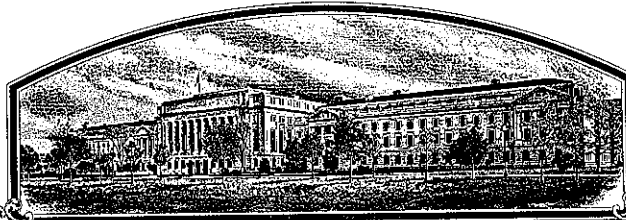


No.

880059



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

North Carolina Agricultural Research Service

**Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture**

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED 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 *eighteen* 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 USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (AT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

TOMATO

'NC 8288'

*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 29th day of November in
the year of our Lord one thousand nine
hundred and ninety-one.*

Attest.

Kenneth W. Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Ed Madigan
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE
 WAREHOUSE & SEED DIVISION

FORM APPROVED: OMB NO. 0581-0055

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

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

1. NAME OF APPLICANT(S) N. C. Agricultural Research Service Dr. R. G. Gardner (Breeder)		2. TEMPORARY DESIGNATION Experimental	3. VARIETY NAME NC 8288
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) N. C. State University Box 7601 Raleigh, NC 27695-7601		5. PHONE (Include area code) 919-737-2717 704-684-3562 (breeder)	FOR OFFICIAL USE ONLY VPVO NUMBER 8800059
6. GENUS AND SPECIES NAME Lycopersicon esculentum	7. FAMILY NAME (Botanical) Solanaceae		FILING DATE February 1, 1988 TIME 1:30 <input type="checkbox"/> A.M. <input checked="" type="checkbox"/> P.M.
8. KIND NAME Tomato	9. DATE OF DETERMINATION March 30, 1987		FEES RECEIVED AMOUNT FOR FILING \$ 1800.00 DATE February 1, 1988 AMOUNT FOR CERTIFICATE \$ 200.00 DATE Oct. 29, 1991
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.)			
11. IF INCORPORATED, GIVE STATE OF INCORPORATION			12. DATE OF INCORPORATION

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
 Michael W. Baker, Manager
 N. C. Foundation Seed Producers, Inc.
 P. O. Box 33245, Method Station
 Raleigh, NC 27636
 PHONE (Include area code): 919-737-2821

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

a. <input checked="" type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)	c. <input checked="" type="checkbox"/> Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.)
b. <input checked="" type="checkbox"/> Exhibit B, Novelty Statement	d. <input checked="" type="checkbox"/> Exhibit D, Additional Description of the Variety

15. 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) of the Plant Variety Protection Act.)
 Yes (If "Yes," answer items 16 and 17 below) No

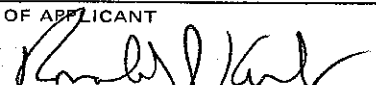
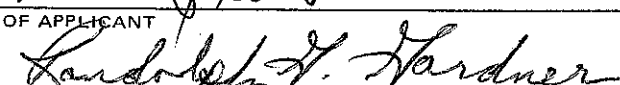
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
 Yes No

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
 Foundation Registered Certified

18. DID THE APPLICANT(S) FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
 Yes (If "Yes," give date)
 No

19. HAS THE VARIETY BEEN OFFERED FOR SALE OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
 Yes (If "Yes," give names of countries and dates)
 No

20. The applicant(s) declare(s) that a viable sample of basic seeds 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 Protection Act.
 Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT  (NCARS)	DATE 11/17/87
SIGNATURE OF APPLICANT  (Breeder)	DATE 10/22/87

Tomato

NC 8288

14A. Exhibit A:

Pedigree: 'Piedmont' x 'Florida 1B'

F₇ = NC 8288

NC 8288, an inbred line in the F₇ generation, was developed by the pedigree system of breeding. Single plant selections were made in the F₂ through F₅ generations grown in field plots at Fletcher, NC. A special bulk was made in the F₆ generation. Seedling inoculation tests in the greenhouse and trials on naturally infested soil showed the F₂ and subsequent generations to be homozygous resistant to race 1 (Ve gene) of Verticillium dahliae. The F₄ was determined homozygous resistant to races 1 and 2 (I-2 gene) of Fusarium oxysporum f. sp. lycopersici in greenhouse seedling inoculation tests.

NC 8288 appeared stable and uniform in the F₄ through F₆ generations in research station plots and in trials of several thousand plants in grower fields. The only offtypes observed were infrequent male steriles, which did not exceed the percentage normally seen in other varieties.

8800059

14B. Exhibit B: Novelty Statement

NC 8288 is most similar to 'Florida 1B'. NC 8288 differs from 'Florida 1B' in having the u gene for uniform light green fruit color of non-ripe fruit, compared to the dark green shoulder color of 'Florida 1B'.

U.S. DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE
 LIVESTOCK, MEAT, GRAIN AND SEED DIVISION
 PLANT VARIETY PROTECTION OFFICE
 BELTSVILLE, MARYLAND 20705

EXHIBIT C
 (Tomato)

OBJECTIVE DESCRIPTION OF VARIETY

TOMATO (*Lycopersicon esculentum* Mill.)

NAME OF APPLICANT(S) N. C. Agricultural Research Service Dr. R. G. Gardner (Breeder)	TEMPORARY DESIGNATION Experimental	VARIETY NAME NC 8288
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) N. C. State University Box 7601 Raleigh, NC 27695-7601	FOR OFFICIAL USE ONLY	
	PVPO NUMBER	
	8800059	

Choose responses for the following characters which best fit your variety. Complete this form as fully as possible for best characterization of the variety. When a single quantitative value is requested (e.g., fruit weight), your answer should be the mean of an adequate-sized, unbiased sample of plants. Use leading zeroes when necessary (e.g., or , etc.). The applicant variety should be compared with at least one well-known standard check variety of the same type (see list of recommended check varieties below), and grown in the same trials. 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 plantings. Trials direct-seeded _____ or transplanted ; staked or unstaked _____. Give locations and dates of seeding and transplanting here: Fletcher, North Carolina. Seeding dates: 4/20/87 and 5/18/87; transplant dates: 5/22/87 and 6/24/87

COMPARISONS SHOULD BE MADE TO ONE OR MORE CHECK VARIETIES IN THE FOLLOWING LIST, IF AT ALL POSSIBLE. ENTER THE NUMBER OF THE CHECK IN BOXES WHERE IDENTITY OF CHECK IS REQUESTED.

- | | | | |
|------------------|-----------------------|---------------|--|
| 1 = Ace 55 VF | 7 = Homestead 24 | 13 = Red Rock | 19 = VF 134 |
| 2 = Campbell 37 | 8 = Marglobe | 14 = Roma VF | 20 = US 28 |
| 3 = Chico III | 9 = Murietta | 15 = Rutgers | 21 = VF 145 B 7879 |
| 4 = Flora Dade | 10 = New Yorker | 16 = Sunray | 22 = Other (Specify) <u>'Florida 1B'</u> |
| 5 = Florida MH-1 | 11 = Ohio MR-13 | 17 = Tropic | |
| 6 = Heinz 1350 | 12 = Red Cherry Large | 18 = UC 82 | |

1. SEEDLING:

Anthocyanin in hypocotyl of 2-15 cm. seedling: 1 = Absent 2 = Present Habit of 3-4 week old seedling: 1 = Normal 2 = Compact

2. MATURE PLANT (at maximum vegetative development):

Cm. Height

Growth: 1 = Indeterminate 2 = Determinate

Form: 1 = Lax, open 2 = Normal 3 = Compact 4 = Dwarf 5 = Brachytic

Size of canopy (compared to others of similar type): 1 = Small 2 = Medium 3 = Large

Habit: 1 = Sprawling (decumbent) 2 = Semi-erect 3 = Erect ('Dwarf Champion')

3. STEM:

Branching: 1 = Sparse ('Brehm's Solid Red', 'Fireball') 2 = Intermediate ('Westover') 3 = Profuse ('UC 82')

Branching at cotyledonary or first leafy node: 1 = Present 2 = Absent

No. of nodes below the first inflorescence: 1 = 1-4 2 = 4-7 3 = 7-10 4 = 10 or more

No. of nodes between early (1st - 2nd, 2nd - 3rd) inflorescences. No. of nodes between later-developing inflorescences.

Pubescence on younger stems: 1 = Smooth (no long hairs) 2 = Sparsely hairy (scattered long hairs) 3 = Moderately hairy 4 = Densely hairy or wooly

4. LEAF (mature leaf beneath the 3rd inflorescence):

Type: 1 = Tomato 2 = Potato ('Trip-L-Crop') Morphology (choose illustration on pg. 5 of this form that is most similar)

Margins of major leaflets: 1 = Nearly entire 2 = Shallowly toothed or scalloped 3 = Deeply toothed or cut, esp. towards base

Marginal rolling or wiltiness: 1 = Absent 2 = Slight 3 = Moderate 4 = Strong

Onset of leaflet rolling: 1 = Early-season 2 = Mid-season 3 = Late season

4. LEAF (mature leaf beneath the 3rd inflorescence -- continued):

- 1 Surface of major leaflets: 1 = Smooth 2 = Rugose (bumpy or veiny)
 2 Pubescence: 1 = Smooth (no long hairs) 2 = Normal 3 = Hirsute 4 = Wooly

5. INFLORESCENCE (make observations on 3rd inflorescence):

- 1 Type: 1 = Simple 2 = Forked (2 major axes) 3 = Compound (much branched)
 0 6 Number of flowers in inflorescence, average
 2 Leafy or "running" inflorescences: 1 = Absent 2 = Occasional 3 = Frequent

6. FLOWER:

- 1 Calyx: 1 = Normal, lobes awl-shaped 2 = Macrocalyx, lobes large, leaflike 3 = Fleshy
 1 Calyx-lobes: 1 = Shorter than corolla 2 = Approx. equalling corolla 3 = Distinctly longer than corolla
 1 Corolla color: 1 = Yellow 2 = Old gold 3 = White or tan
 2 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 inflorescence): 1 = Absent 2 = Occasionally present 3 = Frequently present

7. FRUIT (3rd fruit of 2nd or 3rd cluster): For the first 5 characters below, match your variety with the most similar illustration on pg. 5 of this form.

- 2 Typical fruit shape: 1 Shape of transverse section: 2 Shape of stem end:
 2-3 Shape of blossom end: 1 Shape of pistil scar:

- 1 Abscission layer: 1 = Present (pedicellate) 2 = Absent (jointless) 1 Point of detachment of fruit at harvest: 1 = At pedicel joint 2 = At calyx attachment
 1 0 mm length of pedicel (from joint to calyx attachment)
 0 6 7 mm length of mature fruit (stem axis) 0 7 0 mm length, check var. no. 2 2
 0 9 0 mm diameter of fruit at widest point 0 9 0 mm diameter, check var. no. 2 2
 3 1 3 g weight of mature fruit 2 8 1 g weight, check var. no. 2 2
 3 No. of locules: 1 = Two 2 = Three and four 3 = Five or more
 1 Fruit surface: 1 = Smooth 2 = Slightly rough 3 = Moderately rough or ribbed
 1 Fruit base color (mature-green stage): 1 = Light green ('Lanai', 'VF145-F5') 2 = Light gray-green ('Westover')
 3 = Apple or medium green ('Heinz 1439 VF') 4 = Yellow green
 5 = Dark green
 1 Fruit pattern (mature-green stage): 1 = Uniform green 2 = Green-shouldered 3 = Radial stripes on sides of fruit
 Shoulder color if different from base: 1 = Dark green 2 = Grey green 3 = Yellow green
 5 Fruit color, full-ripe: 1 = White 2 = Yellow 3 = Orange 4 = Pink 5 = Red
 6 = Brownish 7 = Greenish 8 = Other (Specify)
 3 Flesh color, full-ripe: 1 = Yellow 2 = Pink 3 = Red/Crimson 4 = Orange 5 = Other (Specify)
 1 Flesh color: 1 = Uniform 2 = With lighter and darker areas in walls
 3 Locular gel color of table-ripe fruit: 1 = Green 2 = Yellow 3 = Red
 2 Ripening: 1 = Blossom-to-stem end 2 = Uniform

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

<input type="checkbox"/> 1	Ripening:	1 = Inside out	2 = Uniformly	3 = Outside in	<input type="checkbox"/> 2	Stem scar size:	1 = Small ('Roma')	2 = Medium ('Rutgers')	3 = Large
<input type="checkbox"/> 2	Epidermis color:	1 = Colorless	2 = Yellow						
<input type="checkbox"/> 1	Epidermis:	1 = Normal	2 = Easy-peel		<input type="checkbox"/> 2	Core:	1 = Coreless (absent or smaller than 6x6 mm)	2 = Present	
<input type="checkbox"/> 2	Epidermis texture:	1 = Tender	2 = Average	3 = Tough					
<input type="checkbox"/> 3	Thickness of pericarp				<input type="checkbox"/> 3	Thickness of pericarp, check var. no.	<input type="checkbox"/> 2	<input type="checkbox"/> 2	
		1 = Under 3 mm	2 = 3-6 mm	3 = 6-9 mm			4 = Over 9 mm		

8. RESISTANCE TO FRUIT DISORDERS (Use code: 0 = Unknown, 1 = Susceptible, 2 = Resistant)

<input type="checkbox"/> 2	Blossom end rot	<input type="checkbox"/> 2	Catface	<input type="checkbox"/> 2	Fruit pox	<input type="checkbox"/> 2	Zippering
<input type="checkbox"/> 2	Blotchy ripening	<input type="checkbox"/> 2	Cracking, concentric	<input type="checkbox"/> 2	Gold fleck	<input type="checkbox"/>	Other (Specify)
<input type="checkbox"/> 2	Bursting	<input type="checkbox"/> 2	Cracking, radial	<input type="checkbox"/> 1	Graywall		

9. DISEASE AND PEST REACTION (Use code: 0 = Not tested, 1 = Susceptible, 2 = Resistant). NOTE: If claim of novelty is based wholly or in substantial part upon disease resistance, trial data should be appended. These should specify the method of testing, the reaction of the application variety, and reaction of well-known check varieties grown in the trial (identified by name).

VIRAL DISEASES:

<input type="checkbox"/> 0	Cucumber mosaic	<input type="checkbox"/> 0	Tobacco mosaic, Race 0	<input type="checkbox"/> 0	Tobacco mosaic, Race 2 ²
<input type="checkbox"/> 0	Curly top	<input type="checkbox"/> 0	Tobacco mosaic, Race 1	<input type="checkbox"/> 0	Tomato spotted wilt
<input type="checkbox"/> 0	Potato-Y virus	<input type="checkbox"/> 0	Tobacco mosaic, Race 2	<input type="checkbox"/> 0	Tomato yellows
<input type="checkbox"/>	Other virus (Specify)				

BACTERIAL DISEASES:

<input type="checkbox"/> 1	Bacterial canker (<i>Corynebacterium michiganense</i>)	<input type="checkbox"/> 0	Bacterial spot (<i>Xanthomonas vesicatorium</i>)
<input type="checkbox"/> 0	Bacterial soft rot (<i>Erwinia carotovora</i>)	<input type="checkbox"/> 0	Bacterial wilt, (<i>Pseudomonas solanacearum</i>)
<input type="checkbox"/> 0	Bacterial speck (<i>Pseudomonas tomato</i>)	<input type="checkbox"/> 0	Other bacterial disease (Specify)

FUNGAL DISEASES:

<input type="checkbox"/> 0	Anthrachnose (<i>Colletotrichum</i> spp.)	<input type="checkbox"/> 0	Leaf mold, Race 1 (<i>Cladosporium fulvum</i>)
<input type="checkbox"/> 0	Brown root rot or corky root, (<i>Pyrenochaeta lycopersici</i>)	<input type="checkbox"/> 0	Leaf mold, Race 2
<input type="checkbox"/> 0	Collar rot or stem canker, (<i>Alternaria solani</i>)	<input type="checkbox"/> 0	Leaf mold, Race 3
<input type="checkbox"/> 1	Early blight defoliation, (<i>Alternaria solani</i>)	<input type="checkbox"/> 0	Leaf mold, other races (Specify)
<input type="checkbox"/> 2	Fusarium wilt, Race 1, (<i>F. oxysporum f. lycopersici</i>)	<input type="checkbox"/> 0	Nailhead spot (<i>Alternaria tomato</i>)
<input type="checkbox"/> 2	Fusarium wilt, Race 2	<input type="checkbox"/> 0	Septoria leafspot (<i>S. lycopersici</i>)
<input type="checkbox"/> 0	Fusarium wilt, Race 3	<input type="checkbox"/> 0	Target leafspot (<i>Corynespora casicola</i>)
<input type="checkbox"/> 0	Gray leaf spot (<i>Stemphylium</i> spp.)	<input type="checkbox"/> 2	Verticillium wilt, Race 1 (<i>V. albo-atrum</i>)
<input type="checkbox"/> 0	Late blight, Race 0, (<i>Phytophthora infestans</i>)	<input type="checkbox"/> 0	Verticillium wilt, Race 2
<input type="checkbox"/> 0	Late blight, Race 1	<input type="checkbox"/>	Other fungal disease
		<input type="checkbox"/>	Other fungal disease

9. DISEASE AND PEST REACTION (Use code: 0 = Not tested, 1 = Susceptible, 2 = Resistant - Continued)

INSECTS AND PESTS:

- | | | | |
|----------------------------|--|----------------------------|--|
| <input type="checkbox"/> 0 | Colorado potato beetle (<i>Leptinotarsa decemlineata</i>) | <input type="checkbox"/> 0 | Tomato hornworm (<i>Manduca quinquemaculata</i>) |
| <input type="checkbox"/> 0 | Southern root knot nematode (<i>Meloidogyne incognita</i>) | <input type="checkbox"/> 0 | Tomato fruitworm (<i>Heliothis zea</i>) |
| <input type="checkbox"/> 0 | Spider mites (<i>Tetranychus</i> spp.) | <input type="checkbox"/> 0 | Whitefly (<i>Trialeurodes vaporariorum</i>) |
| <input type="checkbox"/> 0 | Sugar beet army worm (<i>Spodoptera exigua</i>) | <input type="checkbox"/> | Other (Specify) _____ |
| <input type="checkbox"/> 0 | Tobacco flea beetle (<i>Epitrix hirtipennis</i>) | | |

POLLUTANTS:

- | | | | | | |
|----------------------------|-------|----------------------------|----------------|--------------------------|-----------------------|
| <input type="checkbox"/> 0 | Ozone | <input type="checkbox"/> 0 | Sulfur dioxide | <input type="checkbox"/> | Other (Specify) _____ |
|----------------------------|-------|----------------------------|----------------|--------------------------|-----------------------|

10. CHEMISTRY AND COMPOSITION OF FULL-RIPE FRUITS: Suggested test methods may be found in "Tomato Products," 5th ed., National Canners Assn. Bull. 27-L. Please specify test methods or give a reference to methods used. Fill in table below with values for the new variety and for at least one well-known check variety of similar type grown in the same trial. Specify names or numbers of check varieties.

	SUBMITTED VARIETY	Check Variety	Check Variety	Check Variety
pH				
Titrateable acidity, as % citric				
Total solids (dry matter, seeds and skin removed)				
Soluble solids, as °Brix				

11. PHENOLOGY: Express length of developmental stages either as calendar days or as heat units (growing degree days), in degrees Celsius. If heat units are used, indicate the base temperature used in their calculation here _____ °C. See paper by Warnock under "References" for method. Give comparative data for at least one check variety; identify checks by name or by number from table on page 1.

	APPLICATION VARIETY	Check variety	Check variety	Check variety
Seeding to 50% flower (1 open flower on 50% of plants)				
Seed to once-over harvest (if applicable)				

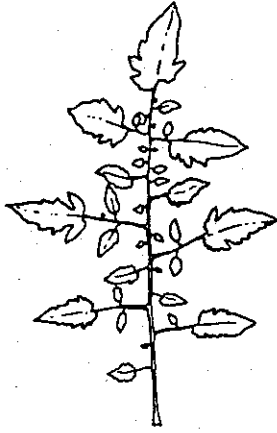
- | | | | | |
|----------------------------|------------------------------------|---------------------------------|-------------------------|--|
| <input type="checkbox"/> 3 | Fruiting season: | 1 = Long ('Marglobe') | 2 = Medium ('Westover') | 3 = Short, concentrated ('VF 145') |
| | | 4 = Very concentrated ('UC 82') | | |
| <input type="checkbox"/> 2 | Relative maturity in areas tested: | 1 = Early | 2 = Medium early | 3 = Medium |
| | | 4 = Medium late | 5 = Late | 6 = Variable (if relative maturity is known to differ by location or environment, please explain on separate sheet). |

12. ADAPTATION: If more than one category applies, list all in rank order.

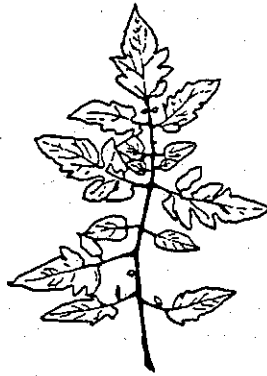
- | | | | | |
|----------------------------|--|---|--|---------------|
| <input type="checkbox"/> 1 | Culture: | 1 = Field | 2 = Greenhouse | |
| <input type="checkbox"/> 2 | Principal use(s): | 1 = Home garden | 2 = Fresh market | |
| | | 4 = Concentrated products | 3 = Whole-pack canning | |
| <input type="checkbox"/> 1 | Machine harvest: | 1 = Not adapted | 2 = Adapted | |
| <input type="checkbox"/> 3 | Regions to which adaptation has been demonstrated: | 5 = Other (Specify) <u>Parent line for F1 hybrid</u> | | |
| <input type="checkbox"/> 2 | | 1 = Northeast | 2 = Mid Atlantic | 3 = Southeast |
| <input type="checkbox"/> 1 | | 5 = Great Plains | 6 = South-central | 4 = Florida |
| | | 9 = California: Sacramento and Upper San Joaquin Valley | 7 = Intermountain West | 8 = Northwest |
| | | 10 = California: Coastal areas | 11 = California: Southern San Joaquin Valley & deserts | |

ILLUSTRATIONS OF TOMATO LEAF AND FRUIT CHARACTERISTICS

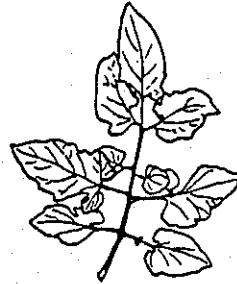
4. LEAF: Morphology:



(1)



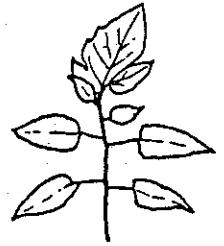
(2)



(3)

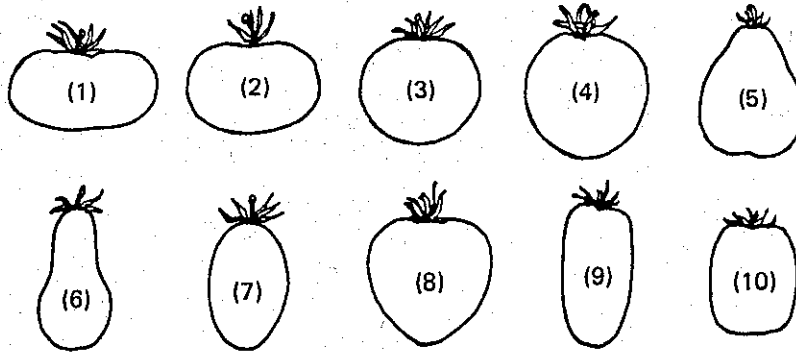


(4)

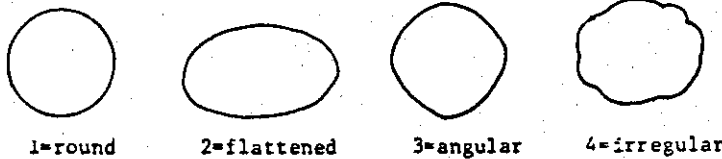


(5)

7. FRUIT: Typical fruit shape:



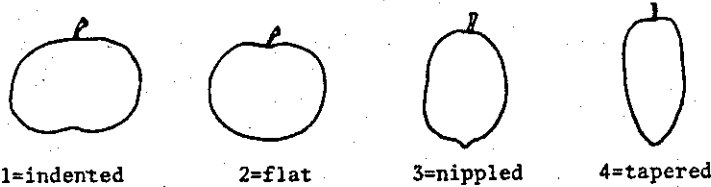
Shape of transverse section:



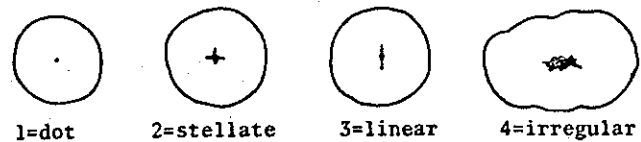
Shape of stem end:



Shape of blossom end:



Shape of pistil scar:



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".

Warnock, S.J. 1978. Using Tomato Heat Units. Leaflet No. 6, Campbell Institute for Agricultural Research, Camden, NJ. 10 p.

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.

14D. Exhibit D. Additional Description of NC 8288

NC 8288 produced total fruit yield equivalent to 'Florida 1B' (Table 1).

NC 8288 had a lower percentage of fruit cracking and rough blossom scar than 'Florida 1B' for early and total season harvests (Tables 1 and 2). NC 8288 had a lower percentage of fruit in early season with zippers (adnate anther scar) than 'Florida 1B' (Table 2).

NC 8288 produced a higher percentage of marketable grade fruit (U.S. No. 1 + U.S. No. 2 + U.S. No. 3) and a lower percentage of cull grade fruit for total season than 'Florida 1B' (Table 1).

NC 8288 produced higher marketable and U. S. Combination Grade (U.S. No. 1 + U.S. No. 2) yield than 'Florida 1B' (Table 1).

Average fruit weight of NC 8288 was equivalent to that of 'Florida 1B' (Tables 1 and 2).

NC 8288 has the n gene (derived from 'Florida 1B') for nipple tip at the stylar end of the fruit. Under most conditions the blossom scar of NC 8288 is pinpoint with no expression of nipple tip. However, under some field conditions and in the greenhouse during the winter, NC 8288 exhibits prominent nipple tip on some fruit. In association with the n gene, NC 8288, like 'Florida 1B' and other varieties with the n gene, exhibits a characteristic marginal curl of leaves.

The plant of NC 8288 is larger than that of 'Florida 1B'. The plant height of staked plants of NC 8288 was 70 cm compared to 55 cm for 'Florida 1B'.

NC 8288 is slightly later in maturity than 'Florida 1B' (Table 2, total yield for early season).

Table 1. Total season yield and fruit characteristics of NC 8288 compared to 'Florida 1B', Fletcher, N. C. stake culture trial, 1987.

	<u>Yield (Tons/acre)</u>			<u>Fruit grade (Percent)</u>			<u>Fruit size (Percent)</u>			<u>Fruit wt. (gms/ fruit)</u>	<u>Fruit defects (Percent)</u>		
	<u>Total</u>	<u>Mkt.²</u>	<u>Comb. grade³</u>	<u>Mkt.</u>	<u>Comb. Grade</u>	<u>Cull</u>	<u>Jumbo</u>	<u>Extra large</u>	<u>Large</u>		<u>Cracking</u>	<u>Rough blossom scar</u>	<u>Zipper</u>
NC 8288	44.3	25.8	15.0	58.2	33.7	41.8	56.8	35.6	7.4	313	24.6	30.7	8.0
'Florida 1B'	39.4	19.3	9.5	48.9	23.8	51.1	46.0	39.8	14.1	281	35.7	44.4	10.4
LSD(.05)	NS	5.5	3.5	8.5	NS	8.5	NS	NS	5.3	NS	9.8	11.3	NS

Table 2. Early season (first 2 weeks of harvest) yield and fruit characteristics of NC 8288 compared to 'Florida 1B', Fletcher, N. C. stake culture trial, 1987

	<u>Yield (Tons/acre)</u>			<u>Fruit grade (Percent)</u>			<u>Fruit size (Percent)</u>			<u>Fruit wt. (gms/ fruit)</u>	<u>Fruit defects (Percent)</u>		
	<u>Total</u>	<u>Mkt.²</u>	<u>Comb. grade³</u>	<u>Mkt.</u>	<u>Comb.</u>	<u>Cull</u>	<u>Jumbo</u>	<u>Extra large</u>	<u>Large</u>		<u>Cracking</u>	<u>Rough blossom scar</u>	<u>Zipper</u>
NC 8288	17.3	14.6	10.5	84.8	61.4	15.2	37.3	53.3	9.3	291	0	10.0	1.5
'Florida 1B'	24.9	18.4	12.5	73.8	50.1	26.3	40.1	46.5	13.5	281	10.8	25.5	7.9
LSD(.05)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	6.0	9.7	3.6

²Marketable yield = U.S. No. 1 + U.S. No. 2 + U.S. No. 3

³U. S. Combination Grade yield = U.S. No. 1 + U.S. No. 2

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TOMATO

NC 8288

Exhibit E. Statement of the Basis of Applicant's Ownership

'NC 8288' was developed by Dr. R.G. Gardner, Associate Professor of Horticultural Science with the N.C. Agricultural Research Service (NCARS) College of Agriculture and Life Sciences, N.C. State University. 'NC 8288' is owned exclusively by the NCARS who retains all rights to its use.