No. 9900413

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Nunes Vegetables, 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 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 PURPOSE , 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.)

CELERY

'Sweet 16'

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 twelfth day of September, in the year two thousand one.

Attest:

Paul M. Zurkowski

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

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

Form Approved - OMB No. 0581-0055

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

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

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

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

1. NAME OF OWNER

Nunes Vegetables, Inc.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME

None

3. VARIETY NAME

Sweet 16

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*

925 Johnson Avenue
P.O. Box 843
Salinas, CA 93901

5. TELEPHONE *(Include area code)*

(831) 751-7510

6. FAX *(Include area code)*

(831) 424-4190

FOR OFFICIAL USE ONLY

PVPO NUMBER

9900413

FILING DATE

8/30/99

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

Corporation

8. IF INCORPORATED, GIVE STATE OF INCORPORATION

California

9. DATE OF INCORPORATION

October 5, 1976

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

Brett R. Harrell
Nunes Vegetables, Inc.
P.O. Box 843
Salinas, CA 93902-0843

FEES RECEIVED

FILING AND EXAMINATION FEES:

$ 2450 00

DATE 8/30/99

CERTIFICATION FEE:

$ 320-

DATE 8/27/2001

11. TELEPHONE *(Include area code)*

(831) 751-7510

12. FAX *(Include area code)*

(831) 424-4190

13. E_MAIL

BrettHarrell@compuserve.com

14. CROP KIND *(Common Name)*

Celery

15. GENUS AND SPECIES NAME OF CROP

Apium graveolens var. dulce

16. FAMILY NAME *(Botanical)*

Apiaceae

17. IS THE VARIETY A FIRST GENERATION HYBRID?

☐ YES ☒ NO

18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)

a. ☒ Exhibit A. Origin and Breeding History of the Variety
b. ☒ Exhibit B. Statement of Distinctness
c. ☒ Exhibit C. Objective Description of Variety
d. ☒ Exhibit D. Additional Description of the Variety *(Optional)*
e. ☒ Exhibit E. Statement of the Basis of the Owner's Ownership
f. ☒ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)*
g. ☒ Filing and Examination Fee ($2,450), made payable to "Treasurer of the United States" *(Mail to the Plant Variety Protection Office)*

19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? *See Section 83(a) of the Plant Variety Protection Act)*

☐ YES *(If "yes", answer items 20 and 21 below)* ☒ NO *(If "no," go to item 22)*

20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?

☐ YES ☒ NO

21. IF "YES" TO ITEM 20, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?

☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES?

☐ YES ☒ NO

IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. *(Please use space indicated on reverse.)*

23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT *(PLANT BREEDER'S RIGHT OR PATENT)*?

☐ YES ☒ NO

IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. *(Please use space indicated on reverse.)*

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

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

SIGNATURE OF OWNER		SIGNATURE OF OWNER	
NAME *(Please print or type)*		NAME *(Please print or type)*	
David L. Nunes			
CAPACITY OR TITLE	DATE	CAPACITY OR TITLE	DATE
President			

INSTRUCTIONS

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), ALL of the following items must be received in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to reproduce the variety, or for tuber reproduced varieties verification that a viable *(in the sense that it will reproduce an entire plant)* tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for $2,450 ($300 filing fee and $2,150 examination fee), payable to "Treasurer of the United States" *(See Section 97.6 of the Regulations and Rules of Practice.)* Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfiled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 500, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. DO NOT use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of $300 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

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

ITEM

18a. 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.

18b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
(1) identify these varieties and state all differences objectively,
(2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences, and
(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.

18c. 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.

18d. 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.*

18e. 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.

19. 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).*

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

23. *See Section 5.5 of the Act for instructions on claiming the benefit of an earlier filing date.*

22. 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.)*

N/A

23. 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).)*

N/A

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. There is no charge for filing a change of address. The fee for filing a change of 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.)*

To avoid conflict with other variety names in use, the applicant must check the variety names proposed by contacting: Seed Branch, AMS, USDA, Room 213, Building 306, Beltsville Agricultural Research Center–East, Beltsville, MD 20705. Telephone: (301) 504-8089.

Public reporting burden for this collection of information is estimated to average 30 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. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Agriculture, Clearance Officer, OIRM, AG Box 7630, Jamie L. Whitten Building, Washington, D.C. 20250. When replying, refer to OMB No. 0581-0055 and form number in your letter. Under the PRA of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

The U.S. Department of Agriculture (USDA) prohibits discrimination in its programs on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, and marital or familial status. (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 the USDA Office of Communications at (202) 720-2791. To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, D.C. 20250, or call (202) 720-7327 (voice) or (202) 720-1127 (TDD). USDA is an equal opportunity employer.

STT-470 (6-98) designed by the Plant Variety Protection Office with WordPerfect 6.0a. Replaces STD-470 (03-96) which is obsolete.

9931413

CELERY

SWEET 16

16D. Exhibit A, Origin and Breeding History of the Variety

Pedigree: [Conquistador SPS x Summit SPS], F_2 SPSs, F_3 SPSs

In 1991, Conquistador SPS, was cross pollinated with Summit, SPS. The F_1 was grown in 1992, and advanced to F_2 in 1993. Selections were made in this segregating population of plants for the following horticultural characteristics:

1. Delayed seed stalk growth;
2. Shorter plants;
3. Good flavor, color and texture; and
4. Vigorous stalks with smooth ribs.

These selections were grown out in the F_3 generation. Several of the better lines were re-selected and single plant selections were made and selfed. The best line was chosen for an increase to be grown in isolation.

Seeds from this isolation were used to test this new variety for its suitability as a non-bolting variety for California coastal growing regions. It has proven itself to be stable and superior to competing varieties when grown on Fusarium-free soils. Its resistance to bolting and superior yielding ability are its salient characteristics.

An additional increase was made in 1996 using the F_3 generation seed. Seed from this increase has been used by Nunes Vegetables, Inc., only, to produce commercial celery crops in both Monterey County and Ventura County, California in 1998 and 1999, and the crops generating the test data for this application. These large populations of plants have demonstrated uniformity and stability without producing off-types or variants.

CELERY

SWEET 16

16B. Exhibit B, Statement of Distinctiveness

Sweet 16 retains characteristics of both of its parents Conquistador and Summit.

Since Summit is no longer available commercially, during all trials, Sweet 16 was compared with Conquistador, the other parent and an industry standard, and during two of the trials, with TU 52-75. Differences with these varieties include:

1. Plant Height: Sweet 16 is significantly* shorter in plant height than either Conquistador (by 4.5 cm) or TU 52-75 (by 2.1 cm).

2. Trimmed Weight: Sweet 16 has a significantly higher trimmed weight than either Conquistador (by 0.14 kg) or TU 52-75 (by 0.18 kg).

3. Bolting Tolerance: As measured by seeder length, Sweet 16 (seeder length 10.1 cm) has significantly greater bolting tolerance than either Conquistador (by 4.5 cm) or TU 52-75 (by 13.1 cm).

4. Resistance to Pith: Sweet 16 has significantly greater resistance to pith (7.8% pithy mature petioles), producing mature petioles with less pith than either Conquistador (by 9.1%) or TU 52-75 (by 25.5%).

Other differences are presented in Exhibit D, Additional Description.

* All statistics provided in this Exhibit are statistically significant at the 95% confidence level.

FORM APPROVED: OMB NO. 0581-0055

990041 EXHIBIT C (Celery)

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
COMMODITIES SCIENTIFIC SUPPORT DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

OBJECTIVE DESCRIPTION OF VARIETY

CELERY (Apium graveolens L. var. *dulce* (Miller) Pers.)

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
Nunes Vegetables, Inc.	N/A	Sweet 16

ADDRESS *(Street and No., or R.F.D. No., City, State, and Zip Code)*

P.O. Box 843
Salinas, CA 93902-0843

FOR OFFICIAL USE ONLY

PVPO NUMBER 9900413

Place numbers in the boxes to designate the expressions which are characteristic of the application variety. Data for quantitative plant characters should be based on a minimum of 50 plants. Include leading zeros when necessary (e.g., [0][8][9]) for quantitative data. Comparative data should be determined from varieties entered in the same trial with the same planting or transplant date. Plant colors may be precisely designated by using any recognized color chart, e.g., The National Bureau of Standards Color Kit 2107.

COMPARISON VARIETIES
(For Use Below)

1 = Tall Utah 52-70R Improved 2 = Florida 683 3 = Summer Pascal 4 = Tall Golden Self Blanching

1. TYPE:

[4]

1 = Crystal Jumbo (Tall Utah 52-70R Improved)
2 = Ordinary Utah (Tall Utah 10-B)
3 = Pascal (Summer Pascal)
4 = Green Intermediates (Slow Bolting Green No. 96)
5 = Yellow (Tall Golden Self Blanching)
6 = Other *(Specify)* _____

2. MATURITY:

Number of days from transplanting to harvest date (during principal production period of growing location):

[1][3][4] Days in Western U.S. *(Specify growing location and transplant date):* Ventura County, California (November 21, 1998 and December 1, 1998)

[ ][ ] Days earlier than [ ]
Same as [ ]
[0][7] Days later than [X] Conquistador
(Comparison Varieties)

[ ][ ] Days in Eastern U.S. *(Specify growing location and transplant date):* _____

[ ][ ] Days earlier than [ ]
Same as [ ]
[ ][ ] Days later than [ ]
(Comparison Varieties)

Class (as determined by number of days from transplanting to harvest maturity):

[5] In Western U.S.
[ ] In Eastern U.S.

1 = Very Early (< or = 70 days) 2 = Early (71 - 85 days)
3 = Midseason (86 - 100 days) 4 = Late (101 - 115 days) 5 = Very Late (> or = 116 days)

3. PLANT (At Harvest Maturity):

9900413

Height (from crown to top of leaves):

Mean: 72 cm

Most common range: 71 to 73 cm

[ ] cm taller than [ ]
Same as [ ]
45 cm shorter than [X]
Comparison Varieties
Conquistador LSD .05 = 00.9 cm

Height class (as determined by mean plant height):

3 1 = Short (< 48cm) 2 = Medium (48-61cm) 3 = Tall (> 61cm)

12.9 Number of outer petioles (40cm or longer) per plant

0.8 More than [X]
Same as [ ]
Less than [ ]
Conquistador
Comparison Varieties
LSD .05 = 0.69

3.5 Number of inner petioles (less than 40cm) per plant

0.4 More than [X]
Same as [ ]
Less than [ ]
Conquistador
Comparison Varieties
LSD .05 = 0.18

Stalk Shape ("Stalk" refers to a market trimmed plant):

1 1 = Cylindrical (Tall Utah 52-70R Improved) 2 = Flaring (Summer Pascal) 3 = Spindle (Tall Utah 10-B)

Stalk Conformation:

1 1 = Compact (Tall Utah 52-70R Improved) 2 = Slightly Open (June-Belle) 3 = Loose (Summer Pascal)

Heart Formation:

3 1 = Sparse (Summer Pascal) 2 = Medium 3 = Full (Tall Utah 52-70R Improved)

4. PETIOLE (Outer marketable petioles of stalk; use same petioles and number of petioles for length, width, and thickness measurements):

Length (from butt to first joint):

Mean: 30 cm

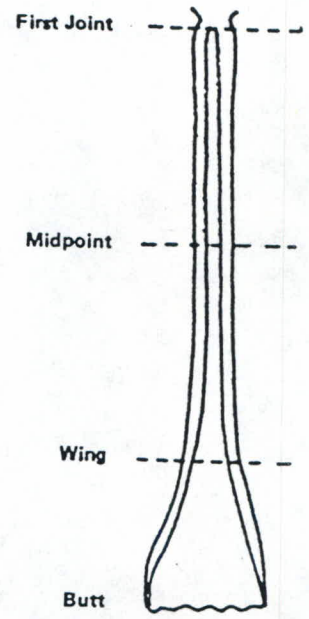
Most common range: 30 to 31 cm

[ ] mm longer than [ ]
Same as [ ]
034 mm shorter than [X]
Comparison Varieties
LSD .05 = 03.3 mm
Conquistador

4. PETIOLE (Continued)

9900413

DIAGRAM OF PETIOLE



Length Class (as determined by mean petiole length):

[3] 1 = Short (< 20cm) 2 = Medium (20-30cm) 3 = Long (> 30cm)

Width (at midpoint between wing and first joint):

[2][6] mm

[2] mm wider than [X] Conquistador

Same as [ ] Comparison Varieties

[ ] mm narrower than [ ]

LSD .05 = [0].[6] mm

Thickness (at midpoint between wing and first joint):

[1][0] mm

0.[7] mm thicker than [X] Conquistador

Same as [ ] Comparison Varieties

[ ] mm thinner than [ ]

LSD .05 = [0].[6] mm

CROSS SECTION AT MIDPOINT

Site of Thickness Determination

Cross-sectional Shape (at midpoint between wing and first joint):

[2] 1 = Deeply Cupped 2 = Moderately Cupped 3 = Slightly Cupped 4 = Nearly Flat

Color (Unblanched at harvest):

[4] 1 = Yellow (Tall Golden Self Blanching) 2 = Light Green (Earlibelle)
3 = Medium Green (June-Belle) 4 = Dark Green (Tall Utah 52-70R Improved)
5 = Very Dark Green (Tall Utah 52-75)

Color Chart Value *(Specify chart used;* RHS Color Chart *):*

Application Variety Sweet 16 - 137D

Comparison Variety Conquistador - 144A

Anthocyanin:

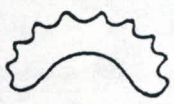
[1] 1 = Absent 2 = Present

Stringiness:

[3] 1 = Very Slight (June-Belle) 2 = Moderate (Florida 683) 3 = Normal (Tall Utah 52-70R Improved)

Ribbing:

[2] 1 = Inconspicuous (Summer Pascal) 2 = Moderate (Tall Utah 52-70R Improved) 3 = Prominent (Tall Golden Self Blanching)



Glossiness:

[2] 1 = Dull (Summer Pascal) 2 = Moderately Glossy (Tall Utah 52-70R Improved) 3 = Glossy (Golden Detroit)

5. LEAF BLADE (Of outermost petioles of trimmed plant):

Color of Upper Surface:

[2] 1 = Yellowish Green (Tall Golden Self Blanching) 2 = Dark Green (Tall Utah 52-70R Improved) 3 = Other *(Specify)* _____

Color Chart Value *(Specify chart used;* RHS Color Chart *):*

Application Variety Sweet 16 - 146A

Comparison Variety Conquistador - 146A

6. BOLTING:

Class:

[3] 1 = Easy Bolting (Tall Utah 52-70R Improved) 2 = Slow Bolting (Slow Bolting Green No. 96) 3 = Very Slow Bolting (Tall Non-Bolting Golden Plume)

[ ][ ][ ] % Plants Bolted in Seedling Year *(Specify growing location and transplant date for field tests, or temperature and length of vernalization period for artificial induction;* See Exhibits B and D *):*

[ ][ ] % More plants bolted than [ ]

Same % plants bolted as [ ]

[ ][ ] % Less plants bolted than [ ]

1 = Tall Utah 52-70R Improved
2 = Florida 683
3 = Golden Plume
4 = Slow Bolting Green No. 96

7. STRESS TOLERANCE (0 = untested, 1 = susceptible, 2 = tolerant; data from replicated tests comparing the application variety with the indicated susceptible (S) and tolerant (T) check varieties should be provided whenever possible in Exhibit D):

[0] Adaxial Crackstem (Boron Deficiency; S = Utah 10-B, T = Tall Utah 52-70R Improved)

[0] Abaxial Crackstem (Boron Deficiency; S = Florimart, T = Florida 683)

[0] Leaf Margin Chlorosis (Magnesium Deficiency; S = Utah 10-B, T = Tall Utah 52-75)

[0] Blackheart (Calcium Deficiency; S = Florida 683)

[2] Pithiness (Nutritional Deficiency; S = Tall Utah 52-70R Improved, T = Florida 2-13) See Exhibits B and D

[ ] Other *(Specify)* N/A

8. DISEASE RESISTANCE (0 = untested, 1 = susceptible, 2 = resistant; data from replicated tests comparing the application variety with the indicated susceptible (S) and resistant (R) check varieties should be provided whenever possible in Exhibit D):

[0] Bacterial Leaf Spot *(Pseudomonas cichorii;* S = Florida 683, R = Florimart*)*

[0] Early Blight *(Cercospora apii;* S = Florida 683, R = Florimart*)*

[0] Late Blight *(Septoria* spp.*;* S = Florida 683*)*

[0] Fusarium Yellows, Race 1 *(Fusarium oxysporum* f. sp. *apii;* S = Fordhook, R = Tall Utah 52-70R Improved*)*

[0] Fusarium Yellows, Race 2 *(Fusarium oxysporum* f. sp. *apii;* S = Tall Utah 52-70R Improved*)*

[0] Western Celery Mosaic *(Marmor umbelliferarum;* S = Florida 683*)*

[0] Southern Celery Mosaic *(Marmor cucumeris* var. *commelinae;* S = Florida 683*)*

[0] Pink Rot *(Sclerotinia* spp.*;* S = Florida 683*)*

[ ] Other *(Specify)* N/A

9. INDICATE THE VARIETY THAT MOST CLOSELY RESEMBLES THE APPLICATION VARIETY FOR THE FOLLOWING CHARACTERS:

CHARACTER	VARIETY	CHARACTER	VARIETY
Plant Height	TU 52-75	Leaf Color	Conquistador
Petiole Color	Conquistador	Maturity	Conquistador
Petiole Length	TU 52-75	Bolting Resistance	Conquistador

NOTE: *Any additional descriptive information and supporting documentation may be provided as Exhibit D.*

16d. Exhibit D, Additional Description of the Variety

A. Trials:

Three trials were conducted involving Sweet 16, two in Monterey County, California, and one in Ventura County, California. The planting and harvesting dates, sample sizes, and other pertinent data regarding these trials are summarized in Table 1, below.

Table 1. Trial Summary

Trial Number	Area	Varieties	Transplanted	Harvested	Sample Size (n, for each variety)
One	Monterey County	Sweet 16 and Conquistador	July 7, 1998	September 29 and 30, 1998	$n \geq 100$
Two	Ventura County	Sweet 16, TU 52-75 and Conquistador	November 21 and December 3, 1998	April 7, 13, and 14, 1999	$n \geq 197$
Three	Monterey County	Sweet 16, TU 52-75 and Conquistador	March 10, 1999	June 29 and 30, 1999	$n \geq 97$

B. General Characteristics:

a. Sweet 16 v. Conquistador.

Combining the results of Trial Numbers one, two and three (resulting in nearly 400 samples each of Sweet 16 and Conquistador), listed below are the average differences in general characteristics detected between these two varieties of celery. The differences listed are statistically significant at the 95% confidence level.

Table 2. General Characteristics
(Sweet 16 and Conquistador)

Variety	Outer Petioles	Inner Petioles	Petiole Length (cm)	Petiole Thickness (mm)	Petiole Width (mm)
Sweet 16	12.920	3.669	30.479	9.716	26.213
Conquistador	11.799	3.101	34.132	8.848	23.404

b. Sweet 16 v. TU 52-75.

Combining the results of Trial Numbers two and three (resulting in nearly 300 samples each of Sweet 16 and TU 52-75), listed below are the average differences in general characteristics detected between these two varieties of celery. The differences detected were statistically significant at the 95% confidence level.

Table 3. General Characteristics
(Sweet 16 and TU 52-75)

Variety	Outer Petioles	Inner Petioles
Sweet 16	12.430	3.805
TU 52-75	7.747	2.351

Measurements for petiole length, petiole thickness, and petiole width were not statistically significant between these two varieties.

C. Resistance to Bolting:

Tolerance to bolting or rate of seed stalk emergence is based on length of seed stalk in harvestable plants. Varieties with short seed stems tend to be more bolt tolerant than varieties with long seed stems.

As early as 1994, qualitative observations showed clearly that Sweet 16 showed greater bolt tolerance than Conquistador. These observations were recorded in photographs taken in 1994 and 1996 in Ventura County. Copies of the photographs from 1994 and 1996 are attached as Exhibit D, Attachment 1 and Exhibit D, Attachment 2, respectively.

In conducting later quantitative testing in 1998 and 1999, Sweet 16 was compared to Conquistador in all three trials, and TU 52-75 in the last two trials. These last two trials were specifically designed to test bolt tolerance.

Conquistador was included in the trial because it is an industry standard, it is one of Sweet 16's parents, and because it is considered to be tolerant to bolting. TU 52-75 was included in the trials because although originally considered to have some bolt tolerance, use in coastal regions has demonstrated that it has lower bolt tolerance than current industry standards. As a result, TU 52-75 served as the control to determine that conditions conducive to bolting existed during both trials two and three.

As the result of moderate weather conditions, no bolting of either Sweet 16 or Conquistador occurred in Trial Number one. The data presented below does not include results from this trial.

In contrast to Trial Number one, unseasonably cold temperatures in Ventura County, and in Monterey County during the winter and spring of 1998 and 1999 produced ideal conditions for bolting in Trials Numbered two and three.

(This was confirmed by the measurements for seed stalk length for TU 52-75 during these trials.)

In Ventura County, Trial Number Two was harvested on April 7, 13, and 14, 1999. The celery was cut lengthwise, and the seed stalk length measured (in centimeters) on 197 or more samples of each variety. The results are shown in Table 4 below.

Table 4. Mean Seed Stalk Length for Selected Varieties (Ventura)

VARIETY	SEED STALK LENGTH (cm)
Sweet 16	7.972
Conquistador	11.240
TU 52-75	19.251

In this trial, the difference between Sweet 16 and both Conquistador and TU 52-75 was significant at the 95% level of confidence.

Representative examples of the seed stalk lengths for these three varieties are shown in Exhibit D, Attachment 3.

In Monterey County, Trial Number Three was harvested on June 29 and 30, 1999. The celery was again cut lengthwise, and the seed stalk measured (in centimeters) on 100 or more samples of each variety. The results are shown in Table 5 below.

Table 5. Mean Seed Stalk Length for Selected Varieties (Monterey)

VARIETY	SEED STALK LENGTH (cm)
Sweet 16	12.297
Conquistador	20.000
TU 52-75	29.238

In this trial, the difference between Sweet 16 and both Conquistador and 5275 was significant at the 95% level of confidence.

Representative examples of the seed stalk lengths for these three varieties are shown in Exhibit D, Attachment 4.

D. Pith:

Pith results from a breakdown in cell structure creating a cavity that retains water within the petiole. Once this occurs, decay is more rapid, and as a result, shipping quality decreases rapidly. This results in diminished shelf life, and decreased quality for the consumer.

To test for pith, in each trial, the mature petioles were separated from the immature petioles. The mature petioles were then cut mid-way between the butt and the wing. Then, the petioles were examined for a watery appearance which is an indicator of cell breakdown, and for voids. Based on nearly 400 samples of Sweet 16 and Conquistador, and 300 samples of TU 52-75, Sweet 16 had a significantly lower proportion of pithy petioles than either of the other two varieties.

Table 6. Proportion of Pithy Petioles In Mature Petioles

VARIETY	PROPORTION OF PITHY PETIOLES
Sweet 16	0.078
Conquistador	0.181
TU 52-75	0.354

The difference between Sweet 16 and both Conquistador and TU 52-75 was significant at the 95% level of confidence.

E. Weight:

The relatively thick, wide, moderately cupped petiole of Sweet 16 results in a significantly heavier head of celery than Conquistador or TU 52-75. This assists in export sales, particularly to the Orient, where celery is customarily sold by weight. For domestic consumers, weight is often equated with quality.

Harvested plants were first trimmed to length for shipping, and then weighed. Based on these trials, Sweet 16 weighed significantly more than either Conquistador or TU 52-75 at a 95% level of confidence.

Table 7. Trimmed Weight by Variety

VARIETY	TRIMMED WEIGHT (kg)
Sweet 16	1.153
Conquistador	0.964
TU 52-75	0.933

F. Plant Height:

Plant height may be associated with increased vigor, and a tendency to bolt. The Sweet 16 plant is more compact, slower to bolt and smaller in overall untrimmed plant height than Conquistador and TU 52-75. The differences in Table 8 between Sweet 16 and both Conquistador and TU 52-75 are significant at the 95% confidence level.

11

Table 8. Plant Height Before Trimming

VARIETY	PLANT HEIGHT BEFORE TRIMMING (cm)
Sweet 16	72.584
Conquistador	77.579
TU 52-75	75.194

Exhibit D, Attachment 1
(Representative seed stalk lengths from 1994 Ventura County trial for Sweet 16 and Conquistador)

SWEET 16

CONQUISTADOR

Exhibit D, Attachment 3
(Representative seed stalk lengths from 1999 Ventura County trials for Sweet 16, Conquistador and TU 52-75)

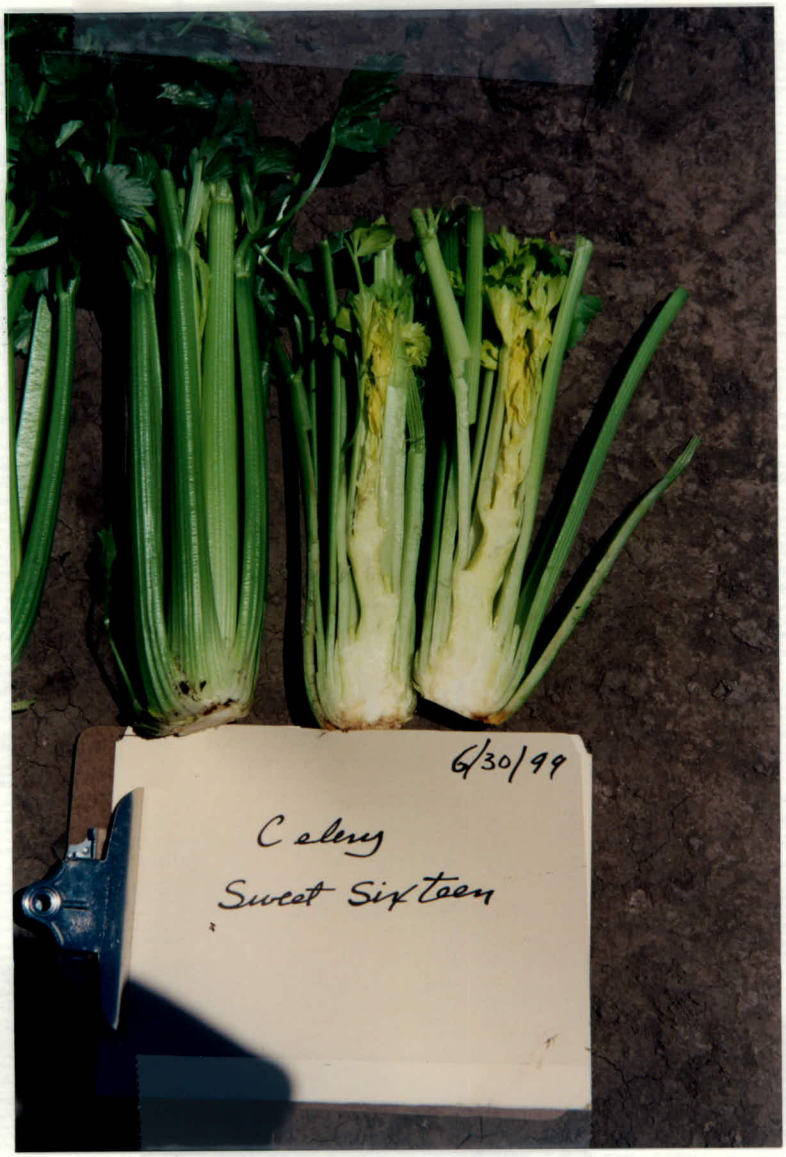
SWEET 16

CONQUISTADOR

Exhibit D, Attachment 2
(Representative seed stalk lengths from 1996 Ventura County trial for Sweet 16 and Conquistador)

TU 52-75

Exhibit D, Attachment 4
(Representative seed stalk lengths from 1999 Monterey County trial for Sweet 16, Conquistador and TU 52-75)



SWEET 16

17

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Conquistador

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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)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
Nunes Vegetables, Inc.	None	Sweet 16

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)*	5. TELEPHONE *(include area code)*	6. FAX *(include area code)*
P.O. Box 843 Salinas, CA 93902-0843	(831) 751-7510	(831) 424-4190
	7. PVPO NUMBER	

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?

[X] YES [ ] NO If no, give name of country

11. Additional explanation on ownership *(if needed, use reverse for extra space)*:

Sweet 16 was developed by Wally Rutledge and Jim Knowlson. Under the terms of an agreement between Knowlson and Nunes Vegetables, Inc. rights to the variety are owned by Nunes Vegetables, Inc. Rutledge is an employee of Nunes Vegetables, Inc., and under the terms of an agreement between the employee and Nunes Vegetables, Inc., all rights to the variety are owned by Nunes Vegetables, Inc.

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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