5 | 2.8 | 46 | 50 | 789 | 860 |
| Average | 51.2 | 48.7 | 35.8 | 39.1 | 162.6 | 168.8 | 155.2 | 163.8 | 158.9 | 166.3 | 3.2 | 3.5 | 47.0 | 49.7 | 841.0 | 904.3 |
| Stan dev | 8.757502 | 10.088647 | 3.4922274 | 1.7523276 | 10.0685153 | 9.8333026 | 9.044175 | 9.0996894 | 6.74855728 | 6.950100354 | 0.649840751 | 0.654967268 | 2.284161 | 1.522774 | 95.805727 | 147.07214 |
| T test | 3.64E-01 | | 1.10E-04 | | 3.71E-02 | | 2.00E-03 | | 5.25E-04 | | 1.12E-01 | | 1.97E-05 | | 8.37E-02 | |
| %Confidence Level | 63.595193 | | 99.989049 | | 96.2866781 | | 99.800239 | | 99.9474952 | | 88.76776692 | | 99.998035 | | 91.6250044 | |

990030

**Trial map #:** YM00025 **Location:** Yuma Valle **Ranch/lot:** Huber 5 **Date evald:** 12/6/2000
**Wet Date:** 9/20/2000 **Grower:** Mission Rar **Commercia** Raider **Eval by:** dg/jt

| | Maturity | Color |
|---|---|---|
| Grand Max | 12/5/2000 | 5gy5/6 |
| Tres Equis | 12/9/2000 | 5gy4/6 |

| | Core length (cm) | | Core diam. (cm) | | Head diam. (mm) | | Head length (mm) | | Avg Head Diameter (mm) | | Avg Head Diam:Core Length | | Frame diam (cm) | | Head wt. (g) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample # | Tres Equis | Grand max | Tres Equis | Grand max | Tres Equis | Grand max | Tres Equis | Grand max | Tres Equis | Grand max | Tres Equis | Grand max | Tres Equis | Grand max | Tres Equis | Grand max |
| 1 | 30.0 | 30.0 | 32.0 | 32.0 | 121.0 | 144.0 | 120.0 | 140.0 | 120.5 | 142.0 | 4.0 | 4.7 | 42 | 44 | 777 | 728 |
| 2 | 27.0 | 35.0 | 37.0 | 35.0 | 130.0 | 160.0 | 125.0 | 160.0 | 127.5 | 160.0 | 4.7 | 4.6 | 41 | 45 | 534 | 879 |
| 3 | 23.0 | 22.0 | 41.0 | 35.0 | 135.0 | 145.0 | 122.0 | 132.0 | 128.5 | 138.5 | 5.6 | 6.3 | 44 | 44 | 657 | 797 |
| 4 | 28.0 | 40.0 | 40.0 | 40.0 | 140.0 | 170.0 | 135.0 | 160.0 | 137.5 | 165.0 | 4.9 | 4.1 | 42 | 44 | 505 | 689 |
| 5 | 20.0 | 25.0 | 30.0 | 35.0 | 150.0 | 140.0 | 140.0 | 147.0 | 145.0 | 143.5 | 7.3 | 3.6 | 44 | 46 | 720 | 859 |
| 6 | 32.0 | 32.0 | 33.0 | 35.0 | 145.0 | 130.0 | 154.0 | 150.0 | 149.5 | 140.0 | 4.7 | 5.6 | 41 | 43 | 605 | 823 |
| 7 | 40.0 | 26.0 | 30.0 | 35.0 | 138.0 | 141.0 | 140.0 | 152.0 | 139.0 | 146.5 | 3.5 | 4.6 | 45 | 47 | 412 | 745 |
| 8 | 25.0 | 38.0 | 35.0 | 34.0 | 125.0 | 141.0 | 125.0 | 146.0 | 125.0 | 143.5 | 5.0 | 5.5 | 42 | 44 | 719 | 948 |
| 9 | 15.0 | 32.0 | 35.0 | 33.0 | 120.0 | 165.0 | 115.0 | 155.0 | 117.5 | 160.0 | 7.8 | 4.2 | 43 | 46 | 622 | 903 |
| 10 | 128.0 | 26.0 | 32.0 | 35.0 | 124.0 | 155.0 | 134.0 | 140.0 | 129.0 | 147.5 | 1.0 | 4.6 | 42 | 43 | 535 | 543 |
| 11 | 26.0 | 30.0 | 28.0 | 31.0 | 135.0 | 150.0 | 125.0 | 136.0 | 130.0 | 143.0 | 5.0 | 5.5 | 43 | 45 | 536 | 789 |
| 12 | 22.0 | 26.0 | 33.0 | 28.0 | 150.0 | 132.0 | 140.0 | 137.0 | 145.0 | 134.5 | 6.6 | 4.5 | 46 | 44 | 720 | 650 |
| 13 | 20.0 | 20.0 | 35.0 | 35.0 | 140.0 | 132.0 | 132.0 | 141.0 | 136.0 | 136.5 | 6.8 | 5.3 | 45 | 44 | 548 | 719 |
| 14 | 25.0 | 28.0 | 33.0 | 35.0 | 132.0 | 160.0 | 134.0 | 140.0 | 133.0 | 150.0 | 5.3 | 7.5 | 42 | 43 | 595 | 700 |
| 15 | 26.0 | 27.0 | 31.0 | 36.0 | 159.0 | 135.0 | 135.0 | 160.0 | 147.0 | 147.5 | 5.7 | 5.3 | 43 | 50 | 489 | 688 |
| 16 | 20.0 | 25.0 | 34.0 | 31.0 | 150.0 | 162.0 | 132.0 | 130.0 | 141.0 | 146.0 | 7.1 | 5.4 | 45 | 50 | 591 | 741 |
| 17 | 26.0 | 25.0 | 35.0 | 33.0 | 130.0 | 150.0 | 140.0 | 135.0 | 135.0 | 142.5 | 5.2 | 5.7 | 39 | 47 | 540 | 801 |
| 18 | 30.0 | 30.0 | 30.0 | 35.0 | 138.0 | 155.0 | 128.0 | 136.0 | 133.0 | 145.5 | 4.4 | 4.9 | 38 | 50 | 552 | 998 |
| 19 | 25.0 | 26.0 | 27.0 | 35.0 | 155.0 | 155.0 | 123.0 | 156.0 | 139.0 | 155.5 | 5.6 | 6.0 | 45 | 45 | 611 | 805 |
| 20 | 30.0 | 25.0 | 35.0 | 35.0 | 165.0 | 155.0 | 159.0 | 135.0 | 162.0 | 145.0 | 5.4 | 5.8 | 43 | 46 | 530 | 720 |
| 21 | 25.0 | 40.0 | 29.0 | 32.0 | 170.0 | 165.0 | 124.0 | 156.0 | 147.0 | 160.5 | 5.9 | 4.0 | 39 | 50 | 977 | 697 |
| 22 | 40.0 | 29.0 | 34.0 | 34.0 | 140.0 | 156.0 | 137.0 | 140.0 | 138.5 | 148.0 | 3.5 | 5.1 | 40 | 45 | 945 | 825 |
| 23 | 25.0 | 26.0 | 28.0 | 35.0 | 135.0 | 144.0 | 120.0 | 140.0 | 127.5 | 142.0 | 5.1 | 5.5 | 49 | 49 | 578 | 907 |
| 24 | 32.0 | 25.0 | 35.0 | 34.0 | 150.0 | 156.0 | 140.0 | 149.0 | 145.0 | 152.5 | 4.5 | 6.1 | 40 | 47 | 658 | 750 |
| Average | 30.8 | 28.7 | 33.0 | 34.1 | 140.7 | 149.9 | 132.5 | 144.7 | 136.6 | 147.3 | 5.2 | 5.2 | 42.6 | 45.9 | 623.2 | 779.3 |
| Stan dev | 21.487442 | 5.2640426 | 3.5508725 | 2.244155 | 13.3725194 | 11.41668 | 10.558241 | 9.4890288 | 10.20407705 | 7.969796926 | 1.42548581 | 0.862659678 | 2.5334716 | 2.3831382 | 134.045958 | 103.23492 |
| T test | 6.34E-01 | | 2.13E-01 | | 1.36E-02 | | 1.11E-04 | | 1.89E-04 | | 9.80E-01 | | 3.57E-05 | | 4.29E-05 | |
| %Confidence Level | 36.635408 | | 78.720615 | | 98.6376368 | | 99.988903 | | 99.98109842 | | 1.962634511 | | 99.996428 | | 99.995713 | |

990030

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
~~COMMODITIES SCIENTIFIC SUPPORT DIVISION~~

EXHIBIT C

# OBJECTIVE DESCRIPTION OF VARIETY
## LETTUCE *Lactuca sativa*

9900307

NAME OF APPLICANT (S)
PROGENY ADVANCED GENETICS, INC.

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)
1536 B MOFFETT STREET
SALINAS, CALIFORNIA 93905

FOR OFFICIAL USE ONLY
PVPO NUMBER

VARIETY NAME
Grand Max RAD 4/16/01

EXPERIMENTAL DESIGNATION

Place numbers in the boxes for the characters which best describe this variety. Measured data should be the mean of an appropriate number (at least 10) of well spaced plants. Royal Horticultural Society or any recognized color standard may be used to determine plant colors.

The location of the test area is: SALINAS VALLEY, CALIFORNIA

Color System Used: MUNSELL COLOR SYSTEM

1. PLANT TYPE: *(See list of suggested check varieties page 4.)*

[0 6]
01=Cutting/Leaf
02=Butterhead
03=Bibb
04=Cos or Romaine
05=Great Lakes Group
06=Vanguard Group
07=Imperial Group
08=Eastern (Ithaca) Group
09=Stem
10=Latin
11=OTHER

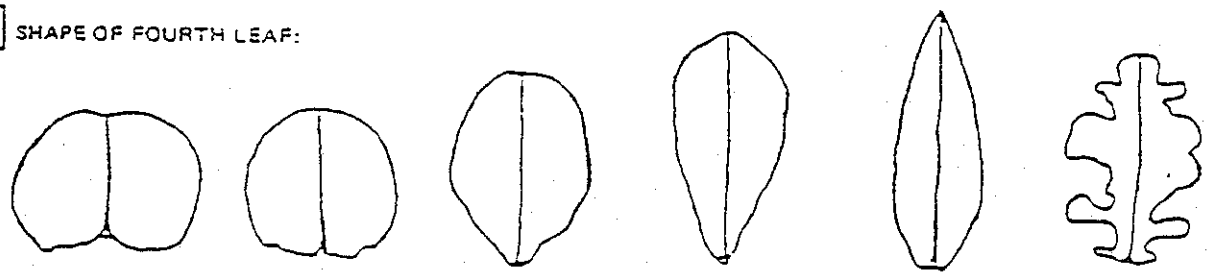
2. SEED:

| COLOR | LIGHT DORMANCY | HEAT DORMANCY |
|---|---|---|
| [2] 1=White (Silver Gray) 2=Black (Gray Brown) 3=Brown (Amber) | [2] 1=Light Required 2=Light Not Required | [1] 1=Susceptible 2=Not Susceptible |

3. COTYLEDON TO FOURTH LEAF STAGE: NOTE: Provide a color photograph or photocopy of the fourth leaf from 20 day old seedling grown under optimal conditions.

[2] SHAPE OF COTYLEDONS: 1=Broad 2=Intermediate 3=Spatulate

[4] SHAPE OF FOURTH LEAF:



1 2 3 4 5 6

[1 8] LENGTH/WIDTH INDEX OF FOURTH LEAF: L/W x 10

[3] APICAL MARGIN: / [3] BASAL MARGIN:
1=Entire
2=Crenate/Gnawed
3=Finely Dentate
4=Moderately Dentate
5=Coarsely Dentate
6=Incised
7=Lobed
8=OTHER *(specify)*

[1] UNDULATION: 1=Flat 2=Slight 3=Medium 4=Marked

[3] GREEN COLOR: 1=Yellow Green 2=Light Green 3=Medium Green 4=Dark Green 5=Blue Green 6=Silver Green 7=Gray Green

ANTHOCYANIN:

[1] DISTRIBUTION: 1=Absent 2=Margin Only 3=Spotted 4=Throughout 5=OTHER *(specify)*

[0] CONCENTRATION: 1=Light 2=Moderate 3=Intense

[1] ROLLING: 1=Absent 2=Present

[1] CUPPING: 1=Uncupped 2=Slight 3=Markedly

[1] REFLEXING: 1=None 2=Apical Margin 3=Lateral Margins

FORM LS-470-1 (9-86) *Formerly Form GR-470-1 which is obsolete*

9900307

**MATURE LEAVES** *(observe harvest-mature outer leaves)*:

**NOTE:** Provide color photo of harvest-mature leaves which accurately shows color and margin characteristics.

**MARGIN:**

| | | | | |
|---|---|---|---|---|
| 2 | INCISION DEPTH: *(deepest penetration of the margin)* | 1=Absent/Shallow (Dark Green Boston) | 2=Moderate (Vanguard) | 3=Deep (Great Lakes 659) |
| 4 | INDENTATION: *(finest divisions of the margin)* | 1=Entire (Dark Green Boston)<br>2=Shallowly Dentate (Great Lakes 65) | 3=Deeply Dentate (Great Lakes 659)<br>4=Crenate (Vanguard) | 5=OTHER *(specify)* |
| 2 | UNDULATION OF THE APICAL MARGIN: | 1=Absent/Slight (Dark Green Boston) | 2=Moderate (Vanguard) | 3=Strong (Great Lakes 659) |
| 4 | GREEN COLOR: | 1=Very Light Green (Bibb)<br>2=Light Green (Minetto) | 3=Medium Green (Great Lakes)<br>4=Dark Green (Vanguard) | 5=Very Dark Green<br>6=OTHER |

**ANTHOCYANIN** *(grown at or below 10 C)*:

| | | | | |
|---|---|---|---|---|
| 1 | DISTRIBUTION: | 1=Absent<br>2=Margin Only (Big Boston) | 3=Spotted (Calif. Cream Butter)<br>4=Throughout (Prize Head) | 5=OTHER *(specify)* |
| 0 | CONCENTRATION: | 1=Light (Iceberg) | 2=Moderate (Prize Head) | 3=Intense (Ruby) |
| 2 | SIZE: | 1=Small | 2=Medium | 3=Large |
| 2 | GLOSSINESS: | 1=Dull (Vanguard) | 2=Moderate (Salinas) | 3=Glossy (Great Lakes) |
| 3 | BLISTERING: | 1=Absent/Slight (Salinas) | 2=Moderate (Vanguard) | 3=Strong (Prize Head) |
| 3 | LEAF THICKNESS: | 1=Thin | 2=Intermediate | 3=Thick |
| 1 | TRICHOMES: | 1=Absent (smooth) | 2=Present (spiny) | |

**PLANT** *(at market stage. Choose a comparison variety appropriate for this type.)*:

49 SPREAD OF FRAME LEAVES: cm This Variety 46 cm RAIDER *(specify comparison variety)*

16 HEAD DIAMETER *(market trimmed with single cap leaf)*: cm This Variety 15 cm RAIDER *(specify comparison variety)*

| | | | | |
|---|---|---|---|---|
| 3 | HEAD SHAPE: | 1=Flattened<br>2=Slightly Flattened | 3=Spherical<br>4=Elongate | 5=Non-Heading<br>6=OTHER |
| 2 | HEAD SIZE CLASS: | 1=Small | 2=Medium | 3=Large |

24 HEAD COUNT PER CARTON

786 HEAD WEIGHT: g This Variety 706 g RAIDER *(specify comparison variety)*

| | | | |
|---|---|---|---|
| 3 | HEAD FIRMNESS: | 1=Loose<br>2=Moderate | 3=Firm<br>4=Very Firm |

**BUTT** *(bottom of market-trimmed head)*:

| | | | | |
|---|---|---|---|---|
| 3 | SHAPE: | 1=Slightly Concave | 2=Flat | 3=Rounded |
| 2 | MIDRIB: | 1=Flattened (Salinas) | 2=Moderately Raised | 3=Prominently Raised (Great Lakes 659) |

**CORE** *(stem of market-trimmed head)*:

36 mm Diameter at base of head

4.4 Ratio of head diameter/core diameter

37 Core height from base of head to apex: mm This Variety 39 mm RAIDER *(specify comparison variety)*

**BOLTING** *(Give First Water Date* 5/6/98 *)*: NOTE: First Water Date is the date seed first receives adequate moisture to germinate. This can and often does equal the planting date.

69 Number of days from First Water Date to seed stalk emergence *(summer conditions)*: This Variety 72 RAIDER *(specify comparison variety)*

| | | | | |
|---|---|---|---|---|
| 3 | BOLTING CLASS: | 1=Very Slow<br>2=Slow | 3=Medium<br>4=Rapid | 5=Very Rapid |

107 Height of mature seed stalk: cm This Variety 103 cm RAIDER *(specify comparison variety)*

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9900307

Spread of Bolter Plant *(at widest point)*:

[4 8] cm This Variety [5 0] cm RAIDER *(specify comparison variety)*

| | | | | |
|---|---|---|---|---|
| [2] | BOLTER LEAVES: | 1=Straight | 2=Curved | |
| [2] | MARGIN: | 1=Entire | 2=Dentate | |
| [2] | COLOR: | 1=Light Green | 2=Medium Green | 3=Dark Green |
| | BOLTER HABIT: | | | |
| [2] | TERMINAL INFLORESCENCE: | 1=Absent | 2=Present | |
| [2] | LATERAL SHOOTS: *(above head)* | 1=Absent | 2=Present | |
| [2] | BASAL SIDE SHOOTS: | 1=Absent | 2=Present | |

9. MATURITY *(earliness of harvest-mature head formation)*:

NOTE: Complete this section for at least one season.

| SEASON | Applic. 1/ #of days | Check 1/ #of days | CHECK VARIETY 2/ |
|---|---|---|---|
| Spring | | | |
| Summer | | | |
| Fall | 75 | 76 | RAIDER |
| Winter | | | |

Give planting date(s), and location(s):

Spring

Summer 6/20-7/20 SALINAS VALLEY, CALIFORNIA

Fall 8/20-9/05 HURON, CALIFORNIA. 9/12-9/27 YUMA, ARIZONA

Winter

1/ First water date to harvest. 2/ Fill in check variety name on the appropriate line.

10. ADAPTATION:

PRIMARY REGIONS OF ADAPTION *(tested and proven adapted)*: (0=Not tested 1=Not Adapted 2=Adapted)

[2] Southwest *(Calif., Ariz. desert)* [2] West Coast [ ] Northeast

[ ] Northcentral [ ] Southeast [ ] OTHER

SEASON:

[ ] Spring (area )

[2] Fall (area HURON, CA. YUMA, AZ.)

[2] Summer (area SALINAS VALLEY, CA)

[ ] Winter (area )

| | | | | |
|---|---|---|---|---|
| [0] | GREENHOUSE: | 0=Not tested | 1=Not Adapted | 2=Adapted |
| [3] | SOIL TYPE: | 1=Mineral | 2=Organic | 3=Both |

FORM LS-470-1 (9-86)



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11. DISEASES AND STRESS REACTIONS (0=Not tested; 1=Susceptible; 2=Intermediate; 3=Resistant; 4=Highly resistant; 5=Tolerant) 990307

**VIRUS**

- [1] Big Vein
- [1] Lattuce Mosaic
- [1] Cucumber Mosaic
- [0] Broad Bean Wilt
- [0] Turnip Mosaic
- [0] Beet Western Yellows
- [0] Lett. Infectious Yellows
- [ ] Other Virus _____

**FUNGAL/BACTERIAL**

- [1] Corky Root Rot (Pythium Root Rot)
- [0] Downy Mildew (Races _____ )
- [0] Powdery Mildew
- [0] Sclerotinia Rot
- [0] Bacterial Soft Rot (Pseudomonas spp. & others)
- [0] Botrytis (Gray Mold)
- [ ] OTHER _____

**INSECTS**

- [0] Cabbage Loopers
- [0] Root Aphids
- [0] Green Peach Aphid
- [ ] Other Insect _____

**PHYSIOLOGICAL/STRESS**

- [5] Tipburn
- [5] Heat
- [1] Drought
- [1] Cold
- [0] Salt
- [0] Brown Rib (Rib Discoloration, Rib Blight)
- [ ] OTHER _____

**POST HARVEST**

- [0] Pink Rib
- [0] Russet Spotting
- [0] Rusty Brown Discoloration
- [0] Internal Rib Necrosis (Blackheart, Gray Rib, Gray Streak)
- [0] Brown Stain

12. BIOCHEMICAL OR ELECTROPHORETIC MARKERS:

13. COMMENTS:

SUGGESTED CHECK VARIETIES

| TYPE | CHECK VARIETY |
|---|---|
| 1) CUTTING/LEAF | SALAD BOWL |
| 2) BUTTERHEAD | DARK GREEN BOSTON |
| 3) BIBB | BIBB |
| 4) COS, OR ROMAINE | PARRIS ISLAND |
| 5) GREAT LAKES GROUP | GREAT LAKES 659-700 |
| 6) VANGUARD GROUP | VANGUARD |
| 7) IMPERIAL GROUP | VIVA |
| 8) EASTERN GROUP | ITHACA |
| 9) STEM | CELTUCE |
| 10) LATIN | MATCHLESS |

GRAND MAX

9900307

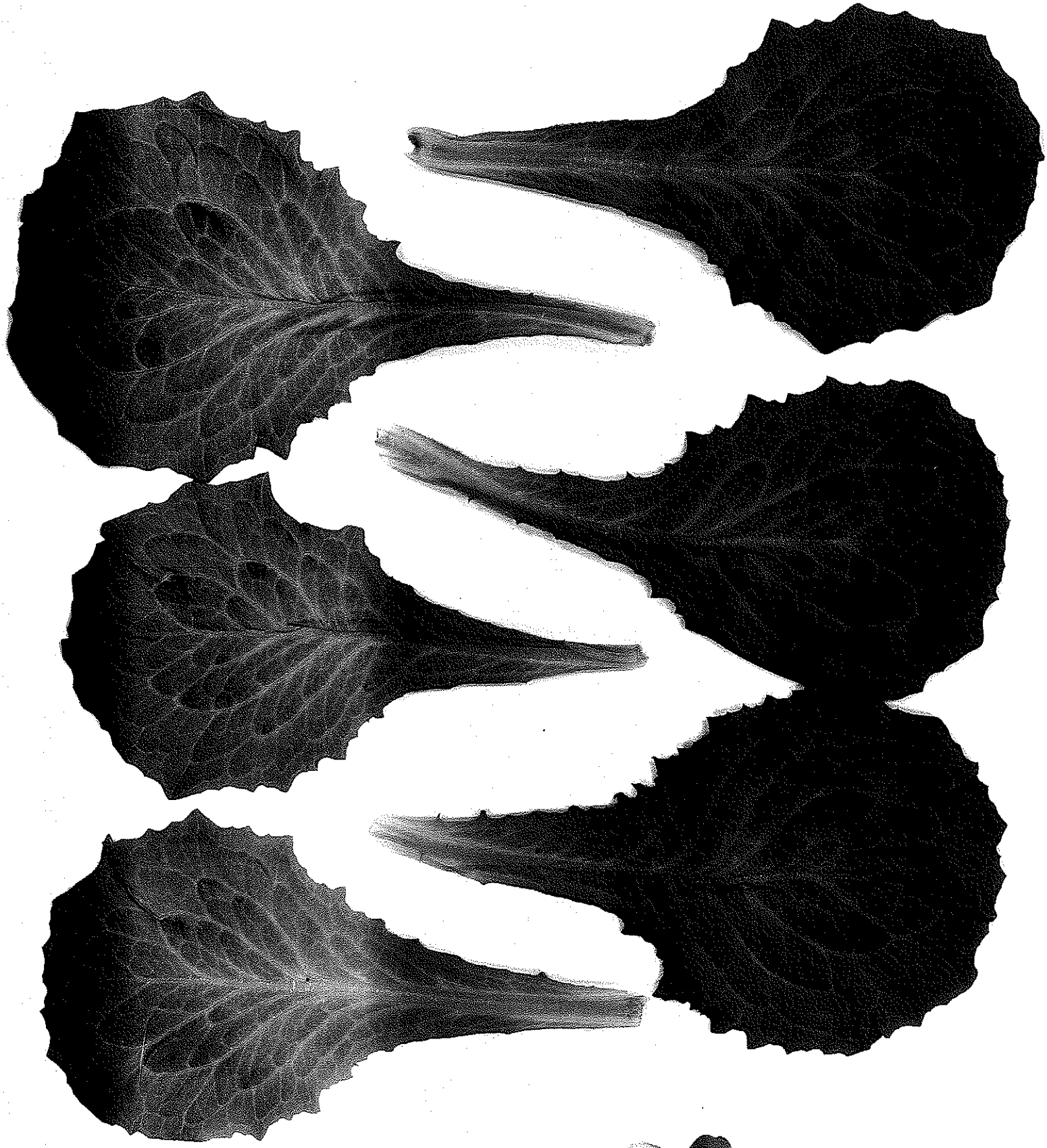

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EXHIBIT D

Additional Description of the Variety

PX 634 B is a heavily savoyed iceberg type. It has a dark green color and is an exceptionally good header, with improved texture. This variety has a very appealing butt appearance due to its color and large core diameter.

ExhibitD
5/14 /99//DG

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Grand Max is typically 3 to 5 days earlier maturing than the variety Tres Equis.

Grand Max can be planted earlier in the planting slot than Tres Equis.

Grand Max differs from the variety Red Coach 82 by the following traits:

1. Adaptability:
    a. Grand Max is adapted to more heat intense growing conditions. Specifically, Grand Max is planted in the Yuma lettuce production region between the dates of September 12 and September 27, and harvested between November 27 and December 15, respectively.
    b. Red Coach 82, in contrast is planted from October 10 through October 22, in this same lettuce production region. The respective harvest dates are between December 28 and February 14.
    c. Red Coach 82 is planted and harvested during a much cooler growing period.
    d. Grand Max planted during this same time period would not produce a marketable head, as it would be extremely small, not meeting the size requirements.
    e. Red Coach 82 planted between September 12 and September 27, would not produce a marketable product. The plants would rarely head, or be extremely puffy and light. Core elongation, bolting, and tip burn would also prevent Red Coach 82 from producing a marketable product during this planting period.

2. As a result of the differences in adaptability and climactical growing conditions the number of days to maturity also distinguish the varieties.
    a. Grand Max averages 75 days from wet date to harvest.
    b. Red Coach 82 averages between 83 and 114 days to harvest.

Grand Max differs from the variety Mystic GL by the following traits:

1. Type:
    a. Mystic GL is classified as a Salinas Type Iceberg Lettuce
    b. Grand Max is classified as a Vanguard Type Iceberg Lettuce
2. Adaptability:
    a. Mystic GL is adapted to the Salinas Valley planting regions between the dates of February 1 and March 15. For April and May harvest.
    b. Grand Max is planted in the Yuma lettuce production region between the dates of September 12 and September 27, and harvested between November 27 and December 15, respectively.
    c. If Grand Max was to be planted in the planting period of February 1 to March 15 in Salinas, the heads would be extremely small and not marketable.

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d. If Mystic GL was planted in the Yuma lettuce production region between the dates of September 12 and September 27, the plants would be puffy and light and true head formation would not occur. Core elongation, bolting, and tip burn would also prevent Mystic GL from producing a marketable product.

Grand Max differs from the variety Hondo by the following traits:

1. Adaptability:
    a. Grand Max has consistently performed during the planting period as described in the application, where as it has produced market quality iceberg lettuce.
    b. Hondo, in contrast has recently been discontinued due to its inconsistent performance during this same planting period. Hondo has varied in size and maturity, and has problems with producing a marketable head due to its smaller and inconsistent size and problems with early bolting and tip burn.
2. Color:
    a. Hondo has a color reading of 5gy4/8. This reading was recorded in 2 trials in 2000, with wet dates of 8/28/00 and 9/27/00 in Huron and Yuma respectively.
    b. Grand Max has a color reading of 5gy 5/6, as measured in the same trials.
        i. Color readings are measured using the Munsell Color Chart for Plant tissues.

**Please see attached data tables:**

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**Trial map #:** PD99016
**Wet Date:** 9/22/1999
**Date evald:** 12/5/1999

***PVP DATA:***
**Comparison of Head Characteristics**

**Location:** Yuma Valley **Ranch/lot** Hopper/2
**Grower:** Salyer

**Commercial variety:** Fortuna

| | **Maturity Date:** | **Color** |
|---|---|---|
| 1 Grand Max | 12/6/1999 | 5gy5/6 |
| 2 Raider | 12/7/1999 | 5gy6/6 |

| | Core length (cm) | | Core diam. (cm) | | Head diam. (cm) | | Head length (cm) | | Avg Head Diameter (cm) | | Avg Head Diam:Core Length | | Frame diam (cm) | | Head wt. (g) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample # | Grand Max | Raider | Grand Max | Raider | Grand Max | Raider | Grand Max | Raider | Grand Max | Raider | Grand Max | Raider | Grand Max | Raider | Grand Max | Raider |
| 1 | 3.7 | 3.7 | 3.4 | 3.4 | 16.3 | 16.2 | 15.2 | 15.4 | 15.8 | 15.8 | 4.3 | 4.3 | 50 | 48 | 910 | 716 |
| 2 | 3.5 | 3.5 | 3.3 | 3.7 | 16.7 | 15.4 | 14.8 | 13.5 | 15.8 | 14.5 | 4.5 | 4.1 | 50 | 50 | 944 | 729 |
| 3 | 3.2 | 3.1 | 3.6 | 3.5 | 15.6 | 14.4 | 15.0 | 13.4 | 15.3 | 13.9 | 4.8 | 4.5 | 47 | 51 | 933 | 532 |
| 4 | 3.5 | 3.6 | 3.3 | 3.5 | 15.8 | 14.7 | 15.6 | 13.3 | 15.7 | 14.0 | 4.5 | 3.9 | 49 | 52 | 593 | 654 |
| 5 | 3.6 | 3.1 | 3.5 | 3.4 | 17.3 | 16.6 | 15.2 | 13.8 | 16.3 | 15.2 | 4.5 | 4.2 | 52 | 50 | 667 | 687 |
| 6 | 3.2 | 3.5 | 3.4 | 3.3 | 18.6 | 14.5 | 13.5 | 15.4 | 16.1 | 15.0 | 5.0 | 4.8 | 50 | 48 | 607 | 723 |
| 7 | 4.3 | 2.8 | 3.4 | 3.1 | 16.5 | 15.4 | 15.5 | 12.8 | 16.0 | 14.1 | 3.7 | 4.0 | 52 | 50 | 695 | 757 |
| 8 | 3.0 | 2.7 | 3.4 | 3.4 | 15.1 | 14.3 | 15.3 | 12.7 | 15.2 | 13.5 | 5.1 | 4.8 | 49 | 47 | 794 | 708 |
| 9 | 3.2 | 3.5 | 3.6 | 3.4 | 17.2 | 14.4 | 13.2 | 13.5 | 15.2 | 14.0 | 4.8 | 5.2 | 47 | 51 | 546 | 559 |
| 10 | 3.8 | 4.5 | 3.5 | 3.4 | 17.1 | 13.6 | 16.3 | 14.5 | 16.7 | 14.1 | 4.4 | 4.0 | 48 | 47 | 793 | 622 |
| 11 | 3.7 | 3.4 | 3.2 | 3.1 | 14.5 | 14.2 | 13.2 | 13.5 | 13.9 | 13.9 | 3.7 | 3.1 | 51 | 50 | 544 | 643 |
| 12 | 4.5 | 3.9 | 3.6 | 3.3 | 16.9 | 15.0 | 15.6 | 13.5 | 16.3 | 14.3 | 3.6 | 4.2 | 52 | 47 | 607 | 632 |
| 13 | 3.2 | 3.3 | 3.4 | 3.5 | 16.5 | 16.2 | 15.3 | 13.3 | 15.9 | 14.8 | 5.0 | 3.8 | 51 | 52 | 857 | 667 |
| 14 | 2.8 | 3.5 | 3.5 | 3.7 | 15.0 | 13.5 | 13.2 | 14.1 | 14.1 | 13.8 | 5.0 | 4.2 | 52 | 50 | 820 | 747 |
| 15 | 3.8 | 3.6 | 3.4 | 3.4 | 17.3 | 17.4 | 16.0 | 14.6 | 16.7 | 16.0 | 4.4 | 4.6 | 50 | 48 | 661 | 673 |
| 16 | 4.5 | 2.3 | 3.1 | 3.5 | 16.0 | 14.8 | 15.2 | 13.3 | 15.6 | 14.1 | 3.5 | 3.9 | 48 | 46 | 1005 | 730 |
| 17 | 3.2 | 4.1 | 3.6 | 3.1 | 14.2 | 14.3 | 13.5 | 14.2 | 13.9 | 14.3 | 4.3 | 3.5 | 52 | 49 | 667 | 686 |
| 18 | 3.6 | 4.2 | 3.4 | 3.2 | 15.1 | 6.0 | 14.0 | 13.5 | 14.6 | 9.8 | 4.0 | 2.3 | 50 | 49 | 722 | 714 |
| 19 | 3.4 | 3.8 | 3.3 | 3.1 | 16.5 | 14.2 | 14.2 | 13.8 | 15.4 | 14.0 | 4.5 | 3.7 | 50 | 46 | 852 | 630 |
| 20 | 3.6 | 3.6 | 3.2 | 3.2 | 16.8 | 14.2 | 13.8 | 14.2 | 15.3 | 14.2 | 4.3 | 3.9 | 50 | 50 | 634 | 651 |
| 21 | 3.5 | 3.4 | 3.4 | 3.0 | 14.3 | 16.0 | 14.2 | 13.9 | 14.3 | 15.0 | 4.1 | 4.4 | 50 | 49 | 788 | 562 |
| 22 | 3.2 | 3.6 | 3.1 | 3.3 | 15.2 | 13.8 | 13.7 | 14.5 | 14.5 | 14.2 | 4.5 | 3.9 | 53 | 49 | 752 | 621 |
| 23 | 3.7 | 3.8 | 3.2 | 3.1 | 15.8 | 14.5 | 14.8 | 14.7 | 15.3 | 14.6 | 4.1 | 3.8 | 49 | 47 | 639 | 702 |
| 24 | 3.8 | 4.0 | 3.6 | 3.4 | 16.8 | 13.9 | 15.4 | 13.2 | 16.1 | 13.6 | 4.2 | 3.4 | 51 | 51 | 529 | 598 |
| Average | 3.6 | 3.5 | 3.4 | 3.3 | 16.1 | 14.5 | 14.7 | 13.9 | 15.4 | 14.2 | 4.4 | 4.0 | 50.1 | 49.0 | 731.6 | 664.3 |
| Stan dev | 0.4301794 | 0.4872096 | 0.1558055 | 0.1903467 | 1.09722146 | 2.0654464 | 0.9546131 | 0.7168267 | 0.837914942 | 1.136720349 | 0.447978835 | 0.595215308 | 1.6235361 | 1.7810394 | 137.581221 | 61.501841 |
| T test | 7.55E-01 | | 2.51E-01 | | 1.19E-03 | | 2.07E-03 | | 1.06E-04 | | 2.86E-02 | | 3.27E-02 | | 3.37E-02 | |
| %Confidence Level | 24.510769 | | 74.86768 | | 99.8810667 | | 99.793477 | | 99.98941928 | | 97.14161864 | | 96.729678 | | 96.6279035 | |

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**Trial map #:** PD99017
**Wet Date:** 9/23/1999
**Date evald:** 12/7/1999

***PVP DATA:***
**Comparison of Head Characteristics**

**Location:** Bard
**Grower:** Top Flavor/T&A
**Ranch/lot** Kenley/11
**Commercial variety:** Annie

| **Maturity Date:** | | **color** |
|---|---|---|
| 1 Grand Max | 12/6/1999 | 5gy 4/6 |
| 2 Raider | 12/7/1999 | 5gy 6/6 |

| | Core length (cm) | | Core diam. (cm) | | Head diam. (cm) | | Head length (cm) | | Avg Head Diameter (cm) | | Avg Head Diam:Core Length | | Frame diam (cm) | | Head wt. (g) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample # | Grand Max | Raider | Grand Max | Raider | Grand Max | Raider | Grand Max | Raider | Grand Max | Raider | Grand Max | Raider | Grand Max | Raider | Grand Max | Raider |
| 1 | 4.5 | 5.0 | 3.5 | 3.6 | 14.6 | 14.0 | 13.2 | 13.3 | 13.9 | 13.7 | 3.1 | 2.7 | 54 | 51 | 709 | 765 |
| 2 | 3.5 | 3.7 | 3.4 | 3.5 | 15.5 | 13.5 | 13.3 | 12.5 | 14.4 | 13.0 | 4.1 | 3.5 | 52 | 50 | 764 | 775 |
| 3 | 5.2 | 3.5 | 3.8 | 3.5 | 14.3 | 15.0 | 13.6 | 13.1 | 14.0 | 14.1 | 2.7 | 4.0 | 50 | 50 | 614 | 730 |
| 4 | 3.4 | 5.0 | 3.6 | 3.7 | 15.2 | 14.4 | 13.0 | 14.0 | 14.1 | 14.2 | 4.1 | 2.8 | 48 | 48 | 718 | 672 |
| 5 | 3.0 | 5.5 | 3.5 | 3.6 | 15.2 | 15.5 | 12.6 | 13.1 | 13.9 | 14.3 | 4.6 | 2.9 | 49 | 48 | 657 | 598 |
| 6 | 4.5 | 4.3 | 3.6 | 3.3 | 16.5 | 14.8 | 14.5 | 14.0 | 15.5 | 14.4 | 3.4 | 2.6 | 50 | 51 | 689 | 650 |
| 7 | 3.0 | 3.6 | 3.7 | 3.7 | 16.1 | 14.3 | 12.8 | 12.2 | 14.5 | 13.3 | 4.8 | 3.1 | 50 | 49 | 873 | 724 |
| 8 | 2.6 | 4.5 | 3.8 | 3.6 | 13.2 | 14.5 | 12.1 | 12.9 | 12.7 | 13.7 | 4.9 | 3.8 | 51 | 48 | 752 | 643 |
| 9 | 3.6 | 4.0 | 3.5 | 3.5 | 15.2 | 14.3 | 15.5 | 12.5 | 15.4 | 13.4 | 4.3 | 3.0 | 52 | 48 | 893 | 602 |
| 10 | 4.3 | 3.9 | 3.6 | 3.8 | 16.2 | 14.0 | 14.3 | 13.0 | 15.3 | 13.5 | 3.5 | 3.4 | 51 | 47 | 681 | 635 |
| 11 | 3.8 | 5.2 | 3.4 | 3.4 | 15.0 | 14.5 | 14.2 | 14.3 | 14.6 | 14.4 | 3.8 | 3.7 | 48 | 53 | 694 | 728 |
| 12 | 2.8 | 6.2 | 3.5 | 3.6 | 13.8 | 14.0 | 12.2 | 14.0 | 13.0 | 14.0 | 4.6 | 2.7 | 50 | 49 | 824 | 703 |
| 13 | 3.5 | 5.0 | 3.8 | 3.5 | 15.2 | 14.0 | 14.3 | 13.8 | 14.8 | 13.9 | 4.2 | 2.2 | 52 | 48 | 765 | 716 |
| 14 | 4.9 | 3.5 | 4.0 | 3.7 | 14.9 | 15.0 | 14.6 | 13.2 | 14.8 | 14.1 | 3.0 | 2.8 | 47 | 47 | 768 | 685 |
| 15 | 4.3 | 4.3 | 3.3 | 3.2 | 16.2 | 15.1 | 15.0 | 14.3 | 15.6 | 14.7 | 3.6 | 4.2 | 51 | 46 | 830 | 725 |
| 16 | 4.3 | 5.6 | 3.6 | 3.8 | 15.2 | 15.1 | 14.5 | 12.8 | 14.9 | 14.0 | 3.5 | 3.2 | 50 | 48 | 681 | 738 |
| 17 | 3.0 | 7.2 | 3.4 | 4.1 | 13.5 | 15.0 | 12.8 | 13.2 | 13.2 | 14.1 | 4.4 | 2.0 | 50 | 50 | 711 | 623 |
| 18 | 3.1 | 4.5 | 3.7 | 3.9 | 16.2 | 15.3 | 15.1 | 14.0 | 15.7 | 14.7 | 5.0 | 3.3 | 50 | 52 | 680 | 635 |
| 19 | 3.3 | 6.8 | 3.0 | 3.3 | 15.6 | 14.9 | 15.0 | 13.2 | 15.3 | 14.1 | 4.6 | 2.1 | 53 | 51 | 624 | 814 |
| 20 | 3.6 | 3.8 | 3.5 | 3.2 | 15.3 | 14.5 | 14.1 | 14.0 | 14.7 | 14.3 | 4.1 | 3.8 | 49 | 50 | 689 | 714 |
| 21 | 4.0 | 4.2 | 3.6 | 3.7 | 16.2 | 15.2 | 14.3 | 13.2 | 15.3 | 14.2 | 3.8 | 3.4 | 51 | 49 | 633 | 652 |
| 22 | 3.8 | 6.5 | 3.6 | 3.5 | 14.7 | 14.8 | 14.0 | 12.4 | 14.4 | 13.6 | 3.8 | 2.1 | 50 | 48 | 854 | 563 |
| 23 | 3.6 | 3.8 | 3.4 | 3.6 | 15.0 | 14.5 | 14.3 | 13.1 | 14.7 | 13.8 | 4.1 | 3.6 | 52 | 42 | 745 | 652 |
| 24 | 3.5 | 4.2 | 3.9 | 3.4 | 13.5 | 15.1 | 12.3 | 13.6 | 12.9 | 14.4 | 3.7 | 3.4 | 47 | 47 | 659 | 635 |
| Average | 3.7 | 4.7 | 3.6 | 3.6 | 15.1 | 14.6 | 13.8 | 13.3 | 14.5 | 14.0 | 4.0 | 3.1 | 50.3 | 48.8 | 729.5 | 682.4 |
| Stan dev | 0.6726408 | 1.0798215 | 0.2115762 | 0.215647 | 0.92852345 | 0.5080333 | 0.9954971 | 0.6164267 | 0.873935688 | 0.42730619 | 0.616729398 | 0.62372192 | 1.7564581 | 2.2506038 | 78.8873601 | 62.180531 |
| T test | 2.56E-04 | | 1.00E+00 | | 3.93E-02 | | 4.37E-02 | | 2.04E-02 | | 7.84E-06 | | 1.11E-02 | | 2.63E-02 | |
| %Confidence Level | 99.974431 | | 0 | | 96.0695203 | | 95.634905 | | 97.96264972 | | 99.99921563 | | 98.887461 | | 97.3738445 | |

9900307

**Trial map #:** RSJV00051 **Location:** Tres Picos **Ranch/lot:** 35-4-4 **Date evald:** 11/3/2000
**Wet Date:** 8/28/2000 **Grower:** T&A **Commercia** Raider **Eval by:** nd/ac/dg

| | Maturity | Color |
|---|---|---|
| Grand Max | 11/1/2003 | 5gy5/6 |
| Raider | 11/3/2003 | 5gy6/6 |

| | Core length (cm) | | Core diam. (cm) | | Head diam. (cm) | | Head length (cm) | | Avg Head Diameter (cm) | | Avg Head Diam:Core Length | | Frame diam (cm) | | Head wt. (g) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample # | Raider | Grandmax | Raider | Grandmax | Raider | Grandmax | Raider | Grandmax | Raider | Grandmax | Raider | Grandmax | Raider | Grandmax | Raider | Grandmax |
| 1 | 44.0 | 65.0 | 38.0 | 37.0 | 165.0 | 160.0 | 139.0 | 174.0 | 152.0 | 167.0 | 3.5 | 2.6 | 44 | 51 | 864 | 834 |
| 2 | 65.0 | 72.0 | 32.0 | 40.0 | 160.0 | 174.0 | 139.0 | 184.0 | 149.5 | 179.0 | 2.3 | 2.5 | 44 | 52 | 600 | 762 |
| 3 | 47.0 | 52.0 | 39.0 | 40.0 | 155.0 | 175.0 | 161.0 | 160.0 | 158.0 | 167.5 | 3.4 | 3.2 | 44 | 50 | 922 | 992 |
| 4 | 57.0 | 61.0 | 35.0 | 39.0 | 184.0 | 164.0 | 166.0 | 169.0 | 175.0 | 166.5 | 3.1 | 2.7 | 41 | 50 | 1013 | 774 |
| 5 | 42.0 | 52.0 | 35.0 | 42.0 | 172.0 | 181.0 | 164.0 | 155.0 | 168.0 | 168.0 | 4.0 | 2.8 | 43 | 47 | 694 | 890 |
| 6 | 42.0 | 44.0 | 36.0 | 40.0 | 155.0 | 174.0 | 154.0 | 170.0 | 154.5 | 172.0 | 3.7 | 3.3 | 46 | 52 | 987 | 1069 |
| 7 | 42.0 | 41.0 | 37.0 | 42.0 | 174.0 | 160.0 | 150.0 | 167.0 | 162.0 | 163.5 | 3.9 | 3.7 | 40 | 50 | 937 | 980 |
| 8 | 47.0 | 48.0 | 35.0 | 40.0 | 161.0 | 172.0 | 169.0 | 169.0 | 165.0 | 170.5 | 3.5 | 4.2 | 46 | 50 | 814 | 848 |
| 9 | 59.0 | 59.0 | 40.0 | 37.0 | 161.0 | 160.0 | 162.0 | 158.0 | 161.5 | 159.0 | 2.7 | 3.3 | 45 | 51 | 724 | 701 |
| 10 | 33.0 | 42.0 | 32.0 | 39.0 | 135.0 | 160.0 | 141.0 | 169.0 | 138.0 | 164.5 | 4.2 | 2.8 | 49 | 50 | 904 | 729 |
| 11 | 42.0 | 49.0 | 39.0 | 41.0 | 156.0 | 174.0 | 151.0 | 172.0 | 153.5 | 173.0 | 3.7 | 4.1 | 49 | 50 | 894 | 791 |
| 12 | 52.0 | 44.0 | 40.0 | 40.0 | 161.0 | 162.0 | 149.0 | 165.0 | 155.0 | 163.5 | 3.0 | 3.3 | 42 | 48 | 773 | 927 |
| 13 | 40.0 | 50.0 | 36.0 | 36.0 | 155.0 | 172.0 | 173.0 | 176.0 | 164.0 | 174.0 | 4.1 | 4.0 | 40 | 49 | 569 | 855 |
| 14 | 47.0 | 45.0 | 37.0 | 35.0 | 160.0 | 174.0 | 157.0 | 160.0 | 158.5 | 167.0 | 3.4 | 3.3 | 42 | 47 | 780 | 736 |
| 15 | 45.0 | 40.0 | 34.0 | 37.0 | 161.0 | 152.0 | 160.0 | 170.0 | 160.5 | 161.0 | 3.6 | 3.6 | 41 | 48 | 968 | 1140 |
| 16 | 40.0 | 50.0 | 41.0 | 39.0 | 162.0 | 155.0 | 149.0 | 159.0 | 155.5 | 157.0 | 3.9 | 3.9 | 40 | 49 | 751 | 791 |
| 17 | 42.0 | 54.0 | 39.0 | 39.0 | 156.0 | 194.0 | 155.0 | 161.0 | 155.5 | 177.5 | 3.7 | 3.3 | 40 | 51 | 803 | 1344 |
| 18 | 33.0 | 32.0 | 37.0 | 38.0 | 174.0 | 164.0 | 146.0 | 142.0 | 160.0 | 153.0 | 4.8 | 4.8 | 43 | 49 | 867 | 980 |
| 19 | 46.0 | 35.0 | 38.0 | 39.0 | 162.0 | 145.0 | 155.0 | 152.0 | 158.5 | 148.5 | 3.4 | 4.2 | 45 | 49 | 830 | 1018 |
| 20 | 35.0 | 42.0 | 40.0 | 40.0 | 172.0 | 169.0 | 166.0 | 155.0 | 169.0 | 162.0 | 4.8 | 3.9 | 43 | 52 | 731 | 959 |
| 21 | 50.0 | 36.0 | 40.0 | 39.0 | 169.0 | 165.0 | 155.0 | 152.0 | 162.0 | 158.5 | 3.2 | 4.4 | 42 | 51 | 822 | 877 |
| 22 | 66.0 | 39.0 | 35.0 | 39.0 | 150.0 | 176.0 | 156.0 | 162.0 | 153.0 | 169.0 | 2.3 | 4.3 | 42 | 47 | 692 | 988 |
| 23 | 45.0 | 55.0 | 40.0 | 41.0 | 146.0 | 164.0 | 157.0 | 165.0 | 151.5 | 164.5 | 3.4 | 3.0 | 45 | 49 | 695 | 858 |
| 24 | 47.0 | 62.0 | 39.0 | 40.0 | 170.0 | 187.0 | 161.0 | 164.0 | 165.5 | 175.5 | 3.5 | 2.8 | 46 | 50 | 796 | 860 |
| Average | 46.2 | 48.7 | 37.3 | 39.1 | 161.5 | 168.0 | 155.6 | 163.8 | 158.6 | 165.9 | 3.5 | 3.5 | 43.4 | 49.7 | 809.6 | 904.3 |
| Stan dev | 8.6560693 | 10.088647 | 2.5917931 | 1.7523276 | 10.3167234 | 11.031493 | 9.0688789 | 9.0996894 | 7.599073885 | 7.51083155 | 0.625406344 | 0.645822909 | 2.6196028 | 1.522774 | 116.321487 | 147.07214 |
| T test | 3.54E-01 | | 5.18E-03 | | 3.93E-02 | | 3.31E-03 | | 1.56E-03 | | 8.28E-01 | | 2.92E-13 | | 1.71E-02 | |
| %Confidence Level | 64.618982 | | 99.4824 | | 96.0727728 | | 99.668547 | | 99.8436133 | | 17.21478654 | | 100 | | 98.2903553 | |

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9900307

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**Trial map #:** YM00025 **Location:** Yuma Valle **Ranch/lot:** Huber 5 **Date evald:** 12/6/2000
**Wet Date:** 9/20/2000 **Grower:** Mission Rar **Commercia** Raider **Eval by:** dg/jt

| | Maturity | Color |
|---|---|---|
| Grand Max | 12/5/2000 | 5gy 5/6 |
| Raider | 12/7/2000 | 5gy 6/6 |

| | Core length (cm) | | Core diam. (cm) | | Head diam. (cm) | | Head length (cm) | | Avg Head Diameter (cm) | | Avg Head Diam:Core Length | | Frame diam (cm) | | Head wt. (g) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample # | Raider | Grand max | Raider | Grand max | Raider | Grand max | Raider | Grand max | Raider | Grand max | Raider | Grand max | Raider | Grand max | Raider | Grand max |
| 1 | 31.0 | 30.0 | 39.0 | 32.0 | 140.0 | 144.0 | 154.0 | 140.0 | 147.0 | 142.0 | 4.7 | 4.7 | 37 | 44 | 490 | 728 |
| 2 | 25.0 | 35.0 | 35.0 | 35.0 | 130.0 | 160.0 | 134.0 | 160.0 | 132.0 | 160.0 | 5.3 | 4.6 | 47 | 45 | 700 | 879 |
| 3 | 15.0 | 22.0 | 32.0 | 35.0 | 122.0 | 145.0 | 121.0 | 132.0 | 121.5 | 138.5 | 8.1 | 6.3 | 46 | 44 | 701 | 797 |
| 4 | 15.0 | 40.0 | 34.0 | 40.0 | 140.0 | 170.0 | 140.0 | 160.0 | 140.0 | 165.0 | 9.3 | 4.1 | 45 | 44 | 730 | 689 |
| 5 | 25.0 | 25.0 | 33.0 | 35.0 | 150.0 | 140.0 | 140.0 | 147.0 | 145.0 | 143.5 | 5.8 | 3.6 | 46 | 46 | 553 | 859 |
| 6 | 30.0 | 32.0 | 32.0 | 35.0 | 131.0 | 130.0 | 134.0 | 150.0 | 132.5 | 140.0 | 4.4 | 5.6 | 45 | 43 | 621 | 823 |
| 7 | 28.0 | 26.0 | 35.0 | 35.0 | 145.0 | 141.0 | 121.0 | 152.0 | 133.0 | 146.5 | 4.8 | 4.6 | 44 | 47 | 790 | 745 |
| 8 | 22.0 | 38.0 | 40.0 | 34.0 | 117.0 | 141.0 | 135.0 | 146.0 | 126.0 | 143.5 | 5.7 | 5.5 | 45 | 44 | 892 | 948 |
| 9 | 28.0 | 32.0 | 28.0 | 33.0 | 130.0 | 165.0 | 131.0 | 155.0 | 130.5 | 160.0 | 4.7 | 4.2 | 46 | 46 | 620 | 903 |
| 10 | 25.0 | 26.0 | 32.0 | 35.0 | 142.0 | 155.0 | 136.0 | 140.0 | 139.0 | 147.5 | 5.6 | 4.6 | 45 | 43 | 651 | 543 |
| 11 | 34.0 | 30.0 | 27.0 | 31.0 | 135.0 | 150.0 | 160.0 | 136.0 | 147.5 | 143.0 | 4.3 | 5.5 | 44 | 45 | 659 | 789 |
| 12 | 30.0 | 26.0 | 39.0 | 28.0 | 149.0 | 132.0 | 128.0 | 137.0 | 138.5 | 134.5 | 4.6 | 4.5 | 42 | 44 | 703 | 650 |
| 13 | 22.0 | 20.0 | 36.0 | 35.0 | 144.0 | 132.0 | 140.0 | 141.0 | 142.0 | 136.5 | 6.5 | 5.3 | 40 | 44 | 600 | 719 |
| 14 | 34.0 | 28.0 | 30.0 | 35.0 | 169.0 | 160.0 | 135.0 | 140.0 | 152.0 | 150.0 | 4.5 | 7.5 | 45 | 43 | 432 | 700 |
| 15 | 20.0 | 27.0 | 37.0 | 36.0 | 140.0 | 135.0 | 125.0 | 160.0 | 132.5 | 147.5 | 6.6 | 5.3 | 43 | 50 | 740 | 688 |
| 16 | 36.0 | 25.0 | 38.0 | 31.0 | 155.0 | 162.0 | 149.0 | 130.0 | 152.0 | 146.0 | 4.2 | 5.4 | 42 | 50 | 551 | 741 |
| 17 | 15.0 | 25.0 | 36.0 | 33.0 | 133.0 | 150.0 | 120.0 | 135.0 | 126.5 | 142.5 | 8.4 | 5.7 | 46 | 47 | 700 | 801 |
| 18 | 40.0 | 30.0 | 37.0 | 35.0 | 155.0 | 155.0 | 142.0 | 136.0 | 148.5 | 145.5 | 3.7 | 4.9 | 45 | 50 | 985 | 998 |
| 19 | 26.0 | 26.0 | 34.0 | 35.0 | 125.0 | 155.0 | 120.0 | 156.0 | 122.5 | 155.5 | 4.7 | 6.0 | 41 | 45 | 572 | 805 |
| 20 | 25.0 | 25.0 | 30.0 | 35.0 | 150.0 | 155.0 | 130.0 | 135.0 | 140.0 | 145.0 | 5.6 | 5.8 | 45 | 46 | 517 | 720 |
| 21 | 23.0 | 40.0 | 34.0 | 32.0 | 142.0 | 165.0 | 126.0 | 156.0 | 134.0 | 160.5 | 5.8 | 4.0 | 43 | 50 | 604 | 697 |
| 22 | 23.0 | 29.0 | 37.0 | 34.0 | 140.0 | 156.0 | 132.0 | 140.0 | 136.0 | 148.0 | 5.9 | 5.1 | 46 | 45 | 660 | 825 |
| 23 | 27.0 | 26.0 | 35.0 | 35.0 | 159.0 | 144.0 | 140.0 | 140.0 | 149.5 | 142.0 | 5.5 | 5.5 | 44 | 49 | 950 | 907 |
| 24 | 30.0 | 25.0 | 31.0 | 34.0 | 136.0 | 156.0 | 128.0 | 149.0 | 132.0 | 152.5 | 4.4 | 6.1 | 44 | 47 | 623 | 750 |
| Average | 26.2 | 28.7 | 34.2 | 34.1 | 140.8 | 149.9 | 134.2 | 144.7 | 137.5 | 147.3 | 5.6 | 5.2 | 44.0 | 45.9 | 668.5 | 779.3 |
| Stan dev | 6.4537092 | 5.2640426 | 3.4763695 | 2.244155 | 12.1868752 | 11.41668 | 10.404761 | 9.4890288 | 9.080557347 | 7.969796926 | 1.406798753 | 0.862659678 | 2.284161 | 2.3831382 | 135.206766 | 103.23492 |
| T test | 1.55E-01 | | 8.83E-01 | | 1.03E-02 | | 6.62E-04 | | 2.44E-04 | | 2.72E-01 | | 7.79E-03 | | 2.55E-03 | |
| %Confidence Level | 84.506378 | | 11.700625 | | 98.9738009 | | 99.933771 | | 99.97564675 | | 72.77670318 | | 99.220546 | | 99.7450652 | |

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***Pooled Data from 4 Trials***

| Sample | Head length (cm) | | Head wt. (g) | |
|---|---|---|---|---|
| # | Grand Max | Tres Equis | Grand Max | Tres Equis |
| 1 | 15.2 | 13.2 | 910 | 708 |
| 2 | 14.8 | 14.0 | 944 | 507 |
| 3 | 15.0 | 14.1 | 933 | 727 |
| 4 | 15.6 | 15.1 | 593 | 570 |
| 5 | 15.2 | 14.3 | 667 | 428 |
| 6 | 13.5 | 15.2 | 607 | 576 |
| 7 | 15.5 | 14.2 | 695 | 640 |
| 8 | 15.3 | 15.0 | 794 | 633 |
| 9 | 13.2 | 12.1 | 546 | 702 |
| 10 | 16.3 | 15.0 | 793 | 748 |
| 11 | 13.2 | 14.1 | 544 | 746 |
| 12 | 15.6 | 13.2 | 607 | 653 |
| 13 | 15.3 | 14.2 | 857 | 780 |
| 14 | 13.2 | 12.3 | 820 | 562 |
| 15 | 16.0 | 13.5 | 661 | 636 |
| 16 | 15.2 | 12.0 | 1005 | 658 |
| 17 | 13.5 | 14.2 | 667 | 743 |
| 18 | 14.0 | 15.1 | 722 | 699 |
| 19 | 14.2 | 15.0 | 852 | 521 |
| 20 | 13.8 | 12.3 | 634 | 692 |
| 21 | 14.2 | 13.5 | 788 | 544 |
| 22 | 13.7 | 14.0 | 752 | 555 |
| 23 | 14.8 | 13.5 | 639 | 701 |
| 24 | 15.4 | 13.0 | 529 | 625 |
| 25 | 13.2 | 14.0 | 709 | 516 |
| 26 | 13.3 | 13.2 | 764 | 652 |
| 27 | 13.6 | 13.7 | 614 | 647 |
| 28 | 13.0 | 14.2 | 718 | 623 |
| 29 | 12.6 | 14.6 | 657 | 617 |
| 30 | 14.5 | 13.5 | 689 | 709 |
| 31 | 12.8 | 12.8 | 873 | 724 |
| 32 | 12.1 | 14.8 | 752 | 686 |
| 33 | 15.5 | 14.1 | 893 | 723 |
| 34 | 14.3 | 14.0 | 681 | 540 |
| 35 | 14.2 | 13.8 | 694 | 523 |
| 36 | 12.2 | 14.2 | 824 | 827 |
| 37 | 14.3 | 13.2 | 765 | 620 |
| 38 | 14.6 | 11.2 | 768 | 577 |
| 39 | 15.0 | 11.8 | 830 | 697 |
| 40 | 14.5 | 14.1 | 681 | 583 |
| 41 | 12.8 | 12.5 | 711 | 560 |
| 42 | 15.1 | 13.0 | 680 | 638 |
| 43 | 15.0 | 14.1 | 624 | 763 |
| 44 | 14.1 | 13.5 | 689 | 723 |
| 45 | 14.3 | 13.6 | 633 | 652 |
| 46 | 14.0 | 11.2 | 854 | 698 |
| 47 | 14.3 | 12.3 | 745 | 524 |
| 48 | 12.3 | 15.0 | 659 | 666 |
| 49 | 16.1 | 17.4 | 721 | 834 |
| 50 | 15.0 | 18.4 | 976 | 762 |
| 51 | 14.2 | 16.0 | 737 | 992 |
| 52 | 18.2 | 16.9 | 842 | 774 |

*Continued*

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| Sample | Head length (cm) | | Head wt. (g) | |
|---|---|---|---|---|
| # | Grand Max | Tres Equis | Grand Max | Tres Equis |
| 53 | 16.0 | 15.5 | 812 | 890 |
| 54 | 15.2 | 17.0 | 910 | 1069 |
| 55 | 16.0 | 16.7 | 673 | 980 |
| 56 | 16.6 | 16.9 | 827 | 848 |
| 57 | 14.5 | 15.8 | 805 | 701 |
| 58 | 14.7 | 16.9 | 918 | 729 |
| 59 | 16.2 | 17.2 | 799 | 791 |
| 60 | 15.3 | 16.5 | 940 | 927 |
| 61 | 15.0 | 17.6 | 946 | 855 |
| 62 | 15.7 | 16.0 | 733 | 736 |
| 63 | 16.0 | 17.0 | 1016 | 1140 |
| 64 | 14.1 | 15.9 | 785 | 791 |
| 65 | 16.2 | 16.1 | 698 | 1344 |
| 66 | 15.2 | 14.2 | 826 | 980 |
| 67 | 15.7 | 15.2 | 812 | 1018 |
| 68 | 14.2 | 15.5 | 936 | 959 |
| 69 | 15.5 | 15.2 | 998 | 877 |
| 70 | 16.1 | 16.2 | 858 | 988 |
| 71 | 15.2 | 16.5 | 826 | 858 |
| 72 | 15.5 | 16.4 | 789 | 860 |
| 73 | 14.0 | 12.0 | 728 | 777 |
| 74 | 16.0 | 12.5 | 879 | 534 |
| 75 | 13.2 | 12.2 | 797 | 657 |
| 76 | 16.0 | 13.5 | 689 | 505 |
| 77 | 14.7 | 14.0 | 859 | 720 |
| 78 | 15.0 | 15.4 | 823 | 605 |
| 79 | 15.2 | 14.0 | 745 | 412 |
| 80 | 14.6 | 12.5 | 948 | 719 |
| 81 | 15.5 | 11.5 | 903 | 622 |
| 82 | 14.0 | 13.4 | 543 | 535 |
| 83 | 13.6 | 12.5 | 789 | 536 |
| 84 | 13.7 | 14.0 | 650 | 720 |
| 85 | 14.1 | 13.2 | 719 | 548 |
| 86 | 14.0 | 13.4 | 700 | 595 |
| 87 | 16.0 | 13.5 | 688 | 489 |
| 88 | 13.0 | 13.2 | 741 | 591 |
| 89 | 13.5 | 14.0 | 801 | 540 |
| 90 | 13.6 | 12.8 | 998 | 552 |
| 91 | 15.6 | 12.3 | 805 | 611 |
| 92 | 13.5 | 15.9 | 720 | 530 |
| 93 | 15.6 | 12.4 | 697 | 977 |
| 94 | 14.0 | 13.7 | 825 | 945 |
| 95 | 14.0 | 12.0 | 907 | 578 |
| 96 | 14.9 | 14.0 | 750 | 658 |
| AVG | 14.6 | 14.2 | 770.3 | 703.1 |
| Std. Dev | 1.11E+00 | 1.60E+00 | 1.13E+02 | 1.63E+02 |
| T Test | 1.81E-02 | | 1.16E-03 | |
| % Confidence Level | 98.19142248 | | 99.88422129 | |

9900307

PROGENY
advanced genetics®

**Trialing Protocol for Intellectual Property Protection.**

I. Set Up

1. Parental lines and competing varieties are identified.
2. Primary slots are identified.
3. Necessary accession lines are located and purchased/received from seed dealers or growers.
4. All varieties are assigned a number to maintain integrity, and anonymity.
5. Trials are set up in the Progeny warehouse with all necessary varieties. Variety arrangement for trial is diagramed.

II. Planting

1. Commercial plantings are located by contacting commercial growers during the planting slot recommended for the variety.
2. Field is located during commercial planting, and the necessary rows and area is marked off by a Progeny employee with proper training.
3. Varieties are planted according to diagram, in 100 ft. ranges, consisting of roughly 200 plants.
4. All varieties are planted in same manner, to mimic the planting of the commercial variety as closely as possible.
5. A trial map is drawn diagramming the trial, the trial location in the field, and directions to the field.

III. Maintenance

1. All varieties are treated identically. The grower handles all watering, fertilization, and pest control, as if it was no different from the commercial field it is grown with.
2. Thinning of the trial is done by a crew contracted by the commercial grower.

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IV. Evaluation

1. Evaluations are done as near to the time of the commercial harvest as possible by knowledgeable Progeny employees.
2. The evaluation is conducted "blindly". The evaluator(s) do not have the key to the trial at the time of evaluation.

3. 24 heads of each variety are evaluated.
    a. The frame diameter of 24 random plants are measured to the nearest cm.
    b. 24 mature heads of each variety are cut to the cap leaf.
    c. The heads are carried to an adequate work station
    d. The following measurements are then conducted and recorded:
        1. Each head is weighed to the nearest gram.
        2. The core diameter of each head is measured to the nearest mm.
        3. The heads are then sliced in to halves, discarding 1 half.
        4. The core lengths (from the cut stem to the core tip) are measured to the nearest mm.
        5. The head length (from the cut stem to the cap leaf) is measured to the nearest mm.
        6. The head diameter (at its widest point) is measured to the nearest mm.
        7. The ideal maturity or harvest date is then estimated based on the solidity of the head, the core length and any other physiological characteristics present.
        8. The leaf color is documented using the Munsell Color Charts for Plant Tissue.
    e. From these measurements, we then use an Excell program to calculate the averages, the standard deviations and the T-Tests for the compared varieties.

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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

# EXHIBIT E
# STATEMENT OF THE BASIS OF OWNERSHIP

*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 APPLICANT(S)
PROGENY ADVANCED GENETICS, INC.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER
PX 634 B

3. VARIETY NAME
Grand Max
~~PX 634 B~~
RAD 4/16/01

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)*
1536 B MOFFETT STREET
SALINAS, CALIFORNIA 93905

5. TELEPHONE *(include area code)*
831-751-6030

6. FAX *(include area code)*
831-751-6032

7. PVPO NUMBER
9900307

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

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

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

a. If 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 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 *(if needed, use reverse for extra space)*:

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of 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 final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

According to the Paperwork Reduction Act of 1995, no persons are 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 compete this information collection is estimated to average 10 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

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