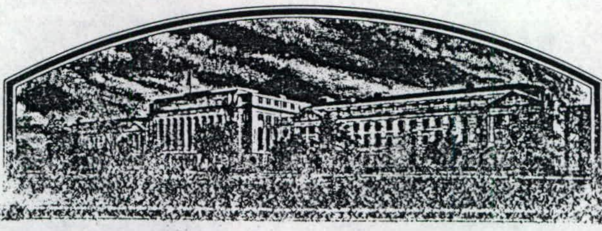
No. 8300163



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Petoseed Co. Inc

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTI[illegible] AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED [illegible] [redacted] [illegible] VARIETY AND THE VARIOUS REQUIREMENTS OF LAW [illegible] BEEN COMPLIED WITH, AND THE TITLE THERETO IS [illegible] VARIETY PROTECTION OFFICE, [illegible]

WHEREAS [illegible]

NOW, THEREFORE, THIS CERTIFICATE [illegible] UPON THE SAID APPLICANT(S) [illegible] FOR THE TERM OF eighteen [illegible] THE VARIETY [illegible] OTHERS FROM SELLING THE [illegible] OR REPRODUCING [illegible] IMPORTING IT, OR EXPORTING IT [illegible] 1970, AS AMENDED, 7 U.S.C. [illegible]

[illegible]

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, this [illegible] day of [illegible] in the year of our Lord one thousand nine hundred and eighty-three.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

INSTRUCTIONS

an original copy of the application and exhibits, at least 2,500 and $500 fee ($250 filing fee and $250 examination fee) to U.S. ulture, Agricultural Marketing Service, Livestock, Poultry, Grain ion, Plant Variety Protection Office, National Agricultural Lib- Beltsville, Maryland 20705. (See section 180.175 of the Regula- s of Practice.) Retain one copy for your files. All items on e form are self-explanatory unless noted below.

e the date the applicant determined that he had a new iety based on (1) the definition in section 41(a) of Act and (2) the date a decision was made to increase seed.

e: (1) the genealogy, including public and commercial ieties, lines, or clones used, and the breeding method; the details of subsequent stages of selection and tiplication; (3) the type and frequency of variants ing reproduction and multiplication and state how these iants may be identified and (4) evidence of uniformity stability.

e a summary statement of the variety's novelty. Clearly te how this novel variety may be distinguished from all er varieties in the same crop. If the new variety most sely resembles one or a group of related varieties: identify these varieties and state all differences ectively; (2) attach statistical data for characters ressed numerically and demonstrate that these differences significant; and (3) submit, if helpful, seed and nt specimens or photographs of seed and plant comparisons arly indicating novelty.

l in the Exhibit C, Objective Description form, for all racteristics for which you have adequate data.

cribe any additional characteristics that are not cribed, or whose description cannot be accurately veyed in Exhibit C. Use comparative varieties as is essary to reveal more accurately the description of racteristics that are difficult to describe, such as, nt habit, plant color, disease resistance, etc.

"YES" is specified (seed of this variety be sold by iety name only as a class of certified seed) the licant may NOT reverse his affirmative decision after variety has either been sold and so labeled, his ision published, or the certificate has been issued. ever, if the applicant specified "NO," he may change choice. (See section 180.16 of the Regulations and es of Practice.)

section 42 of the Plant Variety Protection Act and tion 180.7 of the Regulations and Rules of Practice.

REVERSE

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

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: *See Reverse.*

FORM APPROVED
OMB NO. 40-R3822

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

1a. TEMPORARY DESIGNATION OF VARIETY Peto 95-43	1b. VARIETY NAME Peto 95-43 DPV 2/11/83	FOR OFFICIAL USE ONLY PV NUMBER 8100160
2. KIND NAME tomato	3. GENUS AND SPECIES NAME Lycopersicum esculatum	FILING DATE 8/31/81 — TIME 3:00 A.M. (P.M.)
4. FAMILY NAME (BOTANICAL) Solanaceae	5. DATE OF DETERMINATION September 15, 1980	FEE RECEIVED $ 500.00 — DATE 8/31/81 $ 250.00 — 2/7/83
6. NAME OF APPLICANT(S) Petoseed Co., Inc.	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)* Rt. 4, Box 1255 Woodland, CA 95695	8. TELEPHONE AREA CODE AND NUMBER 916-666-0931
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)* corporation	10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION California 1962	11. DATE OF INCORPORATION 1962

12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS:
Mr. Paul Thomas, Director of Research, Petoseed Co., Inc.
Rt. 4, Box 1255, Woodland, CA 95695

13. **CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:**

- [X] 13A. Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
- [X] 13B. Exhibit B, Novelty Statement.
- [X] 13C. Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*
- [ ] 13D. Exhibit D, Additional Description of the Variety.

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

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

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

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

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

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

17. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.

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

8/27/81 (DATE) — Colen Wyatt (SIGNATURE OF APPLICANT)

(DATE) — (SIGNATURE OF APPLICANT)

13A - PETO 95-43

Peto 95-43 was developed by conventional tomato breeding methods from crosses made in Woodland, California by Jack Hanna at the Petoseed Research Center.

Large numbers of single plant selections were made from the F-2 of each cross and the following generations. Progeny testing for resistance to Fusarium Race II (*Fusarium oxysporium f. lycopersici* Race II) and Verticillium Wilt Race I (*Verticillium alboatrium*) was carried out on each generation and the susceptible selections were discarded. Single plant selections were made from field plantings in Woodland, California and at the Peto-Chile farms located near Santiago, Chile in a winter nursery.

University of California 118 x University of Florida 1346-9

↓

VF65 (University of California) x MH-1 (University of Florida) Woodland 1973

↓

F-5 Selection (VF2) x Griborsky (Russia)

↓

F7 340 (1978)

↓

F-8 Peto 95-43 (VF2)

Evaluations of selctions from the inbred line 340 (1978) were made during 1979-80 with 95-43 being selected as having the best characteristics for processing and mechanical harvest.

Exhibit A
Supplement 1

8100160

13A - PETO 95-43 (CONT'D.)

Peto 95-43 has homozygous resistance for Verticillium Wilt Race I (*Verticillium alboatrium*) and Fusarium Wilt Race II (*Fusarium oxysporium f. lycopersici* Race II).

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Exhibit A
Supplement 2

STATEMENT OF UNIFORMITY

Peto 95-43 has homozygous resistance for Verticillium Wilt Race I (Verticillium alboatrium) and Fusarium Wilt Race II (Fusarium oxysporium f. lycopersici Race II.)

Peto foundation stock seed of Peto 95-43 was made during 1979 and found to be very uniform in the 1980 and 1981 plantings. From the plantings to date there are no off types present. The seed is now in the F-10 generation.

Exhibit A
Supplement 3

8100160

STATEMENT OF STABILITY OF PETO 95-43 TOMATO
Application No. 8100106

During the crop growing seasons 1980, and 1981 selections from the F7 340 line (1978) were evaluated in trial plots under Petoseed control in the following California Counties:

1. Imperial
2. Orange
3. Ventura
4. Fresno
5. San Joaquin
6. Sacramento
7. Yolo
8. Sutter

The performance and stability of the 95-43 was found to be very uniform in trials located in California Counties as listed above. No genetic variants were found in the 95-43 line. The stability of the 95-43 was further determined in plantings under control of Petoseed in Ohio, Michigan, Maryland, and Florida during 1980 and 1981. Seed increases of the Peto 95-43 were made in 1980 and 1981 under the control of the Stock Seed Department of Petoseed in Saticoy, California. All lots are identified as Peto 95-43. The Peto 95-43 line was found to be stable for 3 generations. No genetic variants were found in the seed increases of field plantings.

Additional plantings of Peto 95-43 were observed in June, 1982 in Imperial and Fresno Counties and found to be uniform.

Peto 95-43 shows to be consistently a mid-early tomato and days to harvest are 5 to 10 days earlier than Peto 94C. April 1 plantings in Yolo County, California requires 105 days from seeding to mechanical harvest for Peto 95-43 and

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110 days for 94C. January plantings of Peto 95-43 requires 125 days from emergence to mechanical harvest and Peto 94C requires 133 days. Comparative plantings in the tomato production areas of California show that Peto 95-43 and Peto 94C will have a differential harvest date of 5 to 7 days. For the same seeding date the grower will harvest Peto 95-43 for 5 to 7 days then can proceed to harvest 94C.

Standard testing procedures for Race 2 Fusarium Wilt resistance were conducted by the Plant Pathology Department of Petoseed in Woodland, California. The results of the Fusarium resistance test show that Peto 95-43 is 100% resistant.

8100160

PETOSEED®

PETOSEED CO., INC. BREEDERS·GROWERS

P.O. BOX 4206. SATICOY. CALIF. 93004-0206 U.S.A. • TEL. 805-647-1188 CABLE PETOSEED

TELEX NO. 65-9247

REPLY TO: RT. 4, BOX 1255, WOODLAND, CA 95695 • PHONE (916) 666-0931

Arpil 13, 1984

Dr. Kenneth H. Evans, Commissioner
Plant Variety Protection Office
United States Department of Agriculture
National Agricultural Library Building
Beltsville, Maryland 20705

Dear Dr. Evans:

SUBJECT: TOMATO CERTIFICATE NO. 8100159 (PETO 94-C) AND 8100160 (PETO 95-43)

Revised Exhibit B for Peto 95-43 Part A. Rec'd 4/17/84 (orig. with rest of letter) CRB 4/13/84

We will follow your suggestion of March 26, 1984 in regards to clarifying the PVP for Peto 94-C and Peto 95-43 by stating that Peto 94-C is most similar to Peto 94 and Peto 95-43 is most similar to Peto 95.

The major differences as noted between Peto 94-C and Peto 94 are as follows:

1. Peto 94-C is 9-11 days earlier than Peto 94 based upon average number of days from emergence to 90% ripe (Peto 94-C averages 115 to 122 days to 90% maturity compared to Peto 94, which averages 124 to 131 days to 90% maturity).

2. Peto 94-C has smaller plant size than Peto 94 based upon measurements of plants at 90% ripe (Peto 94-C 119 cm to 122 cm and Peto 94 128 cm to 131 cm).

The major differnces between Peto 95-43 and Peto 95 are as follows:

1. Peto 95-43 has slightly larger fruit sizes, averaging 2.58 to 2.7 ounces per fruit as compared to Peto 95, which averages 2.20 to 2.26 ounces per fruit.

8100160

Exhibit B
Part B
Peto 95-43

AMENDED EXHIBIT B STATEMENT - PETO 95-43 TOMATO

The major differences between Peto 95-43 and Peto 95 are as follows:

1. Peto 95-43 has slightly larger fruit sizes, averaging 2.58 to 2.7 ounces per fruit as compared to Peto 95, which averages 2.20 to 2.26 ounces per fruit.

2. Peto 95-43 has a lower percentage of stems remaining on the fruit after maching harvested (Peto 95-43 had an average of 12%-17% stems attached to fruit as compared to Peto 95 with an average stem retention of 32% to 50%).

orig rec'd 6/11/84

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, GRAIN, AND SEED DIVISION
BELTSVILLE, MARYLAND 20705

OBJECTIVE DESCRIPTION OF VARIETY
TOMATO (*Lycopersicon esculentum* Mill.)

Name of applicant	Temporary designation	Variety Name
Petoseed Co., Inc.	Peto 95-43	Peto 95-43 2/16/83

Address (Street and No. or R.F.D. No., City, State, Zip)	FOR OFFICIAL USE ONLY PVPO NUMBER
Rt. 4, Box 1255 Woodland, CA 95695	8100160

Choose responses which best represent your variety in the characters below. When a single quantitative value is requested (e.g. fruit weight), your answer should be the mean of an adequate, unbiased sample of plants. The applicant variety should be compared with at least one well-known standard check variety of the same type, and grown in the same trial(s). The characters on this form should be described from plants grown under normal conditions of culture for the variety. Indicate by a check whether trial data are from greenhouse ____ or field x plantings. Trials direct-seeded x ____ or transplanted ____. Give locations and dates of trials Woodland and Saticoy California 1979-80. Use leading zeroes when necessary (e.g. 09 or 081, etc.). Complete this form as fully as possible for best characterization of the variety.

1. SEEDLING: (2-15 cm, well-illuminated)

[2] Anthocyanin in hypocotyl: 1 = absent 2 = present
[1] Cotyledon: 1 = normal 2 = giant

2. MATURE PLANT:

[3] Growth: 1 = indeterminate 2 = semi-determinate 3 = determinate
[2] Size (compared to others of its growth type): 1 = small 2 = medium 3 = large
[2] Habit: 1 = sprawling (decumbent) 2 = semi-erect 3 = erect
[2] Foliage cover: 1 = light 2 = moderate 3 = heavy

3. STEM:

[2] Internode length (between the 1st and 4th inflorescences):
1 = short ( ) 2 = intermediate ( ) 3 = long ( )
[3] Branching: 1 = sparse (Brehm's Solid Red) 2 = intermediate ( )
3 = profuse (UC82)
[1] Branching at cotyledonary or first leafy node: 1 = present 2 = absent
[2] Pubescence: 1 = smooth (no long hairs) 2 = sparsely hairy (scattered long hairs)
3 = densely hairy or canescent
[3] No. of nodes below the first inflorescence:
1 = few ( ) 2 = intermediate ( ) 3 = many ( )
[1] No. of nodes (leaves) between inflorescences
[2] Thickness: 1 = slender, weak 2 = medium thickness 3 = thick, stiff

4. LEAF (Mature leaf under the 1st to 3rd inflorescence):

[1] Type: 1 = tomato 2 = potato
[2] Division: 1 = once-pinnate 2 = intermediate (pinnate-bipinnate)
3 = bipinnate, many small leaflets with the large ones
[1] Attitude: 1 = semi-erect 2 = horizontal 3 = drooping
[2] Leaflet blade: 1 = thin 2 = medium 3 = thick
[2] Bases of major leaflets: 1 = even 2 = oblique (the sides offset on petiole)
[1] Margins of major leaflets: 1 = nearly entire 2 = shallowly toothed or scalloped
3 = deeply toothed or cut, especially towards base
[1] Marginal rolling: 1 = absent 2 = present

af under the 1st to 3rd inflorescences) (continued):

najor leaflets: 1 = smooth 2 = rugose (bumpy or veiny)
= normal 2 = slightly wilty 3 = wilty
jor leaflets: 1 = broadly ovate 2 = ovate to lanceolate
3 = slender and lanceolate, tapered to a point
or hairiness: 1 = smooth 2 = normal 3 = wooly
aflets: 1 = light green (Earlinorth) 2 = medium green ( )
3 = gray-green ( ) 4 = dark green (UC82)
af on check variety (same scale): Variety _____

---

simple (racemose) 2 = forked (2 major axes) 3 = compound (much branche
ers setting fruit (in 2nd or 3rd inflorescence):
2 = 4-8, 3 = 8-12, 4 = 12 or more

---

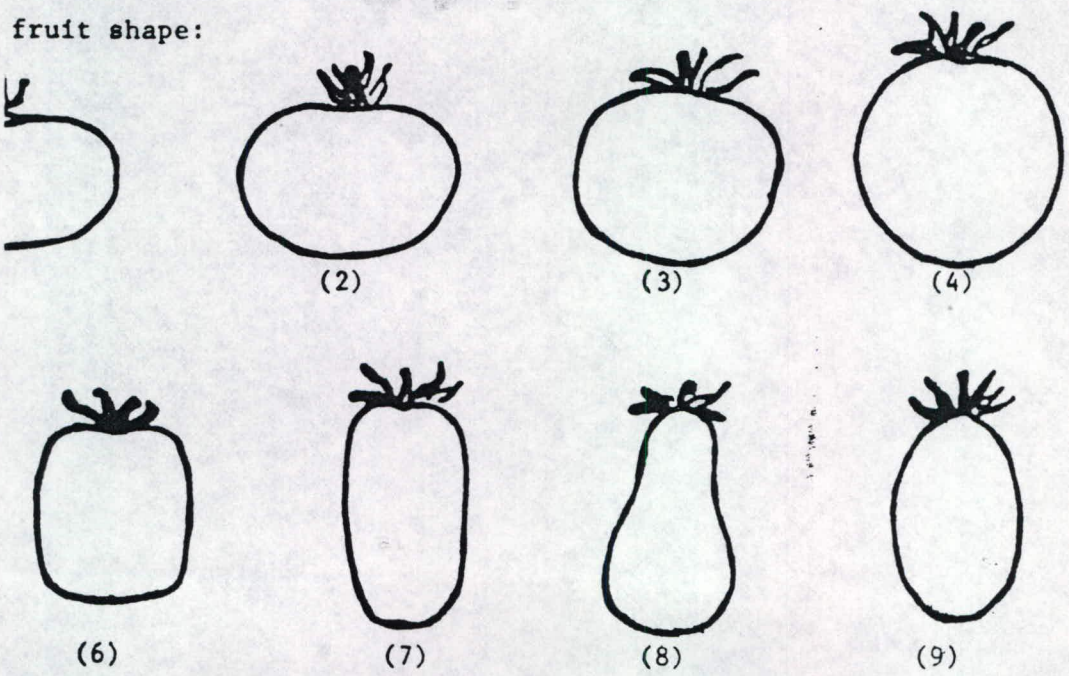
normal (lobes awl-shaped) 2 = macrocalyx (lobes large, leaflike)
fleshy
:: 1 = yellow 2 = old gold 3 = white or tan
:ion: 1 = included 2 = even with stamens 3 = exserted
:ence: 1 = absent 2 = sparse 3 = dense
= all fused into tube 2 = separating into 2 or more groups at anthesis
(1st flower of 2nd or 3rd infloresence):
it 2 = occasionally present 3 = frequently present

: of 2nd or 3rd cluster):

.ayer: 1 = present (pedicellate) 2 = absent (jointless)
of pedicel (from abscission layer or joint to calyx attachment)
:: Maximum diameter:
1 = small cherry (< 20 mm) 2 = large cherry (20-35 mm)
3 = cocktail (35-48 mm) 4 = U.S. extra small (48-54 mm)
5 = U.S. small (54-58 mm) 6 = U.S. medium (58-64 mm)
7 = U.S. large (64-73 mm) 8 = U.S. extra large (73-88 mm)
9 = U.S. maximum large (88-100 mm) 10 = U.S. maximum large (> 100 mm)
meter of check variety, same classes as above
name) UC82
.ght [0 7 1] g Check variety UC82

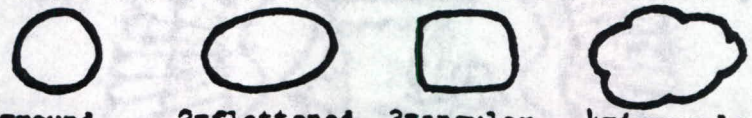
. . . . . .

fruit shape:



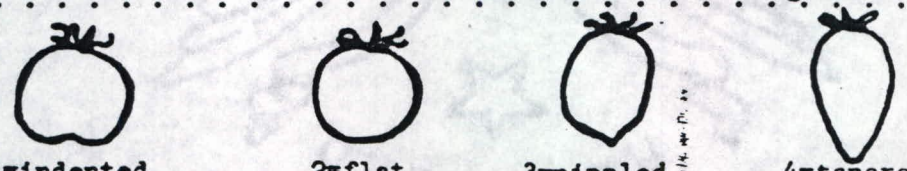
7. FRUIT (3rd fruit of 2nd or 3rd cluster):

[1] Shape of transverse section:



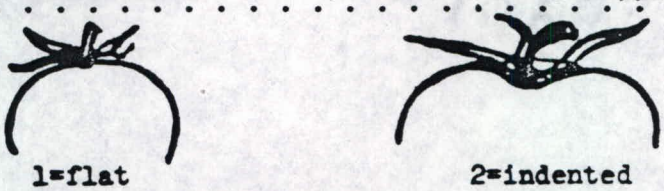
1=round 2=flattened 3=angular 4=irregular

[2] Shape of blossom end:



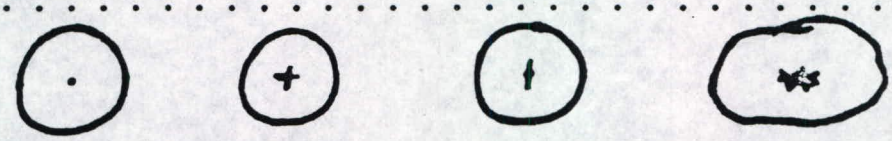
1=indented 2=flat 3=nippled 4=tapered

[1] Shape of stem end:



1=flat 2=indented

[1] Shape of pistil scar:



1=dot 2=stellate 3=linear 4=irregular

[1] Fruit surface: 1 = smooth 2 = slightly fasciated 3 = moderately fasciated
[1] Fruit color (mature-green stage):
1 = light green ('Lanai', VF145-F5) 2 = Lt. gray-green ( )
3 = apple green ('Heinz 1439 VF') 4 = dark green ( )
[2] Fruit pattern (mature-green stage): 1 = green shouldered 2 = uniform green
[5] Mature fruit color (full-ripe): 1 = white 2 = yellow 3 = tangerine
4 = pink 5 = red 6 = brownish-red
7 = greenish 8 = other (specify) _____
[2] Flesh color (full-ripe): 1 = yellow 2 = red 3 = crimson 4 = other _____
[1] Epidermis: 1 = normal 2 = easy-peel
[2] Epidermis color: 1 = colorless 2 = yellow
[2] Epidermis thickness: 1 = thin 2 = average 3 = thick
[3] Thickness of pericarp: 1 = thin (< 3 mm) 2 = medium (3-6 mm) 3 = thick (> 6 mm)
[3] Thickness of pericarp of check variety (same scale) Variety: _____
[1] Core size: 1 = coreless 2 = small 3 = medium 4 = large
[1] Core shape: 1 = solid, unbranched 2 = branched
[1] Core texture: 1 = soft, edible 2 = tough or fibrous
[1] Stem scar size: 1 = small ( ) 2 = medium ( ) 3 = large (
[2] No. of locules: 1 = two 2 = three and four 3 = five or more
[6] Fruit firmness[1] (minimum table-ripe):
1 = extra-soft ('Gardener') 2 = very soft ('Valiant') 3 = soft ('Campbell 28')
4 = fairly firm ('Tropic') 5 = firm ('MH-1') 6 = very firm ('UC-82')

8. PHENOLOGY (Growing degree days, or heat units on a base temperature of 51° F are preferable--but you may report either growing degree days or calendar days. Circle either "days" for calendar days, or "heat units" for growing degree days):

Days/heat units from seed to first open flower:
[44] days, Application variety
[45] days, Check variety No. 1 UC82
[50] days, Check variety No. 2 VF145-7879

Days/heat units from seed/transplant (indicate which) to first ripe fruit:
[87] days, Application variety
[094] days, Check variety No. 1 UC82
[098] days, Check variety No. 2 VF145-7879

[1]For definitions of these subjective terms see Kader & Morris (1976) In: Proc. 2nd Tomato Quality Workshop.

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ving degree days, or heat units on a base temperature of 51° F are
: you may report either growing degree days or calendar days. Circle
or calendar days, or "heat units" for growing degree days) (Continued):

; from seed/transplant (indicate which) to once-over harvest, if

cation variety [1][1][4] days, Check variety No. 1 UC82
[1][2][5] days, Check variety No. 2 VF145-7879

; from breaker to full-ripe stage:
tion variety [ ][ ][ ] days, Check variety No. 1 _____
[ ][ ][ ] days, Check variety No. 2 _____

ipe fruit:
tion variety [ ][ ] days, Check variety No. 1 _____
[ ][ ] days, Check variety No. 2 _____

: 1 = long ('Marglobe') 2 = medium ('Westover')
3 = short, concentrated ('VF 145') 4 = very concentrated ('UC 82')
ty: 1 = early 2 = medium early 3 = medium
4 = medium late 5 = late

---

more than one category applies, list all in rank order):

field 2 = greenhouse
unstaked 2 = staked or trellised
use(s): 1 = home garden 2 = fresh market
3 = processing 4 = other _____
st: 1 = not adapted 2 = adapted
egion: 1 = Northeast/Midatlantic 2 = Southeast
3 = Midwest/Great Lakes 4 = South-central
5 = Great Plains 6 = Intermountain West
7 = Northwest 8 = Central California
9 = Southwest/So. California 10 = General
11 = Other (specify) _____
temperature: 1 = cool 2 = normal warm 3 = hot 4 = general
humidity: 1 = humid 2 = semi-arid 3 = general
neral 2 = organic 3 = general

LERANCE TO ENVIRONMENTAL STRESS:

fruit set (subjective evaluation based on fruit set at temperatures
hibit set in area of evaluation):
air 3 = good ('Summertime') AREA _____
fruit set (subjective evaluation based on fruit set at low temperatures
hibit set): 1 = poor 2 = fair 3 = good ('Veecrop')
AREA _____
seed germination: 1 = poor ( ) 2 = fair ( )
3 = good ( )

RUIT DISORDERS (Use code: 0=unknown, 1=susceptible, 2=resistant):

nd rot [2] Bursting
[2] Cracking, radial
concentric [0] Fruit pox
k [0] Graywall or blotchy ripening

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12. DISEASE AND PEST REACTION (Use code: 0=not tested, 1=susceptible, 2=resistant) If claim of novelty is based wholly or in part upon disease resistance, trial data should be appended (Exhibit D) and should include date and location of trial(s), method of testing, reaction of application variety, and reaction of check varieties (identified by name).

Viral Diseases:

[0] Cucumber mosaic
[1] Tobacco mosaic, Race 0
[1] Tobacco mosaic, Race 2^2 (Tm 2^2)
[ ] Other (specify) _____

[0] Curly top
[1] Tobacco mosaic, Race 1 (Tm 1)
[0] Tomato spotted wilt

[0] Potato-Y virus
[1] Tobacco mosaic, Race 2 (Tm 2
[0] Tomato yellows

Bacterial Diseases:

[0] Bacterial canker (Corynebacterium michiganense)
[1] Bacterial speck (Pseudomonas tomato)
[0] Bacterial wilt (Pseudomonas solanacearum)
[ ] Other bacterial disease (specify) _____

[0] Bacterial soft rot (Erwinia carotovora)
[1] Bacterial spot (Xanthomonas vesicatorium)

Fungal Diseases:

[0] Anthracnose (Colletotrichum spp.)
[0] Brown root rot or corky root (Pyrenochaeta lycopersici)
[0] Early blight (Alternaria solani) defoliation
[2] Fusarium wilt, Race 2 (F. oxysporum f. lycopersici)
[0] Late blight, Race 0 (Phytophthora infestans)
[0] Leaf mold, Race 1 (Cladosporium fulvum)
[0] Leaf mold, Race 3 (C. fulvum)
[0] Nailhead spot (Alternaria tomato)
[0] Rhizoctonia soil rot (R. solani)
[0] Southern blight (Sclerotium rolfsii)
[2] Verticillium wilt, Race 1 (V. albo-atrum)
[ ] Other fungal diseases (specify) _____

[0] Botrytis rot or mold (B. cinerea)
[2] Collar rot or stem canker (Alternaria solani
[2] Fusarium wilt, Race 1 (F. oxysporum f. lycopersi
[0] Gray leaf spot (Stemphylium solani, S. floridan
[0] Late blight, Race 1 (Phytophthora infestans)
[0] Leaf mold, Race 2 (C. fulvum)
[0] Leaf mold, other races (specify) _____
[0] Phytophthora root rot (P. parasitica)
[0] Septoria leaf blight (Septoria spp.)
[0] Target leafspot (Corynespora casiicola)
[0] Verticillium wilt, Race 2 (V. albo-atrum)

Insect and Pests:

[0] Colorado potato beetle (Leptinotarsa decemlineata)
[1] Root knot nematode (Meloidogyne incognita)
[0] Spider mites (Tetranychus spp.)
[0] Sugar beet army worm (Spodopfora exigua)
[0] Tobacco flea beetle (Epitrix hirtipennis)
[1] Tomato hornworm (Manduca quinquemaculata)
[1] Tomato fruitworm (Heliothis zea)
[1] Whitefly (Trialeurodes vaporariorum)
[ ] Other (specify) _____

Pollutants:

[0] Ozone [0] Sulfur dioxide [0] Other (specify) _____

REFERENCES

Anonymous, 1976. All About Tomatoes. Ortho Books, Chevron Chemical Co., San Francisco. In three volumes: Midwest/Northeast Edition, West Edition, and South Edition.

Ware, G. W. & J. P. McCollum, 1968. Producing Vegetable Crops. The Interstate Printer & Publishers, Inc., Danville, Illinois. (Chapter 30, pp. 451-473, "Tomatoes".)

Webb, R. E., T. H. Barksdale, & A. K. Stoner, 1973, "Tomatoes" pp. 344-361 In: Nelson, R.R. (Ed. Breeding Plants for Disease Resistance. Pennsylvania State University Press, University Park

Young, P. A. & J. W. MacArthur, 1947. Horticultural characters of tomatoes. Bull. Texas Agric. Exper. Station No. 698.

No. 8100160

UNITED STATES DEPARTMENT OF AGRICULTURE

To all to whom these presents shall come:

Proceed the Inc

WHEREAS, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REPRESENTING THE DISCOVERY AND PRODUCTION FOR INCLUSION IN THE PLANT VARIETY PROTECTION OFFICE OF A NEWLY DISCOVERED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION, ACCOMPANIED BY THE FEES PRESCRIBED BY LAW, AND THE PLANT VARIETY PROTECTION OFFICE HAS DETERMINED THAT THE PLANT VARIETY DESCRIBED IN THE APPLICATION MEETS THE REQUIREMENTS OF THE PLANT VARIETY PROTECTION ACT, AND THE RULES AND REGULATIONS ISSUED THEREUNDER, AND THAT THE APPLICANT IS ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW:

NOW, THEREFORE, THE SECRETARY OF AGRICULTURE, BY VIRTUE OF THE AUTHORITY VESTED IN HIM BY THE PLANT VARIETY PROTECTION ACT, HAS ISSUED THIS CERTIFICATE, GRANTING TO THE APPLICANT, IN THE STATE OF NEW YORK, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY OF PLANT, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT OR EXPORTING IT, OR OFFERING IT FOR REPRODUCTION, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY FOR COMMERCIAL PURPOSES, UNDER THE PLANT VARIETY PROTECTION ACT, AS AMENDED (84 STAT. 1542).

TOMATO

(Lycopersicon esculentum)

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 [illegible] day of September, in the year of our Lord one thousand nine hundred and eighty-three.

Attest:

[illegible]

Plant Variety Protection Office

Agricultural Marketing Service

[illegible]

Secretary of Agriculture

INSTRUCTIONS

GENERAL: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and $500 fee ($250 filing fee and $250 examination fee) to U.S. Dept. of Agriculture, Agricultural Marketing Service, Livestock, Poultry, Grain and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (See section 180.175 of the Regulations and Rules of Practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

ITEM

5 Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.

13a Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.

13b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.

13c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.

13d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as, plant habit, plant color, disease resistance, etc.

14a If "YES" is specified (seed of this variety be sold by variety name only as a class of certified seed) the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "NO," he may change his choice. (See section 180.16 of the Regulations and Rules of Practice.)

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

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

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: *See Reverse.*

FORM APPROVED
OMB NO. 40-R3822

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

1a. TEMPORARY DESIGNATION OF VARIETY Peto 95-43	1b. VARIETY NAME Peto 95-43 8 8 N 2/16/83	FOR OFFICIAL USE ONLY PV NUMBER 8100160
2. KIND NAME tomato	3. GENUS AND SPECIES NAME Lycopersicum esculatum	FILING DATE 8/31/81 — TIME 3:00 A.M. (P.M.)
4. FAMILY NAME (BOTANICAL) Solanaceae	5. DATE OF DETERMINATION September 15, 1980	FEE RECEIVED $ 500.00 — DATE 8/31/81 $ 250.00 — 2/7/83
6. NAME OF APPLICANT(S) Petoseed Co., Inc.	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)* Rt. 4, Box 1255 Woodland, CA 95695	8. TELEPHONE AREA CODE AND NUMBER 916-666-0931
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)* corporation	10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION California 1962	11. DATE OF INCORPORATION 1962

12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS:
Mr. Paul Thomas, Director of Research, Petoseed Co., Inc.
Rt. 4, Box 1255, Woodland, CA 95695

13. **CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:**

- [X] 13A. Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
- [X] 13B. Exhibit B, Novelty Statement.
- [X] 13C. Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*
- [ ] 13D. Exhibit D, Additional Description of the Variety.

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

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

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

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

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

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

17. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.

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

8/27/81 (DATE) — Colen Wyatt (SIGNATURE OF APPLICANT)

(DATE) — (SIGNATURE OF APPLICANT)

FORM GR-470 (1-78)

13A - PETO 95-43

Peto 95-43 was developed by conventional tomato breeding methods from crosses made in Woodland, California by Jack Hanna at the Petoseed Research Center.

Large numbers of single plant selections were made from the F-2 of each cross and the following generations. Progeny testing for resistance to Fusarium Race II (*Fusarium oxysporium f. lycopersici* Race II) and Verticillium Wilt Race I (*Verticillium alboatrium*) was carried out on each generation and the susceptible selections were discarded. Single plant selections were made from field plantings in Woodland, California and at the Peto-Chile farms located near Santiago, Chile in a winter nursery.

University of California 118 x University of Florida 1346-9

↓

VF65 (University of California) x MH-1 (University of Florida) Woodland 1973

↓

F-5 Selection (VF2) x Griborsky (Russia)

↓

F7 340 (1978)

↓

F-8 Peto 95-43 (VF2)

Evaluations of selctions from the inbred line 340 (1978) were made during 1979-80 with 95-43 being selected as having the best characteristics for processing and mechanical harvest.

Exhibit A
Supplement 1

8100160

13A - PETO 95-43 (CONT'D.)

Peto 95-43 has homozygous resistance for Verticillium Wilt Race I (*Verticillium alboatrium*) and Fusarium Wilt Race II (*Fusarium oxysporium f. lycopersici* Race II).

Permanent
ARTESIAN BOND
50% COTTON FIBER
U.S.A.

8100160

Exhibit A
Supplement 2

STATEMENT OF UNIFORMITY

Peto 95-43 has homozygous resistance for Verticillium Wilt Race I (Verticillium alboatrium) and Fusarium Wilt Race II (Fusarium oxysporium f. lycopersici Race II.)

Peto foundation stock seed of Peto 95-43 was made during 1979 and found to be very uniform in the 1980 and 1981 plantings. From the plantings to date there are no off types present. The seed is now in the F-10 generation.

Exhibit A
Supplement 3

8100160

STATEMENT OF STABILITY OF PETO 95-43 TOMATO
Application No. 8100106

During the crop growing seasons 1980, and 1981 selections from the F7 340 line (1978) were evaluated in trial plots under Petoseed control in the following California Counties:

1. Imperial
2. Orange
3. Ventura
4. Fresno
5. San Joaquin
6. Sacramento
7. Yolo
8. Sutter

The performance and stability of the 95-43 was found to be very uniform in trials located in California Counties as listed above. No genetic variants were found in the 95-43 line. The stability of the 95-43 was further determined in plantings under control of Petoseed in Ohio, Michigan, Maryland, and Florida during 1980 and 1981. Seed increases of the Peto 95-43 were made in 1980 and 1981 under the control of the Stock Seed Department of Petoseed in Saticoy, California. All lots are identified as Peto 95-43. The Peto 95-43 line was found to be stable for 3 generations. No genetic variants were found in the seed increases of field plantings.

Additional plantings of Peto 95-43 were observed in June, 1982 in Imperial and Fresno Counties and found to be uniform.

Peto 95-43 shows to be consistently a mid-early tomato and days to harvest are 5 to 10 days earlier than Peto 94C. April 1 plantings in Yolo County, California requires 105 days from seeding to mechanical harvest for Peto 95-43 and

8100160

110 days for 94C. January plantings of Peto 95-43 requires 125 days from emergence to mechanical harvest and Peto 94C requires 133 days. Comparative plantings in the tomato production areas of California show that Peto 95-43 and Peto 94C will have a differential harvest date of 5 to 7 days. For the same seeding date the grower will harvest Peto 95-43 for 5 to 7 days then can proceed to harvest 94C.

Standard testing procedures for Race 2 Fusarium Wilt resistance were conducted by the Plant Pathology Department of Petoseed in Woodland, California. The results of the Fusarium resistance test show that Peto 95-43 is 100% resistant.

8100160

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Arpil 13, 1984

Dr. Kenneth H. Evans, Commissioner
Plant Variety Protection Office
United States Department of Agriculture
National Agricultural Library Building
Beltsville, Maryland 20705

Dear Dr. Evans:

SUBJECT: TOMATO CERTIFICATE NO. 8100159 (PETO 94-C) AND 8100160 (PETO 95-43)

Revised Exhibit B for Peto 95-43 Part A. Rec'd 4/17/84 (orig. with rest of letter) CRB 4/13/84

We will follow your suggestion of March 26, 1984 in regards to clarifying the PVP for Peto 94-C and Peto 95-43 by stating that Peto 94-C is most similar to Peto 94 and Peto 95-43 is most similar to Peto 95.

The major differences as noted between Peto 94-C and Peto 94 are as follows:

1. Peto 94-C is 9-11 days earlier than Peto 94 based upon average number of days from emergence to 90% ripe (Peto 94-C averages 115 to 122 days to 90% maturity compared to Peto 94, which averages 124 to 131 days to 90% maturity).

2. Peto 94-C has smaller plant size than Peto 94 based upon measurements of plants at 90% ripe (Peto 94-C 119 cm to 122 cm and Peto 94 128 cm to 131 cm).

The major differnces between Peto 95-43 and Peto 95 are as follows:

1. Peto 95-43 has slightly larger fruit sizes, averaging 2.58 to 2.7 ounces per fruit as compared to Peto 95, which averages 2.20 to 2.26 ounces per fruit.

8100160

Exhibit B
Part B.
'Peto 95-43'

AMENDED EXHIBIT B STATEMENT - PETO 95-43 TOMATO

The major differences between Peto 95-43 and Peto 95 are as follows:

1. Peto 95-43 has slightly larger fruit sizes, averaging 2.58 to 2.7 ounces per fruit as compared to Peto 95, which averages 2.20 to 2.26 ounces per fruit.

2. Peto 95-43 has a lower percentage of stems remaining on the fruit after maching harvested (Peto 95-43 had an average of 12%-17% stems attached to fruit as compared to Peto 95 with an average stem retention of 32% to 50%).

orig Rec'd 6/11/84

6/11/84

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, GRAIN, AND SEED DIVISION
BELTSVILLE, MARYLAND 20705

OBJECTIVE DESCRIPTION OF VARIETY
TOMATO (Lycopersicon esculentum Mill.)

Name of applicant	Temporary designation	Variety Name
Petoseed Co., Inc.	Peto 95-43	Peto 95-43 2/16/83
Address (Street and No. or R.F.D. No., City, State, Zip) Rt. 4, Box 1255 Woodland, CA 95695		FOR OFFICIAL USE ONLY PVPO NUMBER 8100160

Choose responses which best represent your variety in the characters below. When a single quantitative value is requested (e.g. fruit weight), your answer should be the mean of an adequate, unbiased sample of plants. The applicant variety should be compared with at least one well-known standard check variety of the same type, and grown in the same trial(s). The characters on this form should be described from plants grown under normal conditions of culture for the variety. Indicate by a check whether trial data are from greenhouse ____ or field x plantings. Trials direct-seeded x ____ or transplanted ____. Give locations and dates of trials Woodland and Saticoy California 1979-80. Use leading zeroes when necessary (e.g. 09 or 081, etc.). Complete this form as fully as possible for best characterization of the variety.

1. SEEDLING: (2-15 cm, well-illuminated)

[2] Anthocyanin in hypocotyl: 1 = absent 2 = present
[1] Cotyledon: 1 = normal 2 = giant

2. MATURE PLANT:

[3] Growth: 1 = indeterminate 2 = semi-determinate 3 = determinate
[2] Size (compared to others of its growth type): 1 = small 2 = medium 3 = large
[2] Habit: 1 = sprawling (decumbent) 2 = semi-erect 3 = erect
[2] Foliage cover: 1 = light 2 = moderate 3 = heavy

3. STEM:

[2] Internode length (between the 1st and 4th inflorescences):
1 = short ( ) 2 = intermediate ( ) 3 = long ( )
[3] Branching: 1 = sparse (Brehm's Solid Red) 2 = intermediate ( )
3 = profuse (UC82)
[1] Branching at cotyledonary or first leafy node: 1 = present 2 = absent
[2] Pubescence: 1 = smooth (no long hairs) 2 = sparsely hairy (scattered long hairs)
3 = densely hairy or canescent
[3] No. of nodes below the first inflorescence:
1 = few ( ) 2 = intermediate ( ) 3 = many ( )
[1] No. of nodes (leaves) between inflorescences
[2] Thickness: 1 = slender, weak 2 = medium thickness 3 = thick, stiff

4. LEAF (Mature leaf under the 1st to 3rd inflorescence):

[1] Type: 1 = tomato 2 = potato
[2] Division: 1 = once-pinnate 2 = intermediate (pinnate-bipinnate)
3 = bipinnate, many small leaflets with the large ones
[1] Attitude: 1 = semi-erect 2 = horizontal 3 = drooping
[2] Leaflet blade: 1 = thin 2 = medium 3 = thick
[2] Bases of major leaflets: 1 = even 2 = oblique (the sides offset on petiole)
[1] Margins of major leaflets: 1 = nearly entire 2 = shallowly toothed or scalloped
3 = deeply toothed or cut, especially towards base
[1] Marginal rolling: 1 = absent 2 = present

4. LEAF (Mature leaf under the 1st to 3rd inflorescences) (continued):

[1] Surface of major leaflets: 1 = smooth 2 = rugose (bumpy or veiny)
[1] Leaflet: 1 = normal 2 = slightly wilty 3 = wilty
[2] Shape of major leaflets: 1 = broadly ovate 2 = ovate to lanceolate
3 = slender and lanceolate, tapered to a point
[2] Pubescence or hairiness: 1 = smooth 2 = normal 3 = wooly
[4] Color of leaflets: 1 = light green (Earlinorth) 2 = medium green ( )
3 = gray-green ( ) 4 = dark green (UC82)
[4] Color of leaf on check variety (same scale): Variety _____

5. INFLORESCENCE:

[1] Type: 1 = simple (racemose) 2 = forked (2 major axes) 3 = compound (much branched
[2] No. of flowers setting fruit (in 2nd or 3rd inflorescence):
1 = 1-4, 2 = 4-8, 3 = 8-12, 4 = 12 or more

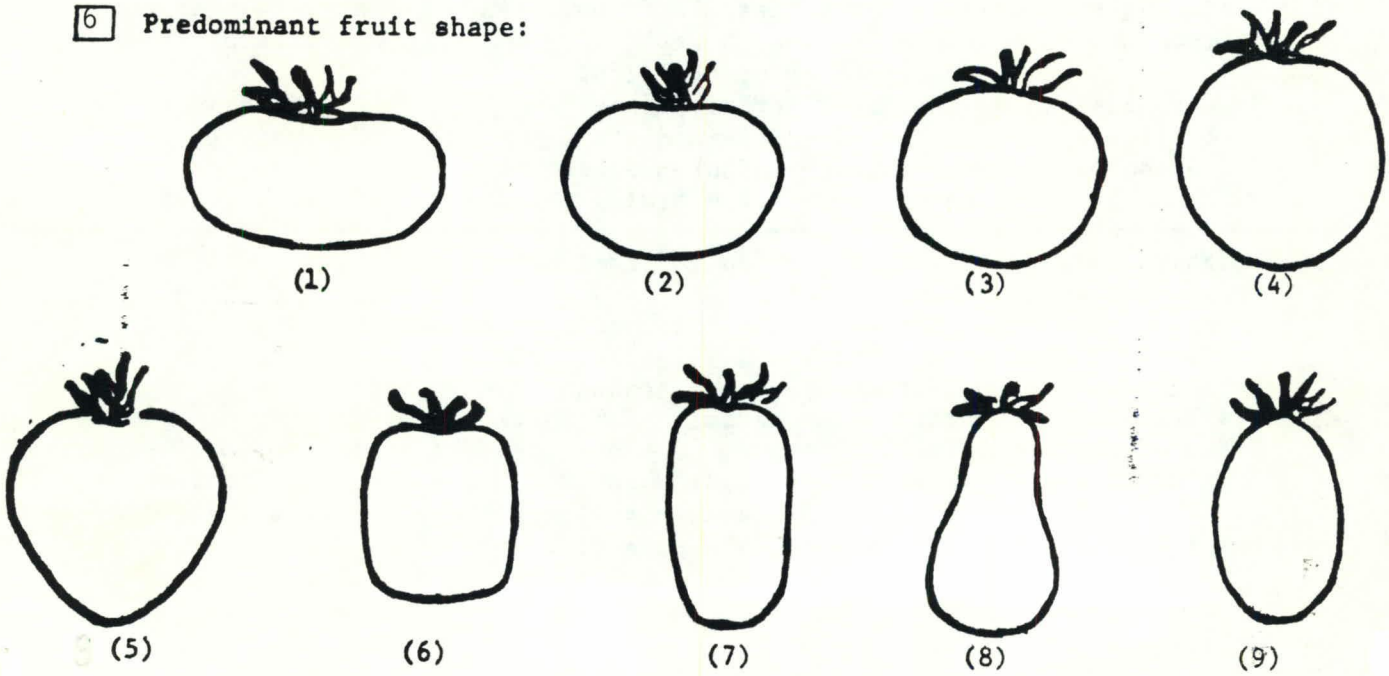
6. FLOWER:

[1] Calyx: 1 = normal (lobes awl-shaped) 2 = macrocalyx (lobes large, leaflike)
3 = fleshy
[1] Flower color: 1 = yellow 2 = old gold 3 = white or tan
[1] Style exsertion: 1 = included 2 = even with stamens 3 = exserted
[1] Style pubescence: 1 = absent 2 = sparse 3 = dense
[1] Anthers: 1 = all fused into tube 2 = separating into 2 or more groups at anthesis
[1] Fasciation (1st flower of 2nd or 3rd infloresence):
1 = absent 2 = occasionally present 3 = frequently present

7. FRUIT (3rd fruit of 2nd or 3rd cluster):

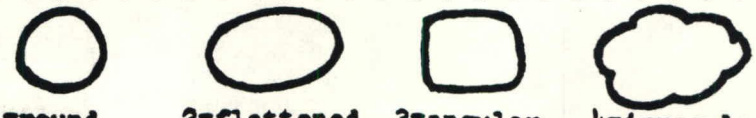
[1] Abscission layer: 1 = present (pedicellate) 2 = absent (jointless)
[0 8] mm. Length of pedicel (from abscission layer or joint to calyx attachment)
[5] Mature fruit: Maximum diameter:
1 = small cherry (< 20 mm) 2 = large cherry (20-35 mm)
3 = cocktail (35-48 mm) 4 = U.S. extra small (48-54 mm)
5 = U.S. small (54-58 mm) 6 = U.S. medium (58-64 mm)
7 = U.S. large (64-73 mm) 8 = U.S. extra large (73-88 mm)
9 = U.S. maximum large (88-100 mm) 10 = U.S. maximum large (> 100 mm)
[4] Maximum diameter of check variety, same classes as above
(Specify name) UC82
[0 7 9] g Fruit weight [0 7 1] g Check variety UC82

[6] Predominant fruit shape:



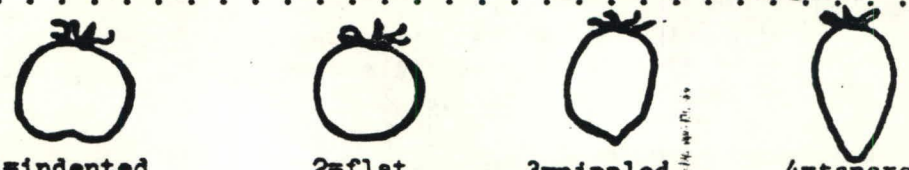
7. FRUIT (3rd fruit of 2nd or 3rd cluster):

[1] Shape of transverse section:



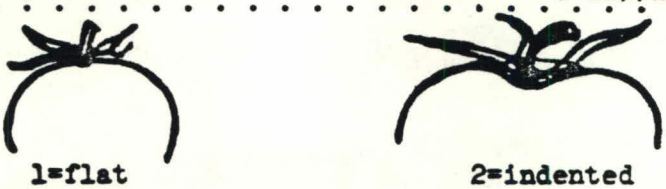
1=round 2=flattened 3=angular 4=irregular

[2] Shape of blossom end:



1=indented 2=flat 3=nippled 4=tapered

[1] Shape of stem end:



1=flat 2=indented

[1] Shape of pistil scar:

1=dot 2=stellate 3=linear 4=irregular

[1] Fruit surface: 1 = smooth 2 = slightly fasciated 3 = moderately fasciated
[1] Fruit color (mature-green stage):
1 = light green ('Lanai', VF145-F5) 2 = Lt. gray-green ( )
3 = apple green ('Heinz 1439 VF') 4 = dark green ( )
[2] Fruit pattern (mature-green stage): 1 = green shouldered 2 = uniform green
[5] Mature fruit color (full-ripe): 1 = white 2 = yellow 3 = tangerine
4 = pink 5 = red 6 = brownish-red
7 = greenish 8 = other (specify) _____
[2] Flesh color (full-ripe): 1 = yellow 2 = red 3 = crimson 4 = other _____
[1] Epidermis: 1 = normal 2 = easy-peel
[2] Epidermis color: 1 = colorless 2 = yellow
[2] Epidermis thickness: 1 = thin 2 = average 3 = thick
[3] Thickness of pericarp: 1 = thin (< 3 mm) 2 = medium (3-6 mm) 3 = thick (> 6 mm)
[3] Thickness of pericarp of check variety (same scale) Variety: _____
[1] Core size: 1 = coreless 2 = small 3 = medium 4 = large
[1] Core shape: 1 = solid, unbranched 2 = branched
[1] Core texture: 1 = soft, edible 2 = tough or fibrous
[1] Stem scar size: 1 = small ( ) 2 = medium ( ) 3 = large ( )
[2] No. of locules: 1 = two 2 = three and four 3 = five or more
[6] Fruit firmness[1] (minimum table-ripe):
1 = extra-soft ('Gardener') 2 = very soft ('Valiant') 3 = soft ('Campbell 28')
4 = fairly firm ('Tropic') 5 = firm ('MH-1') 6 = very firm ('UC-82')

8. PHENOLOGY (Growing degree days, or heat units on a base temperature of 51° F are preferable--but you may report either growing degree days or calendar days. Circle either "days" for calendar days, or "heat units" for growing degree days):

Days/heat units from seed to first open flower:
[44] days, Application variety
[45] days, Check variety No. 1 UC82
[50] days, Check variety No. 2 VF145-7879

Days/heat units from seed/transplant (indicate which) to first ripe fruit:
[87] days, Application variety
[094] days, Check variety No. 1 UC82
[098] days, Check variety No. 2 VF145-7879

[1]For definitions of these subjective terms see Kader & Morris (1976) In: Proc. 2nd Tomato Quality Workshop.

8100160

8. PHENOLOGY (Growing degree days, or heat units on a base temperature of 51° F are preferable--but you may report either growing degree days or calendar days. Circle either "days" or calendar days, or "heat units" for growing degree days) (Continued):

Days/heat units from seed/transplant (indicate which) to once-over harvest, if applicable:

[1][0][5] days, Application variety

[1][1][4] days, Check variety No. 1 UC82

[1][2][5] days, Check variety No. 2 VF145-7879

Days/heat units from breaker to full-ripe stage:

[ ][ ] days, Application variety

[ ][ ][ ] days, Check variety No. 1 _____

[ ][ ][ ] days, Check variety No. 2 _____

Shelf life of ripe fruit:

[ ][ ] days, Application variety

[ ][ ] days, Check variety No. 1 _____

[ ][ ] days, Check variety No. 2 _____

[4] Fruiting season: 1 = long ('Marglobe') 2 = medium ('Westover') 3 = short, concentrated ('VF 145') 4 = very concentrated ('UC 82')

[2] Relative maturity: 1 = early 2 = medium early 3 = medium 4 = medium late 5 = late

9. ADAPTATION (if more than one category applies, list all in rank order):

[1][1] Culture: 1 = field 2 = greenhouse 1 = unstaked 2 = staked or trellised

[ ][ ] [3] Principal use(s): 1 = home garden 2 = fresh market 3 = processing 4 = other _____

[ ][ ] [2] Machine harvest: 1 = not adapted 2 = adapted

Recommended region: 1 = Northeast/Midatlantic 2 = Southeast 3 = Midwest/Great Lakes 4 = South-central 5 = Great Plains 6 = Intermountain West 7 = Northwest 8 = Central California 9 = Southwest/So. California 10 = General 11 = Other (specify) _____

[2] Growing season temperature: 1 = cool 2 = normal warm 3 = hot 4 = general

[3] Growing season humidity: 1 = humid 2 = semi-arid 3 = general

[1] Soils: 1 = mineral 2 = organic 3 = general

10. RESISTANCE OR TOLERANCE TO ENVIRONMENTAL STRESS:

[3] High temperature fruit set (subjective evaluation based on fruit set at temperatures that normally inhibit set in area of evaluation):
1 = poor 2 = fair 3 = good ('Summertime') AREA _____

[ ] Low temperature fruit set (subjective evaluation based on fruit set at low temperatures that normally inhibit set): 1 = poor 2 = fair 3 = good ('Veecrop')
AREA _____

[ ] Low temperature seed germination: 1 = poor ( ) 2 = fair ( ) 3 = good ( )

11. RESISTANCE TO FRUIT DISORDERS (Use code: 0=unknown, 1=susceptible, 2=resistant):

[0] Blossom end rot
[2] Catface
[2] Cracking, concentric
[0] Gold fleck
[2] Bursting
[2] Cracking, radial
[0] Fruit pox
[0] Graywall or blotchy ripening

12. DISEASE AND PEST REACTION (Use code: 0=not tested, 1=susceptible, 2=resistant) If claim of novelty is based wholly or in part upon disease resistance, trial data should be appended (Exhibit D) and should include date and location of trial(s), method of testing, reaction of application variety, and reaction of check varieties (identified by name).

Viral Diseases:

- [0] Cucumber mosaic
- [1] Tobacco mosaic, Race 0
- [1] Tobacco mosaic, Race 2^2 (Tm 2^2)
- [ ] Other (specify) _____
- [0] Curly top
- [1] Tobacco mosaic, Race 1 (Tm 1)
- [0] Tomato spotted wilt
- [0] Potato-Y virus
- [1] Tobacco mosaic, Race 2 (Tm 2
- [0] Tomato yellows

Bacterial Diseases:

- [0] Bacterial canker (Corynebacterium michiganense)
- [1] Bacterial speck (Pseudomonas tomato)
- [0] Bacterial wilt (Pseudomonas solanacearum)
- [ ] Other bacterial disease (specify) _____
- [0] Bacterial soft rot (Erwinia carotovora)
- [1] Bacterial spot (Xanthomonas vesicatorium)

Fungal Diseases:

- [0] Anthracnose (Colletotrichum spp.)
- [0] Brown root rot or corky root (Pyrenochaeta lycopersici)
- [0] Early blight (Alternaria solani) defoliation
- [2] Fusarium wilt, Race 2 (F. oxysporum f. lycopersici)
- [0] Late blight, Race 0 (Phytophthora infestans)
- [0] Leaf mold, Race 1 (Cladosporium fulvum)
- [0] Leaf mold, Race 3 (C. fulvum)
- [0] Nailhead spot (Alternaria tomato)
- [0] Rhizoctonia soil rot (R. solani)
- [0] Southern blight (Sclerotium rolfsii)
- [2] Verticillium wilt, Race 1 (V. albo-atrum)
- [ ] Other fungal diseases (specify) _____
- [0] Botrytis rot or mold (B. cinerea)
- [2] Collar rot or stem canker (Alternaria solani)
- [2] Fusarium wilt, Race 1 (F. oxysporum f. lycopersic
- [0] Gray leaf spot (Stemphylium solani, S. floridanu
- [0] Late blight, Race 1 (Phytophthora infestans)
- [0] Leaf mold, Race 2 (C. fulvum)
- [0] Leaf mold, other races (specify) _____
- [0] Phytophthora root rot (P. parasitica)
- [0] Septoria leaf blight (Septoria spp.)
- [0] Target leafspot (Corynespora casiicola)
- [0] Verticillium wilt, Race 2 (V. albo-atrum)

Insect and Pests:

- [0] Colorado potato beetle (Leptinotarsa decemlineata)
- [1] Root knot nematode (Meloidogyne incognita)
- [0] Spider mites (Tetranychus spp.)
- [0] Sugar beet army worm (Spodopfora exigua)
- [0] Tobacco flea beetle (Epitrix hirtipennis)
- [1] Tomato hornworm (Manduca quinquemaculata)
- [1] Tomato fruitworm (Heliothis zea)
- [1] Whitefly (Trialeurodes vaporariorum)
- [ ] Other (specify) _____

Pollutants:

[0] Ozone [0] Sulfur dioxide [0] Other (specify) _____

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SECURITY AGREEMENT

By

SEMINIS VEGETABLE SEEDS, INC.,

SEMINIS, INC.

and

THE DOMESTIC SUBSIDIARIES PARTY HERETO,
as Grantors,

and

CITICORP NORTH AMERICA, INC.,
as Collateral Agent

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