

9300159

THE UNITED STATES OF AMERICA

<u>TO ALL TO WHOM THESE PRESENTS SHALL COME;</u>

Aorth Carolina Agricultural Research Service

Microns, 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 CHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR RING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO TENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321

TOMATO

'NC EBR-3'

In Testimony Thereof, I have hereunto set my hand and caused the seal of the Hant United Protection Office to be affixed at the City of Washington, D.C. this twenty eighth day of Tobruary in the year of our Lord one thousand nine hundred and ninety-seven.

Molska J. Sfam for Commissioner Plant Varioty Protection Office Springlywood Modesting Society

An Schileman Socretary of Syriculture

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 Office, OIRM, Room 404-W, Washington, D.C. 20250, and to the Office of Management and Budget, Paperwork Reduction Project (OMB #0581-0055), Washington, 20250.

FORM APPROVED: OMB 0581-0055, Expires 1/31/91

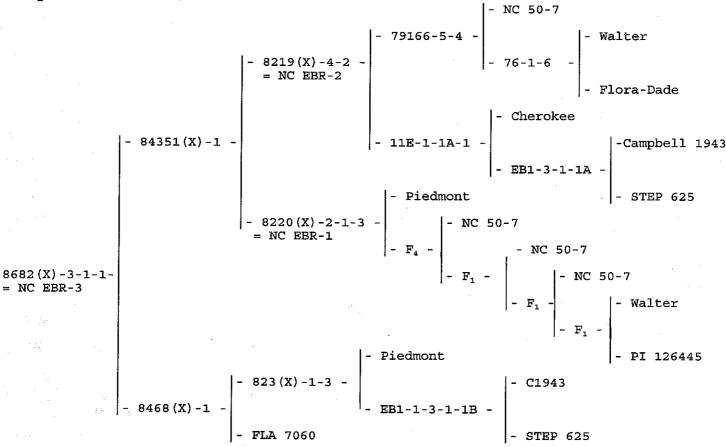
| U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE | | | | | application is required in order to | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------------------|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE (Instructions on reverse) | | | | | letermine if a plant variety protection vertificate is to be issued (7 U.S.C. 2421). Information is held confidential until vertificate is issued (7 U.S.C. 2426). | |
| NAME OF APPLICANT(S) (as it is to appear on the Certificate) 2. TEMPORARY DESIGNATION | | | 2. TEMPORARY DESIGNATION | N OR 3. | VARIETY NAME | |
| North Carolina Agricultural Research | Servic | e · | 8682-3-1-1 | | NC EBR-3 | |
| ADDRESS (street and no. or R.F.D. no., city, state, and ZIP) N.C. State University BOX 7643 | | | 5. PHONE (Include area cod | ļ | FOR OFFICIAL USE ONLY VPO NUMBER | |
| Raleigh, NC 27695-7643 | | | 919-515-2717 | . - | 9300159 F Date | |
| | | | | | Mar. 10, 1993 | |
| Lycopersicon esculentum | 7. FAMILY N Solan | | ai) | L | Time N C C C C C C C C C C C C C C C C C C | |
| 8. CROP KIND NAME (Common Name) | | 9. | ATE OF DETERMINATION | | F Filing and Examination Fee: | |
| tomato | 100 | | March 13, 1992 | | ε \$2150. Ε 175 - S Date | |
| 10. If THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGAI State Governmental Agency | NIZATION (Cor | 1. | | | B 3/10/93 E 4/5/93 | |
| | | <u> </u> | | | C Certificate Fee: | |
| 11. IF INCORPORATED, GIVE STATE OF INCORPORATION | | 12. DA | TE OF INCORPORATION | | Date JAN . 7, 1997 | |
| 13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO Michael W. Baker NC Foundation Seed Producers, Inc. 8220 Riley Road Zebulon, NC 27597 14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Foliation of Check Appropriate Box for Each ATTACHMENT SUBMITTED (Foliation of Check Appropriate Box for Each ATTACHMENT SUBMITTED (Foliation of Check Appropriate Box for Each ATTACHMENT SUBMITTED (Foliation of Check Appropriate Box for Each ATTACHMENT SUBMITTED (Foliation of Check Appropriate Box for Each ATTACHMENT SUBMITTED (Foliation of Check Appropriate Box for Each ATTACHMENT SUBMITTED (Foliation of Check Appropriate Box for Each ATTACHMENT SUBMITTED (Foliation and Breeding History of the Variety. 14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Foliation and Breeding History of the Variety. 25. Exhibit B, Novelty Statement. 26. Exhibit C, Objective Description of Variety. | | | PHONE (Include | erea code): | 919-269-5592 | |
| e X Exhibit E, Statement of the Basis of Applicant's Ownersh N Seed Sample (2.500 yiable untreated seeds). Date Seed | | od to Plant \ | ariahi Protection Office | | | |
| | t. X Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office g. X Filing and Examination Fee (\$2,150) made payable to "Treasurer of the United States." | | | | | |
| 15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SO | | | | EED? (See # | ection 83(a) of the Plant Variety | |
| YES (H "YES." answer items 16 and 17 be | | NO (# "N | O," skip to item 18 below) | | | |
| 16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS NUMBER OF GENERATIONS? | 10 1 | 7. IF "YES" TO | TEM 16, WHICH CLASSES OF | PRODUCTI | ON BEYOND BREEDER SEED? | |
| YES NO | 1 | ☐ FOL | NDATION | REGISTER | ED CERTIFIED | |
| 18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VA | RIETY IN THE | U.S.? | | | | |
| YES (If "YES," through Plant Variety Protection Act NO | Patent | Act. Give da | e: | | | |
| 19 HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR N | ARKETED IN | THE U.S. OR (| THER COUNTRIES? | | | |
| YES (II "YES," give names of countries and dates) | | | | | | |
| 20 The applicant(s) declare(s) that a viable sample of basic se request in accordance with such regulations as may be appl | eds of this v licable. | ariety will | be furnished with the ap | plication | and will be replenished upon | |
| The undersigned applicant(s) is (are) the owner(s) of this uniform, and stable as required in section 41, and is entitle Applicant(s) is (are) informed that false representation her | d to protect | ion under ti | e provisions of section 42 | of the Pla | that the variety is distinct, nt Variety Protection Act. | |
| <u> </u> | | | | | | |
| Johnny C. Wynne | | | , N.C. Agricult Service | ural | 11-12-42 | |
| Systemature of Applicant Jowner(s) | c | APACITY OR | ITLE | · · · · · · · · · · · · · · · · · · · | DATE | |
| // / | 4, | | | | | |

Revised 7/8/96

Tomato NC EBR-3

14A. Exhibit A:

Pedigree:



NC EBR-3, an inbred tomato line in the F_6 generation, was developed by the pedigree breeding method. The objective in the breeding program was to incorporate the high level of stem lesion (collar rot) early blight resistance and moderate foliar resistance to early blight of Campbell 1943 into an improved tomato line. F_2 plants were selected in field plots at Fletcher, North Carolina for stem lesion and foliar resistance. F_3 and advanced generation lines were evaluated for resistance in replicated field plots using a reduced fungicide spray program. In addition, stem lesion resistance was verified in the greenhouse by inoculating stems with conidia of the fungus in a mist chamber. NC EBR-1 (registered with the PVP office), an early blight resistant line with moderate foliar resistance derived from Lycopersicon hirsutum PI 126445 is also in the pedigree of NC EBR-3.

NC EBR-3 appeared uniform and stable in the F_4 through F_6 generations in research station field and greenhouse trial and seed increase plantings. No variant or off-type plants were observed.

Revised 7/8/96

Exhibit B. Novelty Statement

NC EBR-3 is most similar to the variety 'Flora-Dade'. NC EBR-3 is more resistant to defoliation by early blight than 'Flora-Dade' (Table 1 attached). NC EBR-3 has the \underline{u} gene for uniform light green color of non-ripe fruit. Fruit shoulder color of 'Flora-Dade' is dark green.

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Revised 7/8/96 9300\59

15:20

Table 1. Mean percent early blight defoliation of tomatoes at midiseason in field plots at the Mountain Horticultural Crops Research Station, Fletcher, NC.

| İ | | Yea | ar | |
|-------------------------|------|------|------|-------------|
| <u> </u> | 1987 | 1988 | 1989 | <u>1990</u> |
| Flora-Dade ^y | 57 | 64 | 90 | 85 |
| NC EBR-3 | 1.3 | 11 | 40 | 48 |
| NC EBR-4 | 13 | 11 | 20 | 31 |
| LSD(.05) | 10 | 25 | 35 | 17 |
| · | | • | 4.2 | |

*Plots sprayed with fungicide at a 10-day interval instead of recommended 5-day interval.

Trials were a randomized complete block design with 2 replicates of 6 plants per replicate. Disease incidence was rated visually on a scale of 0% (no early blight) to 100% (complete defoliation by early blight) on each 6-plant plot as a whole unit. Data were analyzed by analysis of variance (ANOVA) and means separated by a least significant difference test (LSD) at the 95% confidence level.

EXHIBIT C (Tomato)

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE (FSTOCK, MEAT, GRAIN AND SERVICE) PLANT VARIETY PROTECTION OFFICE BELTSVILLE, MARYLAND 20705

| OBJECTIVE DES | CRIPTION OF VARIET | Y |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|----------------------------------------------------------------|
| TOMATO (Lyco | ppersicon esculentum Mill.) | |
| NAME OF APPLICANT(S) | TEMPORARY DESIGNATION | VARIETY NAME |
| N.C. Agricultural Research Service | 8682(X)-3-1 | MC TEND O |
| Dr. R.G. Gardner (Breeder) | 0002(A)=3-1 | NC EBR-3 |
| ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) | | COD OFFICIAL HOP CAN M |
| N.C. State University | | FOR OFFICIAL USE ONLY |
| Box 7643 | | PVPO NUMBER |
| Raleigh, NC 27695-7643 | | 0700450 |
| | * . | 9300159 |
| Choose responses for the following characters which best fit your variety. | Complete this form as fully as no | escible for heet characterization of the mainter |
| When a single quantitative value is requested (e.g., fruit weight), your ansi | wer should be the mean of an ada | rusto sixed unbiased small a full training to |
| zeroes when necessary (e.g., 0 9 or 0 8 1 , etc.). The ap | plicant variety should be some | duate-sized, unbiased sample of plants. Use leading |
| tarrest of the same type (see itst of recommended check varieties below) | and group in the come trials. The | ahaanaanna ah ahii fana ah |
| plants grown under normal conditions of culture for the variety. Indicate | by a check whether trial data are | from grouphouse |
| Trials direct-seeded or transplanted X; staked X or un | staked Give locations as | nd dates of seeding and transfer to 1 |
| Trials direct-seeded or transplantedX staked _X or un Fletcher, North Carolina Seeding Dates: Transplant dates: 6/10/87: 6/8/88: 6/12/99 | 5/4/87: 5/2/88: 5/8/ | 89. 5/7/90. 4/16/91. 5/20/01 |
| Transplant dates: 6/10/87; 6/8/88; 6/12/8 | 9 • 6/7/90 • 5/31/91 • | 6/24/01 |
| | 2, 0///30, 3/31/91, | 0/24/91 |
| COMPARISONS SHOULD BE MADE TO ONE OR MORE CHECK WAR | IETIEC'IN TUE EOU OWNER. | |
| COMPARISONS SHOULD BE MADE TO ONE OR MORE CHECK VAR. OF THE CHECK IN BOXES WHERE IDENTITY OF CHECK IS REQUE. | IETTES IN THE FULLOWING LI. STED | ST, IF AT ALL POSSIBLE. ENTER THE NUMBER |
| | SIED. | |
| 1 = Ace 55 VF 7 = Homestead 24 | 13 = Red Rock | 10 - VE 104 |
| 2 = Campbell 37 8 = Marglobe | 14 = Roma VF | 19 = VF 134 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) |
| 5 = Florida MH-1 11 = Ohio MR-13 6 = Heinz 1350 12 = Red Cherry Large | 17 = Tropic | |
| 6 = Heinz 1350 12 = Red Cherry Large | 18 = UC 82 | • |
| 1. SEEDLING: | | |
| A THE STATE OF THE | | |
| 2 Anthocyanin in hypocotyl of 2-15 cm. seedling: 1 = Absen | t 2 = Present Habit o | f 3-4 week old seedling: 1 = Normal 2 = Compact |
| 7, Table 1 Absor | 2 - Tresent 1 | 5-4 Week old seedling. = Normal 2 = Compact |
| 2. MATURE PLANT (at maximum vegetative development): | | |
| | 1 0 0 Cm. He | ight |
| Growth: 1 = Indeterminate 2 = Determinate | nate | |
| | | |
| 2 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 | 2 - 1 |
| 2 | 7 Sirian 2 Wedituin | 3 = Large |
| Habit: 1 = Sprawling (decumbent) | 2 = Semi-erect 3 = E | rect ('Dwarf Champion') |
| | • | , |
| | | |
| 3. STEM: | <i>1</i> | |
| 2 Branching: 1 = Sparse ('Brehm's Solid Bod' (Eirobo | | |
| Branching: 1 = Sparse ('Brehm's Solid Red', 'Fireba | II') 2 = Intermediate (' | Westover') 3 = Profuse ('UC 82') |
| 1 Branching at cotyledonary or first leafy node: | = Present 2 = Absent | |
| | = Present 2 = Absent | |
| | | |
| No. of nodes below the first inflorescence: 1 = 1-4 | 2 = 4-7 3 = 7-10 | 4 = 10 or more . |
| 2 No of podes between parks (feet 2nd 2nd 2nd 3nd) : (| [2] | • |
| No. of nodes between early (1st - 2nd, 2nd - 3rd) inflorescend | ces. | nodes between later-developing inflorescences. |
| 3 Pubescence on younger stems: 1 = Smooth (no long | | |
| 3 Pubescence on younger stems: 1 = Smooth (no long 3 = Moderately hair | | hairy (scattered long hairs) |
| 3 - Moderatery many | y 4 = Densely | hairy or wooly |
| 4. LEAF (mature leaf beneath the 3rd inflorescence): | | |
| | - | • . |
| 1 1 Turner | ^ I | ion on no. E of this form that is made similarly |
| Type: 1 = Tomato 2 = Potato ('Trip-L-Crop') | 2 Morphology (choose illustrati | ion on oo. 5 or this torm that is most similari |
| Type: 1 = Tomato 2 = Potato ('Trip-L-Crop') | Morphology (choose illustrat | ion on pg. 5 or this form that is most similar) |
| 3 Margins of major leaflets: 1 = Nearly entire | morphology junouse mustral. | |
| Margins of major leaflets: 1 = Nearly entire | 2 = Shallowly to | othed or scalloped |
| 3 Margins of major leaflets: 1 = Nearly entire 3 = Deeply toothed of | 2 = Shallowly to pricut, esp. towards base | othed or scalloped |
| Margins of major leaflets: 1 = Nearly entire 3 = Deeply toothed of Marginal rolling or wiltiness: 1 = Absent 2 = Slight | 2 = Shallowly to | othed or scalloped |
| 3 Margins of major leaflets: 1 = Nearly entire 3 = Deeply toothed of | 2 = Shallowly to pricut, esp. towards base | othed or scalloped |

| 4 | LEA | AF (n | nature leaf beneath the | 3rd inflorescence co | ntinued): | | | , | | 00107 |
|-----|----------|-------|-------------------------------------|---------------------------------------------------------------|-----------------------------|---------------------------|-------------------------------------|-----------------------|----------------------------------------|---------------------|
| | | 2 | Surface of major leaf | ets: 1 = | Smooth | | 2 = Rugose (bu | mpy or veiny) | | |
| | | 2 | Pubescence: 1 = Sn | nooth (no long hairs) | 2 = No | məl | 3 = Hirsut | e 4 = V | Vooly | |
| 5. | INF | LOR | ESCENCE (make obser | vations on 3rd inflore | scence): | * . | | | | all and |
| | | | Type: 1 | = Simple 2 = | Forked (2 majo | r axes) | 3 = Compound | (much branched) | | |
| | 0 | 6 | Number of flowers in | inflorescence, average | | ur. G | | | | |
| · | | 1_ | Leafy or "running" in | florescences: 1 = | Absent | 2 = Occasion | al 3 | = Frequent | | • • |
| 6. | FLC | WEF | | | | | | | | |
| | | 1 | Calγx: 1 | = Normal, lobes awl-s | haped | 2 = Macrocal | yx, lobes large, l | eaflike 3 = | Fleshy | |
| : . | | 1 | Calyx-lobes: 1 | ≂ Shorter than corolla | 2 = | = Approx, equallir | ng corolla | 3 = Distinctly | fonger than core | oila |
| . 4 | | | Corolla color: 1 | = Yellow 2 = | Old gold | 3 = White or | tan | | | |
| | | 2 | Style pubescence: | 1 = Absent | 2 = Sparse | .3 = De | nse | | | N. V. V. Notalis |
| | | | Anthers: 1 | = All fused into tube | 2 = | Separating into | 2 or more groups | at anthesis | Together in the | |
| | | 1 | Fasciation (1st flower | of 2nd or 3rd inflores | :ence): 1 = | Absent | 2 = Occasionally | present | 3 = Frequently p | resent |
| 7. | FRU | JIT (| 3rd fruit of 2nd or 3rd | cluster): For the first | 5 characters belo | ow, match your va | ariety with the n | iost similar illustra | tion on pg. 5 of | this form. |
| · · | | 2 | Typical fruit shape: | 1 | Shape of transve | erse section: | 2 | Shape of stem | end: | |
| | | | | 2_4 | Shape of blosso | m end: | | Shape of pistil | scar: | |
| | | | | | | | 14. | | | |
| 4 | | 2 | Abscission layer: 1 | = Present (pedicellate |) 2 = Absent (| jointless) 2 | Point of detach | nment of fruit at h | 7 T | |
| ١ | | | mm length of pedice | (from joint to calyx a | attachment) | • | | | 2 = At C | alyx attachmer |
| 0 | 6 | 5 | mm length of mature | fruit (stem axis) | [| 0 6 5 | mm length, ch | eck var. no | | 0 4 |
| 0 | 8 | 0 | mm diameter of fruit | at widest point | [| 0 7 5 | mm diameter, | check var, no | [| 0 4 |
| 2 | o | 3 | g weight of mature fr | uit | | 2 0 6 | g weight, chec | k var. no | | 0 4 |
| | Γ | 3 | No. of locules: | 1 - 70 | | _ | · | - ' . | | |
| | Ī | = | Fruit surface: | 1 = Two | 2 = Three and f | | Five or more | . A | | |
| | Ļ | | Fruit base color | 1 = Smooth | 2 = Slightly rou | | = Moderately ro | | | |
| | <u>.</u> | | (mature-green stage): | 1 = Light green ('La 3 = Apple or medium 5 = Dark green | | | = Light gray-gree = Yellow green | en ('Westover') | | : |
| | | 1 | Fruit pattern (mature-green stage): | 1 = Uniform green | | 2 = Green-should | dered | , 3 = Ra | adial stripes on s | ides of fruit |
| | | | Shoulder color if diffe | rent from base: | 1 = Dark green | 2 = Gi | rey green | 3 = Yello | w green | |
| | | 5 | Fruit color, full-ripe: | | 2 = Yellow 7 = Greenish | 3 = Orang 8 = Other | ge 4 (Specify) | = Pink | 5 = Red | |
| | | 3 | Flesh color, full-ripe: | 1 = Yellow | 2 = Pink | 3 = Red/0 | Crimson 4 | = Orange | 5 = Other (Spec | cify) |
| | Γ | 2 | Flesh color: | 1 = Uniform | 7 IAISAN 15-5 • | and darker | : ! | : | ************************************** | |
| | 늗 | | Locular gel color of tal | | 2 = With lighter 1 = Green | and darker areas i | | m (Paul | | |
| | F | | Ripening: | 1 = Blossom-to-stem | | 2 = Yellov 2 = Uniform | w 3 | = Red | | |

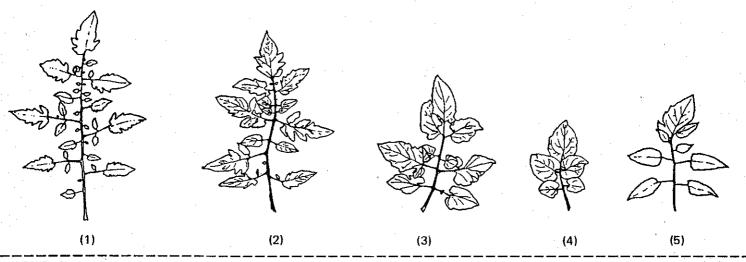
| 7 60 | III (3-4 f- | ruit of 2nd c- | 3rd cluster): Continued | | | | | | | |
|---------------------|-------------|----------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------------|---------------------|------------------------------------------|--------------------|---------------------------------------|
| | Ripening | | 1 = Inside out | 2 = Uniformly | 3 ≂ | Outside in | | Stem scar size: 2 = Medium ('R | |) (1 5 9 II ('Roma') 3 = Large |
| 2 | Epidermi | s color: | 1 = Colorless | 2 = Yellow | | | | e Micalanii (11 | utgers / | 3 - Large |
| 1 | Epidermi | s: | 1 = Normal | 2 = Easy-peel | | | 2 (| | less (absen mm) | t or smaller than 2 = Present |
| 2 | Epidermi | s texture: | 1 = Tender | 2 = Average | | 3 = Tough | | | | |
| 3 | Thickness | s of pericarp | | 3 | 3 | Thickness of peric | arp, check | var. no. 0 | 4 | |
| | | · | 1 = Under 3 mm | 2 = 3-6 mm | | 3 = 6-9 mm | | 4 = Over 9 mn | n | |
| . 8, RE | SISTANCE | TO FRUIT I | DISORDERS (Use code: | 0 = Unknown, 1 = 8 | Suscepti "J | ible, 2 = Resistant) | 1 | [] | | |
| 2 | Biossom | end rot | 2 Catfac | e | | Fruit pox | | [2] z | ippering | : |
| 2 | Blotchy | ripening | 2 Crack | ng, concentric | Ļ | Gold fleck | | ه لـا ه | ther <i>(Speci</i> | fy) |
| 2 | Bursting | • | 2 Cracki | ng, radial | | 2 Graywall | | · · · · · · · · · · · · · · · · · · · | | <u> </u> |
| part | upon disea | ase resistance, | CTION (Use code: 0 = No. trial data should be appeared by varieties grown in the tr | nded. These should | l specify | | | | | |
| · · · · · · · · · | | VIRAL DI | SEASES: | · · · · · · · · · · · · · · · · · · · | | _ | | | | |
| | | Cucumber n | nosaic | 0 Tobac | co mos | aic, Race 0 | O Toba | ecco mosaic, Ra | ce 2 ² | |
| | | Curly top | | O Tobac | co mos | oic, Race 1 | O Tom | ato spotted wilt | | |
| | 0 | Potato-Y vir | us | 0 Tobac | cco mos | aic, Race 2 | 0 Tom | ato yellows | 7 - 14 | |
| | | Other virus | (Specify) | | | | · | | | |
| | | BACTERI | IAL DISEASES: | en de la companya de | | | | en e | | |
| | | Bacterial ca | anker (Corynebacterium r | nichiganense) | 0 | Bacterial spot (X | (anthomona | as vesicatorium, |) | |
| | 0 | Bacterial so | oft rot (Erwinia carotovoi | a) | 0 | Bacterial wilt, (P | seudomona | as solanacearum |) | |
| | 0 | Bacterial sp | oeck <i>(Pseudomonas toma</i> | o) | | Other bacterial d | lisease <i>(Spe</i> | cify) | | |
| | | FUNGAL | DISEASES: | | | | | | | |
| | 0 | Anthracnos | se (Colletotrichum spp.) | | 0 | Leaf mold, Race | 1 (Clados) | oorium fulvum) | | • |
| | 0 | | t rot or corky root, eta lycopersici) | | 0 | Leaf mold, Race | 2 | | | • |
| | 2 | | or stem canker, | 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - | | Leaf mold, Race | | | : | |
| | L | (Alternaria | | | | Leaf mold, other | r races <i>(Spe</i> | ecify) | | |
| | 2 | Early bligh (Alternaria | t defoliation, solani) | | | | · | | | · · · · · · · · · · · · · · · · · · · |
| e service See Se | 2 | | vilt, Race 1, rum f. lycopersici) | | | Nailhead spot (A | Mternaria to | omato) | | |
| | 2 | | vilt, Race 2 | | 0 | Septoria leafspot | t (S. lycope | ersici) | | |
| | 0 | Fusarium w | | | 0 | Target leafspot (| Corynespoi | ra casiicola) | | |
| · | | | | | 2 | Verticillium wilt | , Race 1 /\ | /. albo-atrum) | | |
| | | | pot (Stemphylium spp.) | | 0 | Verticillium wilt, | , Race 2 | | | |
| | 0 | Late blight, (Phytophth | , Race U, ora infestans) | | 一 | Other fungal dise | ease | | | |
| 1. | 0 | Late blight, | , Race 1 | | H | Other fungal dise | ease | | | |

9300159

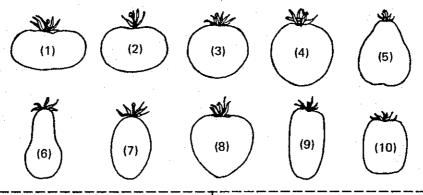
| 9. DISEASE AND PEST REACTION (Use cod | e: 0 = Not tested 1 = Suscer | ntible 2 = Resistant - Continu | ued) | |
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| INSECTS AND PESTS: | J. C. (101 1201,00, 1 Gusto) | priority 2 Troubstante Commit | | |
| O Colorado potato beetle (Leptinotarsa de | cemlineata) 0 Tom | ato hornworm (Manduca qui | nquemaculata) | |
| 0 Southern root knot nematode (Meloidog | yne incognita) 0 Tom | ato fruitworm (Heliothis zea) | , | |
| O Spider mites (Tetranychus spp.) | 0 White | etly (Trialcurodes vaporariors | um) | |
| 0 Sugar beet army worm (Spodoptera exig | ua) Othe | r (Specify) | | |
| Tobacco flea beetle (Epitrix hirtipennis) | | | | · |
| POLLUTANTS: | | | | • |
| O Ozone O Sulfur diox | cide Othe | r (Specify) | | |
| 10. CHEMISTRY AND COMPOSITION OF FO Canners Assn, Bull. 27-L. Please specify to for at least one well-known check variety | JLL-RIPE FRUITS: Sugges | sted test methods may be founce to methods used. Fill in | table below with values | for the new variety and |
| | SUBMITTED | Check Variety | Check Variety | Check Variety |
| | VARIETY | | | |
| рН | | | | |
| Titratable acidity, as % citric | an da ya ili da ili | | No. | |
| Total solids (dry matter, seeds and skin removed | 1 | | | |
| Soluble solids, as ^O Brix | | | | |
| 11. PHENOLOGY: Express length of developm | | | | |
| 11. PHENOLOGY: Express length of developm are used, indicate the base to | emperature used in their cald | culation here ck variety; identify checks by Check variety Flora-Dade (04) | oC. See paper by War | nock under "References" |
| 11. PHENOLOGY: Express length of developm are used, indicate the base to for method. Give compared to 50% flower (1 open flower on 50%) | emperature used in their caldive data for at least one chec | culation here tk variety; identify checks by Check variety | OC. See paper by War name or by number from | nock under "References" table on page 1. |
| 11. PHENOLOGY: Express length of developm are used, indicate the base to for method. Give comparate | emperature used in their calcive data for at least one checked APPLICATION VARIETY | Check variety Flora-Dade (04) | OC. See paper by War name or by number from | nock under "References" table on page 1. |
| 11. PHENOLOGY: Express length of developm are used, indicate the base of for method. Give compared for method. Give compared Seeding to 50% flower (1 open flower on 50% of plants). Seed to once-over harvest (if applicable) 2 Fruiting season: 1 = 1 | emperature used in their calcive data for at least one checked APPLICATION VARIETY | Check variety Check variety Flora-Dade (04) 56 days 2 = Medium ('Westover') | OC. See paper by Warname or by number from Check variety | nock under "References" table on page 1. |
| 11. PHENOLOGY: Express length of developm are used, indicate the base of for method. Give compared for method. Give compared Seeding to 50% flower (1 open flower on 50% of plants). Seed to once-over harvest (if applicable) 2 Fruiting season: 1 = 1 | emperature used in their calcive data for at least one checive data for at least one calculation data for at least one checive data for at least one checi | culation here ck variety; identify checks by Check variety Flora-Dade (04) 56 days 2 = Medium ('Westover') | OC. See paper by Warname or by number from Check variety 3 = Short, conc 3 = Medium 6 = Variable (if to differ by | nock under "References" table on page 1. Check variety |
| 11. PHENOLOGY: Express length of developm are used, indicate the base of for method. Give comparate for method. Give comparate seeding to 50% flower (1 open flower on 50% of plants). Seed to once-over harvest (if applicable) 2 Fruiting season: 1 = 8 4 = 1 | APPLICATION VARIETY 56 days Long ('Marglobe') /ery concentrated ('UC 82') sted: 1 = Early 4 = Medium | culation here ck variety; identify checks by Check variety Flora-Dade (04) 56 days 2 = Medium ('Westover') | OC. See paper by Warname or by number from Check variety 3 = Short, conc 3 = Medium 6 = Variable (if to differ by | check variety check variety check variety centrated ('VF 145') relative maturity is known location or environment, |
| 11. PHENOLOGY: Express length of developm are used, indicate the base of for method. Give compared for method. Give compared Seeding to 50% flower (1 open flower on 50% of plants). Seed to once-over harvest (if applicable) 2 Fruiting season: 1 = 1 4 = 1 4 = 1 | APPLICATION VARIETY 56 days Long ('Marglobe') /ery concentrated ('UC 82') sted: 1 = Early 4 = Medium | culation here ck variety; identify checks by Check variety Flora-Dade (04) 56 days 2 = Medium ('Westover') | OC. See paper by Warname or by number from Check variety 3 = Short, conc 3 = Medium 6 = Variable (if to differ by | check variety check variety check variety centrated ('VF 145') relative maturity is known location or environment, |
| 11. PHENOLOGY: Express length of development are used, indicate the base of for method. Give compared for method. Give compared seeding to 50% flower (1 open flower on 50% of plants). Seed to once-over harvest (if applicable) 2 Fruiting season: 1 = 1 | APPLICATION VARIETY 56 days Long ('Marglobe') /ery concentrated ('UC 82') sted: 1 = Early 4 = Medium | Check variety; identify checks by Check variety Flora-Dade (04) 56 days 2 = Medium ('Westover') 2 = Medium early late 5 = Late | OC. See paper by Warname or by number from Check variety 3 = Short, conc 3 = Medium 6 = Variable (if to differ by | check variety check variety check variety entrated ('VF 145') relative maturity is known location or environment, ain on separate sheet). |
| 11. PHENOLOGY: Express length of development are used, indicate the base of for method. Give comparate | APPLICATION VARIETY 56 days Long ('Marglobe') /ery concentrated ('UC 82') sted: 1 = Early 4 = Medium Applies, list all in rank order. Sield 2 = Groncentrated products | Check variety; identify checks by Check variety Flora-Dade (04) 56 days 2 = Medium ('Westover') 2 = Medium early late 5 = Late | OC. See paper by Warname or by number from Check variety 3 = Short, conc 3 = Medium 6 = Variable (if to differ by please expla | check variety check variety entrated ('VF 145') relative maturity is known location or environment, ain on separate sheet). |
| 11. PHENOLOGY: Express length of development are used, indicate the base of for method. Give comparate | APPLICATION VARIETY 56 days Long ('Marglobe') /ery concentrated ('UC 82') sted: 1 = Early 4 = Medium Applies, list all in rank order. Sield 2 = Grand | Check variety; identify checks by Check variety Flora-Dade (04) 56 days 2 = Medium ('Westover') 2 = Medium early late 5 = Late reenhouse resh market 3 = Who 5 = Other (Specify) Pa | CC. See paper by Warname or by number from Check variety 3 = Short, conc 3 = Medium 6 = Variable (if to differ by please explained of the concentration o | check variety check variety entrated ('VF 145') relative maturity is known location or environment, ain on separate sheet). |
| 11. PHENOLOGY: Express length of development are used, indicate the base of for method. Give compared for method. Give compared seeding to 50% flower (1 open flower on 50% of plants). Seed to once-over harvest (if applicable) 2 Fruiting season: 1 = 1 | APPLICATION VARIETY 56 days Long ('Marglobe') /ery concentrated ('UC 82') sted: 1 = Early 4 = Medium Applies, list all in rank order. Sield 2 = Grand | Check variety; identity checks by Check variety Flora—Dade (04) 56 days 2 = Medium ('Westover') 2 = Medium early late 5 = Late reenhouse resh market 3 = Who 5 = Other (Specify) Padapted id Atlantic 3 = 3 dapted id Atlantic 3 = 3 Japper San Joaquin Valley | CC. See paper by Warname or by number from Check variety 3 = Short, conc 3 = Medium 6 = Variable (if to differ by please explained of the concentration o | check variety Check variety entrated ('VF 145') relative maturity is known location or environment, ain on separate sheet). F1 hybrid 40 Florid 8 = Northwest |

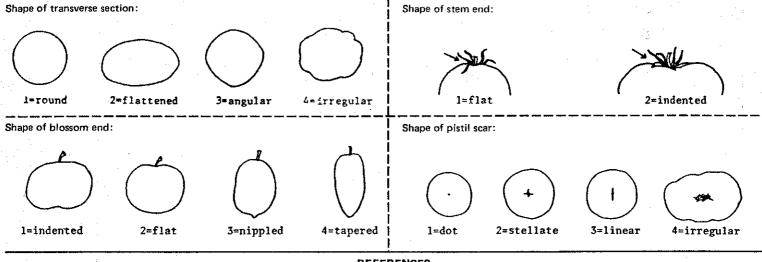
4. LEAF: Morphology:

دور ا



7. FRUIT: Typical fruit shape:





REFERENCES

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

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.

FORM LMGS-470-55 (2-82)

Exhibit D. Additional Description of NC EBR-3.

NC EBR-3 produced non-graded yields equivalent to 'Flora-Dade' and U.S. Combination Grade yields equivalent to or greater than 'Flora-Dade' (Tables 1-3).

NC EBR-3 is similar in season of maturity to 'Flora-Dade' (Table 4).

NC EBR-3 has fruit size similar to 'Flora-Dade' (Table 5).

TOMATO

NC EBR-3

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

NC EBR-3 was developed by Dr. R. G. Gardner, Professor of Horticultural Science and plant breeder with the N. C. Agricultural Research Service (NCARS), College of Agriculture and Life Sciences, N. C. State University. NC EBR-3 is owned exclusively by the NCARS which retains all rights to its use.

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|--|--|
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| 1. NAME OF APPLICANT(S) | | · | | |
| North Carolina Agricultural Research Service | 2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER | 3. VARIETY NAME | | |
| RWS 3-4-97 | 8682(X)-3-1 | NC EBR-3 | | |
| 4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) | 5. TELEPHONE (include area code) | | | |
| North Carolina State University Box 7643 | (704) 684-3562 | 6. FAX (include area code) (704) 684-8715 | | |
| Raleigh, NC 27695-7643 | 7. PVPO NUMBER | | | |
| 8. Does the applicant own all rights to the variety? Mark an "X" in appropriate is | block. If no, please explain. | X YES NO | | |
| | | | | |
| | | | | |
| Is the applicant (individual or company) a U.S. national or U.S. based company If no, give name of country | ? | X YES NO | | |
| 10. Is the applicant the original breeder? If no, please answer the following: a. If original rights to variety were owned by individual(s): Is (are) the original breeder(s) a U.S. national(s)? If no, give name of contents | | XYES NO | | |
| b. If original rights to variety were owned by a company: ls the original breeder(s) U.S. based company? If no, give name of course. | ntry | YES NO | | |
| 11. Additional explantion on ownership (If needed, use reverse for extra space): NC EBR-3 was developed by Dr. R. G. Gardner, Prof breeder with the NC Ag. Research Service, NC Stat Fletcher, NC 28732-9216. Phone: (704) 684-3562 PLEASE NOTE: | | I Science and plant nning Bridge Road, | | |
| Plant variety protection con her offended as | | | | |
| Plant variety protection can be afforded only to owners (not licensees) who meet on the rights to the variety are owned by the original breeder, that person must be of a country which affords similar protection to nationals of the U.S. for the same of the rights to the variety are owned by the company which employed the origin nationals of a UPOV member country, or owned by nationals of a country which a genus and species. | e a U.S. national, national of a UP e genus and species. | a M.C. based | | |
| . If the applicant is an owner who is not the original breeder, both the original bree | der and the applicant must meet a | ne of the above criteria | | |
| he original breeder may be the individual or company who directed final breedin | | | | |

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