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 HERETO 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 SUCCESSIONS, 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 FEE 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 (94 STAT. 1144, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

TOMATO

'Mountain Gold'

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 31st day of January in the year of our Lord one thousand nine hundred and ninety-two.

Kenneth Fox
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Edward Morin
Secretary of Agriculture
# APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

**Instructions on reverse**

1. **NAME OF APPLICANT(S) (as it is to appear on the Certificate)**
   - NC Agricultural Research Service
   - Dr. R. G. Gardner (Breeder)

2. **TEMPORARY DESIGNATION OR EXPERIMENTAL NO.**
   - 8466(X)-3-1A-1

3. **VARIETY NAME**
   - Mountain Gold

4. **ADDRESS (street and no. or R.F.D. no., city, state, and ZIP)**
   - NC State University
   - Box 7643
   - Raleigh NC 27695-7643

5. **PHONE (Include area code)**
   - 919-737-2717
   - 704-684-3562 (Breeder)

6. **GENUS AND SPECIES NAME**
   - Lycopersicon esculentum
   - Solanaceae

7. **FAMILY NAME (Botanical)**
   - Solanaceae

8. **CROP KIND NAME (Common Name)**
   - Tomato

9. **DATE OF DETERMINATION**
   - March 21, 1990

10. **IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.)**
    - State Governmental Agency

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
    - NC Foundation Seed Producers, Inc.
    - P.O. Box 33245, Method Station
    - Raleigh NC 27635

14. **CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED**
    - [ ] Exhibit A. Origin and Breeding History of the Variety
    - [ ] Exhibit B. Novelty Statement
    - [ ] Exhibit C. Objective Description of Variety
    - [ ] Exhibit D. Additional Description of Variety
    - [ ] Exhibit E. Statement of the Basis of Applicant's Ownership
    - [ ] Seed Sample (2.500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office
    - [ ] 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 SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See section 63(a) of the Plant Variety Protection Act.)**
    - [x] YES (If "YES," answer items 16 and 17 below)
    - [ ] NO (If "NO," skip to item 18 below)

16. **DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?**
    - [ ] YES
    - [x] NO

17. **IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?**
    - [ ] FOUNDATION
    - [ ] REGISTERED
    - [ ] CERTIFIED

18. **DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?**
    - [ ] YES (If "YES," through Plant Variety Protection Act
    - [ ] Patent Act
    - [ ] Give date:
    - [x] NO

19. **HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?**
    - [ ] YES (If "YES," give names of countries and dates)
    - [x] 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 owners 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 (Owner(s))**

[Signature]

**CAPACITY OR TITLE**

Director, NC Agri. Res. Surv.

**DATE**

11/14/90

**SIGNATURE OF APPLICANT (Owner(s))**

[Signature]

**CAPACITY OR TITLE**

Assoc. Prof. of Horticulture (Plant Breeder)

**DATE**

Nov. 13, 1990
Tomato
Mountain Gold

14A. Exhibit A:

Pedigree:

<table>
<thead>
<tr>
<th>NC 8288</th>
<th>Piedmont</th>
<th>Flora-Dade t'v</th>
</tr>
</thead>
<tbody>
<tr>
<td>8466(X)-3-1A-1-BK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mountain Gold</td>
<td>822(X)-6-1C -</td>
<td></td>
</tr>
<tr>
<td></td>
<td>UF-D78044 -</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jubilee</td>
</tr>
</tbody>
</table>

'Mountain Gold', an inbred line in the F6 generation, was developed using the pedigree breeding method. The objective in this breeding project was to develop a determinate, yellow-fruited (tangerine gene, t) cultivar as a replacement for the standard indeterminate cultivars 'Sunray' and 'Jubilee'.

The source of the t gene in 'Mountain Gold' was a breeding line, UF-D78044, obtained from the University of Florida tomato breeding program in 1981. This line had arisen from a cross between 'Jubilee', which has the t gene and a mutant of 'Flora-Dade' containing the t'v (tangerine virescent) gene. The inbred line 822(X)-6-1C, from a cross between 'Piedmont' and UF-D78044, was crossed with NC 8288 resulting in the line 8466(X)-3-1A-1, which is being released as 'Mountain Gold'.

Single plant selections were made in the F2 through F4 generations grown in field plots at Fletcher, N.C. A special bulk was made in the F5 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 race 1 and 2 (I, I-2 genes) of Fusarium oxysporum f. sp. lycopersici in greenhouse seedling inoculation tests.

Mountain Gold appeared stable and uniform in the F4 and F5 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.
14B. Exhibit B: Novelty Statement

'Mountain Gold' is most similar to 'Sunray' and 'Jubilee'. 'Mountain Gold' differs from 'Sunray' and 'Jubilee' in having the sp gene for determinate growth habit in contrast to the indeterminate habit of 'Sunray' and 'Jubilee'. 'Mountain Gold' has the u gene for uniform light green fruit color of non-ripe fruit in contrast to the dark green fruit shoulder color of 'Sunray' and 'Jubilee'. 'Mountain Gold' has the I and I-2 genes for resistance to races 1 and 2 of *Fusarium oxysporum* f. sp. *lycopersici* (fusarium wilt) and the Ve gene for resistance to *Verticillium dahliae* (verticillium wilt). 'Jubilee' has none of the above disease resistance genes and 'Sunray' has only the I gene.
**OBJECTIVE DESCRIPTION OF VARIETY**

**TOMATO (Lycopersicon esculentum Mill.)**

<table>
<thead>
<tr>
<th>NAME OF APPLICANT(S)</th>
<th>TEMPORARY DESIGNATION</th>
<th>VARIETY NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>NC Agricultural Research Service</td>
<td>3466(X)-3-1A-1</td>
<td>Mountain Gold</td>
</tr>
</tbody>
</table>

**Dr. R. G. Gardner (Breeder)**

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

NC State University  
Box 7643  
Raleigh NC 27695-7643

FOR OFFICIAL USE ONLY  
PVPO NUMBER  
9100052

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 zeros when necessary (e.g., 09 or 0811, 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. Give locations and dates of seeding and transplanting here:

**Transplant dates:** 5/30/88, 5/31/89, 5/25/90

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

<table>
<thead>
<tr>
<th>No.</th>
<th>Check Variety</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ace 56 VF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Campbell 37</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Chico III</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Flora Dade</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Florida MH-1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Heinz 1360</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**1. SEEDLING:**

<table>
<thead>
<tr>
<th>Character</th>
<th>Response</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthocyanin in hypocotyl of 2-15 cm. seedling</td>
<td>1. Habit of 34 week old seedling:</td>
<td>Normal</td>
<td>Compact</td>
</tr>
<tr>
<td>1. Anthocyanin in hypocotyl of 2-15 cm. seedling</td>
<td>1. Absent</td>
<td>2. Present</td>
<td></td>
</tr>
</tbody>
</table>

**2. MATURE PLANT (at maximum vegetative development):**

<table>
<thead>
<tr>
<th>Character</th>
<th>Response</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth</td>
<td>1. Indeterminate</td>
<td>2. Determinate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Form</td>
<td>1. Lax, open</td>
<td>2. Normal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size of canopy (compared to others of similar type)</td>
<td>1. Small</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Habit</td>
<td>1. Sprawling (decumbent)</td>
<td>2. Semi-erect</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**3. STEM:**

<table>
<thead>
<tr>
<th>Character</th>
<th>Response</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Branching at cotyledonary or first leafy node</td>
<td>1. Present</td>
<td>2. Absent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of nodes below the first inflorescence</td>
<td>1. 1-4</td>
<td>2. 4-7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of nodes between early (1st - 2nd, 2nd - 3rd) inflorescences</td>
<td>1. 3-7-10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pubescence on younger stems</td>
<td>1. Smooth (no long hairs)</td>
<td>2. Sparsely hairy (scattered long hairs)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Character</th>
<th>Response</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>1. Tomato</td>
<td>2. Potato (&quot;Trip-L-Crop&quot;)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Margins of major leaflets</td>
<td>1. Nearly entire</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marginal rolling or wiltiness</td>
<td>1. Absent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onset of leaflet rolling</td>
<td>1. Early-season</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Morphology (choose illustration on pg. 5 of this form that is most similar)**
4. LEAF (mature leaf beneath the 3rd inflorescence - continued):
   Surface of major leaflets:  
   1 = Smooth  
   2 = Rugose (bumpy or veiny)

   Pubescence:  
   1 = Smooth (no long hairs)  
   2 = Normal  
   3 = Hirsute  
   4 = Wooly

5. INFLORESCENCE (make observations on 3rd inflorescence):
   Type:  
   1 = Simple  
   2 = Forked (2 major axes)  
   3 = Compound (much branched)

   Number of flowers in inflorescence, average
   2

   Leafy or "running" inflorescences:  
   1 = Absent  
   2 = Occasional  
   3 = Frequent

6. FLOWER:
   Calyx:  
   1 = Normal, lobes awl-shaped  
   2 = Macroclyx, lobes large, leaflike  
   3 = Fleshy

   Calyx-lobes:  
   1 = Shorter than corolla  
   2 = Approx. equaling corolla  
   3 = Distinctly longer than corolla

   Corolla color:  
   1 = Yellow  
   2 = Old gold  
   3 = White or tan

   Style pubescence:  
   1 = Absent  
   2 = Sparse  
   3 = Dense

   Anthers:  
   1 = All fused into tube  
   2 = Separating into 2 or more groups at anthesis

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

   Abscission layer:  
   1 = Present (pedicellate)  
   2 = Absent (jointless)  
   3 = Point of detachment of fruit at harvest:  
   1 = At pedicel joint  
   2 = At calyx attachment

   mm length of pedicel (from joint to calyx attachment)
   0 7 0

   mm length of mature fruit (stem axis)
   0 9 2

   mm diameter of fruit at widest point
   3 1 5

   g weight of mature fruit
   2 5 0

   No. of locules:  
   1 = Two  
   2 = Three and four  
   3 = Five or more

   Fruit surface:  
   1 = Smooth  
   2 = Slightly rough  
   3 = Moderately rough or ribbed

   Fruit base color (mature-green stage):
   1 = Light green ('Lanai', 'VF145-65')  
   2 = Light gray-green ('Westover')  
   3 = Apple or medium green ('Heinz 1439 VF')  
   4 = Yellow green  
   5 = Dark green

   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

   Fruit color, full-ripe:  
   1 = White  
   2 = Yellow  
   3 = Orange  
   4 = Pink  
   6 = Brownish  
   7 = Greenish  
   8 = Other (Specify)

   Flesh color, full-ripe:  
   1 = Yellow  
   2 = Pink  
   3 = Red/Crimson  
   4 = Orange  
   5 = Other (Specify)

   Flesh color:
   1 = Uniform  
   2 = With lighter and darker areas in walls

   Locular gel color of table-ripe fruit:
   1 = Green  
   2 = Yellow  
   3 = Red

   Ripening:
   1 = Blossom-to-stem end  
   2 = Uniform
7. FRUIT (3rd fruit of 2nd or 3rd cluster): Continued

- Ripening: 1 = Inside out, 2 = Uniformly, 3 = Outside in
- Epidermis color: 1 = Colorless, 2 = Yellow
- Epidermis: 1 = Normal, 2 = Easy-peel
- Epidermis texture: 1 = Tender, 2 = Average
- Thickness of pericarp: 1 = Under 3 mm, 2 = 3-6 mm, 3 = 6-9 mm, 4 = Over 9 mm
- Stem scar size: 1 = Small ('Roma'), 2 = Medium ('Rutgers'), 3 = Large
- Core: 1 = Coreless (absent or smaller than 6x6 mm), 2 = Present

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

- Blossom end rot: 2
- Blotchy ripening: 2
- Bursting: 2
- Catface: 2
- Cracking, concentric: 2
- Cracking, radial: 2
- Fruit pox: 2
- Gold fleck: 2
- Graywall: 2
- Zippering: 2

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:
- Cucumber mosaic: 0
- Curly top: 0
- Potato-Y virus: 0
- Tobacco mosaic, Race 0: 0
- Tobacco mosaic, Race 1: 0
- Tobacco mosaic, Race 2: 0
- Tomato spotted wilt: 0
- Tomato yellows: 0
- Other virus (Specify) __________

BACTERIAL DISEASES:
- Bacterial canker (Corynebacterium michiganense): 0
- Bacterial soft rot (Erwinia carotovora): 0
- Bacterial speck (Pseudomonas tomato): 0
- Bacterial spot (Xanthomonas vesicatorium): 0
- Bacterial wilt (Pseudomonas solanacearum): 0
- Other bacterial disease (Specify) __________

FUNGAL DISEASES:
- Anthracnose (Colletotrichum spp.): 0
- Brown root rot or corky root, (Pyrenochaeta lycopersici): 0
- Collar rot or stem canker, (Alternaria solani): 0
- Early blight defoliation, (Alternaria solani): 0
- Fusarium wilt, Race 1, (F. oxysporum f. lycopersici): 0
- Fusarium wilt, Race 2: 0
- Fusarium wilt, Race 3: 0
- Gray leaf spot (Stemphylium spp.): 0
- Leaf mold, Race 1 (Cladosporium fulvum): 0
- Leaf mold, Race 2: 0
- Leaf mold, Race 3: 0
- Leaf mold, other races (Specify) __________
- Nailhead spot (Alternaria tomatana): 0
- Septoria leafspot (S. lycopersici): 0
- Target leafspot (Corynespora cassicola): 0
- Verticillium wilt, Race 1 (V. albo-atrum): 0
- Verticillium wilt, Race 2: 0
- Other fungal disease __________
- Other fungal disease __________
9. DISEASE AND PEST REACTION (Use code: 0 = Not tested, 1 = Susceptible, 2 = Resistant – Continued)

INSECTS AND PESTS:

- 0 Colorado potato beetle (*Leptinotarsa decemlineata*)
- 0 Tomato hornworm (*Manduca quinquemaculata*)
- 0 Southern root knot nematode (*Meloidogyne incognita*)
- 0 Tomato fruitworm (*Heliothis zea*)
- 0 Spider mites (*Tetranychus spp.*)
- 0 Whitefly (*Trialeurodes vaporariorum*)
- 0 Sugar beet army worm (*Spodoptera exigua*)
- Other (Specify) ________________
- 0 Tobacco flea beetle (*Epitrix hirtipennis*)

POLLUTANTS:

- 0 Ozone
- 0 Sulfur dioxide
- Other (Specify) ________________

10. CHEMISTRY AND COMPOSITION OF FULL-RIPE FRUITS: Suggested test methods may be found in "Tomato Products," 6th 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.

<table>
<thead>
<tr>
<th>SUBMITTED VARIETY</th>
<th>Check Variety</th>
<th>Check Variety</th>
<th>Check Variety</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>4.3</td>
<td>4.3</td>
<td></td>
</tr>
<tr>
<td>Titrateable acidity, as % citric</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total solids (dry matter, seeds and skin removed)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soluble solids, as °Brix at 21°C</td>
<td>3.7</td>
<td>4.5</td>
<td></td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>APPLICATION VARIETY</th>
<th>Check variety</th>
<th>Check variety</th>
<th>Check variety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seeding to 50% flower (1 open flower on 50% of plants)</td>
<td>60.8 days</td>
<td>66.8 days</td>
<td></td>
</tr>
<tr>
<td>Seed to once-over harvest (if applicable)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fruiting season:
- 1 = Long ('Marglobe')
- 2 = Medium ('Westover')
- 3 = Short, concentrated ('VF 145')
- 4 = Very concentrated ('UC 82')

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.

<table>
<thead>
<tr>
<th>Culture:</th>
<th>1 = Field</th>
<th>2 = Greenhouse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal use(s):</td>
<td>1 = Home garden</td>
<td>2 = Fresh market</td>
</tr>
<tr>
<td>Machine harvest:</td>
<td>1 = Not adapted</td>
<td>2 = Adapted</td>
</tr>
<tr>
<td>Regions to which adaptation has been demonstrated:</td>
<td>1 = Northeast</td>
<td>2 = Mid Atlantic</td>
</tr>
</tbody>
</table>
4. LEAF: Morphology:

(1) (2) (3) (4) (5)

7. FRUIT: Typical fruit shape:

(1) (2) (3) (4) (5)

(6) (7) (8) (9) (10)

Shape of transverse section:

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

Shape of stem end:

1=flat 2=Indented

Shape of blossom end:

1=Indented 2=Flat 3=Nippled 4=Tapered

Shape of pistil scar:

1=Dot 2=Stellate 3=Linear 4=Irregular

REFERENCES


14D. Exhibit D. Additional Description of 'Mountain Gold'

'Mountain Gold' produces higher total and graded fruit yields than 'Sunray' (Table 1).

'Mountain Gold' has much better resistance to fruit angularity and puffiness than 'Sunray', resulting in a lower percentage of off-shape fruit (Table 2).

'Mountain Gold' is earlier in maturity and has larger fruit than 'Sunray' (Tables 3 and 4).
Table 1. Yield (20-lb boxes/acre) of 'Mountain Gold' tomato compared to 'Sunray', Fletcher, N.C.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mountain Gold</td>
<td>4506</td>
<td>4134</td>
<td>4000</td>
<td>3663</td>
<td>2785</td>
<td>2063</td>
</tr>
<tr>
<td>Sunray</td>
<td>4040</td>
<td>3152</td>
<td>3004</td>
<td>1949</td>
<td>924</td>
<td>627</td>
</tr>
<tr>
<td>LSD (.05)</td>
<td>487</td>
<td>770</td>
<td>443</td>
<td>609</td>
<td>382</td>
<td>446</td>
</tr>
</tbody>
</table>

Table 2. Fruit defects of 'Mountain Gold' tomato compared to 'Sunray', Fletcher, N.C.

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Rough blossom scar (%)</th>
<th>Fruit cracking (%)</th>
<th>Off-shape (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mountain Gold</td>
<td>13</td>
<td>17</td>
<td>21</td>
</tr>
<tr>
<td>Sunray</td>
<td>16</td>
<td>22</td>
<td>72</td>
</tr>
<tr>
<td>LSD (.05)</td>
<td>NS</td>
<td>NS</td>
<td>6</td>
</tr>
</tbody>
</table>

Table 3. Early season (1st. 2 weeks of harvest) of 'Mountain Gold' tomato compared to 'Sunray', Fletcher, N.C.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mountain Gold</td>
<td>1151</td>
<td>1042</td>
</tr>
<tr>
<td>Sunray</td>
<td>947</td>
<td>601</td>
</tr>
<tr>
<td>LSD (.05)</td>
<td>198</td>
<td>240</td>
</tr>
</tbody>
</table>

Table 4. Fruit size of 'Mountain Gold' tomato compared to 'Sunray', Fletcher, N.C.

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Fruit wt. (gms/fruit)</th>
<th>% Jumbo (&gt;3½&quot; diam)</th>
<th>% Extra-lg. (3-3½&quot; diam)</th>
<th>% Large (2½-3&quot; diam)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mountain Gold</td>
<td>318</td>
<td>63</td>
<td>34</td>
<td>3</td>
</tr>
<tr>
<td>Sunray</td>
<td>241</td>
<td>19</td>
<td>64</td>
<td>17</td>
</tr>
<tr>
<td>LSD (.05)</td>
<td>14</td>
<td>9</td>
<td>NS</td>
<td>4</td>
</tr>
</tbody>
</table>
TOMATO

Mountain Gold

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

Mountain Gold was developed by Dr. R. G. Gardner, Associate 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. Mountain Gold is owned exclusively by the NCARS which retains all rights to its use.