

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Ferry-Morse Seed Company

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, 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 (P.L. 80-821, 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

TOMATO

'VF 9209'



In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, this 27th day of February in the year of our Lord one thousand nine hundred and eighty-four.

Attest

Kenneth A. Evans
Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

John R. Block
Secretary of Agriculture

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

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

INSTRUCTIONS: See Reverse.

1a. TEMPORARY DESIGNATION OF VARIETY E9209		1b. VARIETY NAME VF 9209		FOR OFFICIAL USE ONLY PV NUMBER 8200059	
2. KIND NAME- Tomato		3. GENUS AND SPECIES NAME. Lycopersicon esculentum Mill.		FILING DATE 1/25/82	TIME 1:00 A.M. P.M.
4. FAMILY NAME (BOTANICAL) Solanaceae		5. DATE OF DETERMINATION 11/16/79		FEE RECEIVED \$ 500.00	DATE 1/25/82
6. NAME OF APPLICANT(S) Ferry-Morse Seed Company		7. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) 111 Ferry-Morse Way Drawer 7274 Mountain View, Calif. 94042		8. TELEPHONE AREA CODE AND NUMBER (408) 637-7461	
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (Corporation, partnership, association, etc.) Corporation		10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION California		11. DATE OF INCORPORATION 7 April 1969	
12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS: Dr. David J. Thompson, Vice President Ferry-Morse Seed Company P. O. Box 1010, San Juan Bautista, California 95045					

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

13A. Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)

13B. Exhibit B, Novelty Statement.

13C. Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.)

13D. Exhibit D, Additional Description of the Variety.

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

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

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

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

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

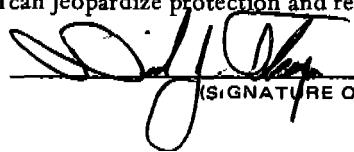
16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? YES NO

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

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

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

12/30/81
(DATE)


(SIGNATURE OF APPLICANT)

(DATE)

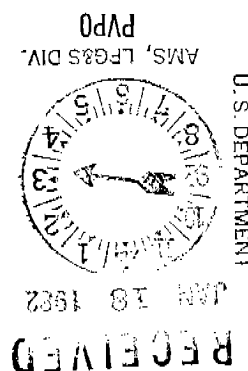
(SIGNATURE OF APPLICANT)

INSTRUCTIONS

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

ITEM

- 5 Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.
- 13a Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.
- 13b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.
- 13c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.
- 13d Describe- **any additional** characteristics **that** are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe; **such** as, plant habit, plant color, disease resistance, etc.
- 14a If "YES" is specified (seed of this variety **be sold** by variety name only as a class-of certified seed) the applicant may NOT reverse his affirmative decision after the variety **has either** been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "**NO**," he may change his choice. (See section 180.16 of the Regulations and Rules of Practice.)
- 15a See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.



12/31/81

8200059

VARIETY: VF 9209, formerly **E9209**

EXHIBIT A: Origin and Breeding History of the Variety

VF 9209 was selected as a single plant selection, using the pedigree method of breeding, from a cross **made** in March of 1973 between a **selection out** of **UC105-2-2**, designated **UC105-2-2Ms(M4)H**, used as seed parent and **UC82-2** as the pollen parent.

F1 plants were compact determinate with a heavy set of medium sized, firm, tough fruit. **F2** seeds from several **F1** plants were harvested from row f3598 in October of 1973 at San Juan Bautista, California.

F2 plants in 1974 had good crops of early **maturing**, firm and **tough**, square-round, medium-small fruit all uniform green while immature. **F3** seeds were saved from four selected plants in row **#20068** in October of 1974 at San Juan Bautista, California.

F3 plant progenies of the four selected plants were noted in **1975**, and the third row had the best **combination** of fruit size, **set, firmness, and** lab quality. Five selections were taken from this row **#34340** in October of 1975.

In 1976, the progeny from selection **#3** looked very good in a heat tolerance trial seeded May 28 U.C. at the West Side Field Station in Fresno County. The vines were compact with a heavy set of early maturing fruit. Nineteen selections were taken from row **#15** in September of 1976.

In 1977, the progeny from selection **#5** looked very good at San Juan Bautista and the West Side Field Station. This lot showed high soluble solids of 4.7 and 4.6, and it was early with excellent fruit set at both locations. **F6** generation seeds were massed from the San Juan Bautista row **#52009** in October 1977.

In 1978, this lot (**52009-Ms**) was placed in a variety trial along with **UC82B** at San Juan Bautista. They were similar in many respects but 52009 had distinctly higher soluble solids and the foliage was a larger leaf type with more pronounced curly habit. Seed was saved **for** additional trials.

In 1979, 1980, and 1981 this lot was increased and **trialed** under the designation **E9209** with the University of California at Davis and with County Farm Advisors. No obvious "offs" were found in the 10,000 plant increase in 1980.

8200059

Trials throughout California and other tomato growing areas during 1979, 1980, and 1981 showed E9209 to be widely adapted and commercially desirable for **machine** harvest and processing. Lab quality analyses continued to show that **E9209** has significantly higher soluble solids than **UC82B** with similar to lower yields depending on heat stress.

*See supplementary Exhibit A statement on uniformity and stability.
CKB:mc
1/30/84*

VARIETY: VF 9209 (E 9209)

EXHIBIT A: Supplement

Seed increases for VF 9209 were made in 1979, 1980 and 1981, These increases consisted of 200 plants, 10,000 plants and 100,000 plants respectively and were found to be very uniform and stable with no obvious off-type plants or fruit,

January 7, 1983

12/30/81

VARIETY: **E9209**

8200059

EXHIBIT B: Novelty Statement

*See my phone
2/10*

VF 9209 most closely resembles **UC82B** since both have similar fruit and vine types. **VF** 9209 has consistently exhibited higher **soluble solids** than **UC82B** as well as higher **pH**. The yields are similar under normal **tomato** growing conditions in California; however, when abnormally high temperatures occur day & night during flowering, the yields of **UC82B** are usually superior to **VF** 9209. This situation occurred during the 1981 season in California.

The following table **summarizes** replicated trial data for soluble solids collected in 1980 and 1981 in Central California.

<u>Trial</u>	<u>VF 9209</u>	<u>UC82B</u>	<u>LSD @ 5%</u>
1980 TVG Trial - S & Y Farms	5.14	4.45	.40
1980 Univ. California State Trials - 5 counties	4.97	4.68	.18
1981 TVE Trial - Heringer Ranch	5.12	4.66	.37
1981 Univ. California State Trials - 6 counties	5.52	5.02	.23

For the actual trial data see the four attached trial reports.

1980

8200059

TVG REPLICATED TRIAL - S & Y FARMS

DUNCAN'S MULTIPLE RANGE TEST

- SOLUBLE SOLIDS -

5 replications in trial

<u>RANK</u>	<u>VARIETY</u>	<u>SOLIDS</u>	<u>STATISTICAL GROUPING</u>
1	'NCX 3058	5.86	a
2	NCX 3048	5.45	b
3	NCX 3055	5.41	bc
4	E 60843	5.39	bc
5	MURRIETA	5.37	bc
6	NCX 3053	5.35	bcd
7	<i>Std</i> VF 14 5-7879	5.28	bcde
8	cx 499	5.22	bcde
9	TRIUMPH	5.20	bcdef
10	CX 1616 B	5.14	bcdefg
10	E 9209	(5.14)	bcdefg
12	E 6203	5.12	bcdefg
13	PETO 94	5.04	bcdefgh
14	E 9208	5.01 \bar{x}	bcdefgh
15	UC M75-28-2-3-1	4.97	bcdefgh
15	GS 33	4.97	bcdefgh
17	PETO 98	4.94	cdefghi
18	cx 1017	4.93	cdefghi
19	CX 1617	4.88	defghij
20	PACESETTER 502	4.87	defghij
21	NCX 3032	4.80	efghijk
22	GS 36	4.72	fghijk
22	VALOR	4.72	fghijk
24	PETO 96	4.67	ghijk
25	PSR 12088	4.57	hijk
26	PETO 95-40	4.47	ijk
27	<i>Std</i> UC 82	(4.45)	jk
28	GS 27	4.36	k

LSD .05 = .40

\bar{x} = 5.01

TABLE 3. COMBINED PERFORMANCE OF REPLICATED ENTRIES IN 1980
PROCESSING TOMATO UNIFORM VARIETY TRIALS

8200059

(Six Counties Combined - Colusa, Yolo, Solano,
San Joaquin, Stanislaus, and Fresno)

Variety	Yield T/A 1	Soluble Solids ²	Soluble Yield T/A 3	Grams/ Fruit ⁴	pH ⁵	% Citric ⁶	Color ⁷	Viscosity ⁸
GS #27	43.0	4.75	2.01	81	4.41	0.29	18	86
Castlex 1017	38.8	5.11	1.94	82	4.36	0.36	18	60
UCX 99M-3	38.2	5.16	1.91	85	4.40	0.33	17	a4
NCX 3032	38.2	5.04	1.90	68	4.42	0.30	14	108
<i>Std</i> UC 82B	38.1	(4.68)	1.74	58	4.33	0.30	16	115
ucx 204-9	37.0	5.23*	1.89	71	4.34	0.34	18	111
<i>Std</i> VF 145-B7879	36.9	5.22*	1.91	82	4.37	0.38	19	65
E-9209	36.3	(4.97)	1.76	63	4.42	0.33	16	94
GS #28	35.6	5.14	1.78	84	4.43	0.30	18	90
E-9208	35.1	4.90	1.68	75	4.45	0.32	17	79
Peto 95	34.6	4.46	1.52	63	4.48	0.26	15	77
XP 502	34.4	4.61	1.56	68	4.43	0.30	16	82
Castlex 499	33.4	4.90	1.60*	62	4.35	0.32	16	101
Hybrid 31	32.7	4.58	1.48	85	4.47	0.29	18	70
Peto 94	32.3	4.98	1.59	69	4.42	0.33	17	60
LSD @ 5%	2.2	0.18	0.10	4	0.02	0.04	2	31
CV (%)	10.5	6.5	10.5	10	1.0	10.6	11	32
Combined avg.	36.3	4.91	1.75	73	4.40	0.32	17	86

¹Those varieties whose mean values are different by a number less than the **LSD** do not differ significantly at the 5 percent level of significance. Only 5 percent of the time would the quantity vary more than the **LSD** due to chance occurrence; i.e., we are 95% sure the differences are real.

²Soluble solids or sugar content in degrees **brix**. Greatly influenced by cultural practices, particularly water cut-off. Increases rapidly with stress, hence inversely related to yield.

³Calculated by yield x % soluble solids.

⁴A measure of fruit size, One pound equals 454 grams.

⁵The lower the reading, the better. **pH** of 4.35 is considered the division line. **pH** increases as the fruit matures. **Overmature** fruit characteristically have high **pH** values.

⁶% Citric is calculated from total acid content. Another measure of acidity other than **pH**.

⁷**Color** is **Agtron** reading of **comminuted** sample, The lower the reading, the better the color.

⁸Viscosity readings are flow seconds. Seconds it took for a measured quantity of raw **gross** juice to flow through an orifice. Variable, probably influenced by several **factors**: age of fruit, irrigation practices, etc.

8200059

1981

TVG RRPLICATED TRIAL -HERINGER RANCH
 DUNCAN'S MULTIPLE RANGE TEST - SOLIDS

5 replications in trial

<u>RANK</u>	<u>VARIETY</u>	<u>SOLIDS</u>	<u>STATISTICAL GROUPING</u>
1	VF 145-7879 <i>Std</i>	5.42 *	a
2	G.S. 20	5.32	ab
3	FMX 785	5.20	abc
3	MOX 3067	5.20	abc
5	Peto 94	5.16	abc
6	UCX 142-1-2	5.14	abc
7	E 9209	(5.12)	abc
8	Peelmech --	5.04	abcd
9	cx 1017	5.02	abcd
10	E 6203 ---	5.00	abcde
11	Peelette	4.98	bcdef
12	Murrieta <i>Std</i>	4.92	bcdefg
13	Joaquin	4.90	bcdefg
13	Peto 81	4.90	bcdefg
15	G.S. 33	4.88 --	cdefg
16	Peto 98	4.80	cdefgh
17	PSR 1488	4.78'	cdefgh
18	UC 82 <i>Std</i>	(4.66)	defgh
19	UCX 78W-29	4.64	defgh
20	GSX 1	(4.58)	efgh
21	cx-1504	(4.56)	fgh
22	FMX 749	(4.54)	gh
23	PSR 9889	(4.40)	h

LSD_{.05} = .37 \bar{X} = 4.92

TABLE 2. 1981 STATEWIDE PROCESSING TOMATO VARIETY TRIALS
COMBINED YIELD AND QUALITY DATA
(REPLICATED VARIETY TRIALS)

(YOLO, SOLANO, SAN JOAQUIN, STANISLAUS AND FRESNO COUNTIES COMBINED)

Variety	Yield (T/A) ¹	°Brix ²	Brix Yield (T/A) ³	% Citric ⁴	Grams/ Fruit ⁵	pH ⁶	Color ⁷	Viscosity ⁸	
GS #27	36.0	a	5.13	1.85	0.34	64.0	4.31	16.4	106
<i>Std</i> UC 82B	34.0	ab	(5.02)	1.69	0.36	53.7	4.30	17.0	142
GS #22	33.9	ab	5.32	1.79	0.40	65.8	4.37	16.9	125
KS 5715	33.0	bc	5.04	1.65	0.36	52.5	4.30	15.5	125
Castlehy 1017	31.9	bcd	5.45	1.73	0.36	76.3	4.32	18.6	103
Heinz 733	30.7	cde	5.09	1.56	0.35	67.3	4.39	16.3	120
<i>Std</i> VF 145-B7879	30.2	def	5.91	1.78	0.43	72.9	4.32	19.3	60
E-9208	30.2	def	5.53	1.66	0.36	64.9	4.41	16.1	126
Peto 98	28.6	ef	5.51	1.57	0.35	56.2	4.36	15.6	144
UCX 204-9	28.5	ef	(5.73)	1.63	0.42	61.3	4.29	16.9	146
E-9209	28.4	ef	5.52	1.56	0.39	55.8	4.36	15.8	142
Murrieta	28.2	efg	5.87	1.64	0.41	58.6	4.36	19.0	173
XP 616	28.0	efg	5.84	1.63	0.43	56.6	4.27	18.0	176
Castlex 489G	27.6	fg	5.44	1.51	0.38	97.0	4.33	16.4	137
XP 600	25.7	gh	5.58	1.43	0.41	58.3	4.33	19.0	137
NCX 3032	24.8	h	5.85	1.44	0.37	52.2	4.33	14.8	190
Peto 94	24.8	h	5.66	1.40	0.39	62.8	4.35	16.6	124
LSD @ 5%	2.4		0.23	0.12	0.04	3.8	0.03	2.10	46
CV (%)	12.8		6.8	12.4	9.4	9.4	1.1	10.8	29.4
Trial average	29.7		5.50	1.62	0.38	63.3	4.34	17.0	134

¹Those varieties whose mean values are different by a number less than the LSD do not differ significantly at the 5 percent level of significance. Only 5 percent of the time would the quantity vary more than the LSD due to chance occurrence; i.e., we are 95% sure the differences are real.

*Degrees Brix is a measure of soluble solids or sugar content. Greatly influenced by cultural practices, particularly water cut-off. Increases rapidly with stress, hence inversely related to yield.

³Calculated by yield x % degrees brix.

⁴% Citric is calculated from total acid content. Another measure of acidity other than pH.

⁵A measure of fruit size. One pound equals 454 grams.

⁶The lower the reading, the better. pH of 4.35 is considered the division line. pH increases as the fruit matures, Overmature fruit characteristically have high pH values.

⁷Color is Agtron reading of comminuted sample. The lower the reading, the better the color.

⁸Viscosity readings are flow seconds. Seconds it took for a measured quantity of raw gross juice to flow through an orifice. Variable, probably influenced by several factors: age of fruit, irrigation practices, etc.

VARIETY: VF9209 (formerly E9209)

EXHIBIT "B": Novelty Statement - supplement 1983

VF9209 and **Castlex 499** have very similar **fruit** shape and size but the outer pericarp wall **thickness** and the core depth exhibit significant differences at San Juan **Bautista, CA.** on **10/10/83.** Measurements were made on fruit from 19 plants of each variety in adjacent rows as follows:

VF9209 \bar{x} = 8.4 mm outer wall thickness
Castlex 499 \bar{x} = 7.4 mm outer wall **thickness**
calculated $t = 3.88$
Probability = $<.001$

VF9209 \bar{x} = 7.3 mm core depth
Castlex 499 \bar{x} = 4.5 mm core depth
calculated $t = 4.22$
Probability = $<.001$

When late **blight** moved into the field, all plants of **Castlex 499** defoliated before **foliage** of **VF9209** showed much **infection.**

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

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

Name of applicant FERRY-MORSE SEED COMPANY	Temporary designation E9209	Variety Name VF9209
Address (Street and No. or R.F.D. No., City, State, Zip) 111 Ferry-Morse Way Drawer 7274 Mountain View, CA 94042	FOR OFFICIAL USE ONLY PVPO NUMBER	

Choose responses which best represent your variety in the characters below. When a single quantitative value is requested (e.g. fruit weight), your answer should be the mean of an adequate, unbiased sample of plants. The applicant variety should be compared with at least one well-known standard check variety of the same type, and grown in the same trial(s). The characters on this form should be described from plants grown under normal conditions of culture for the variety. Indicate by a check whether trial data are from greenhouse ___ or field X plantings. Trials direct-seeded X or transplanted ___. Give locations and dates of trials San Juan Bautista, CA seeded 4/28/81. Use leading zeroes when necessary (e.g. 019 or 01811, etc.). Complete this form as fully as possible for best characterization of the variety.

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

Anthocyanin in hypocotyl: 1 = absent normal 2 = present giant

2. MATURE PLANT:

Habit: Growth habit: (compared to 1 over: 1 = sprawling indeterminate to 1 others = light (decumbent) of 2 to 3 = moderate growth semi-determinate 2 = type: semi-erect 1 = heavy 1 = small 3 = erect determinate 2 = medium 3 = large

3. STEM:

Internode length (between the 1st and 4th inflorescences):

1 = short 2 = intermediate () 3 = long ()

Branching: 1 (= sparse) (Brehm's Solid Red) 2 = intermediate ()

3 = profuse (UC82)

Pubescence at or first node: 1 2 = absent

Branching smooth (cotyledonary hairs) = 2 sparsely hairy (scattered long hairs)

3 = densely hairy or canescent

No. of nodes below the first inflorescence:

2 Thickness: 1 = few (1 = slender,) weak 2 = intermediate 2 = medium thickness () 3 = thick, many (stiff)

No. of nodes (leaves) between inflorescences

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

Type: 1 = tomato 2 = potato

Division: 1 = once-pinnate 2 = intermediate (pinnate-bipinnate)

3 = bipinnate, many small leaflets with the large ones

Attitude: 1 = semi-erect 2 = horizontal 3 = drooping

Leaflet blade: 1 = thin 2 = medium 3 = thick

Bases of major leaflets: 1 = even 2 = oblique (the sides offset on petiole)

Margins of major leaflets: 1 = near entire 2 = shallowly toothed or scalloped

3 = deeply toothed or cut, especially towards base

Marginal rolling: 1 = absent 2 = present

TOMATO - 2

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

- 1 Surface of major leaflets: 1 = smooth 2 = rugose (bumpy or veiny)
- 2 Leaflet: 1 = normal 2 = li@tlp wilted 3 = wilted
- 2 Shape of major leaflets: 1 = broadly ovate 2 = ovate to lanceolate
3 = ltnltr and lanceolate, tptrtd to a point
- 2 Pubescence or hairiness: 1 = smooth 2 = normal 3 = woolly
- 4 Color of ltafltr: 1 = light green (Earlinorth) 2 = medium green ()
3 = gray-green () 4 = dark green (UC82)
- 4 Color of ltaf on check variety (same atalt): Variety UC82B

5. INFLORESCENCE:

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

6. FLOWER:

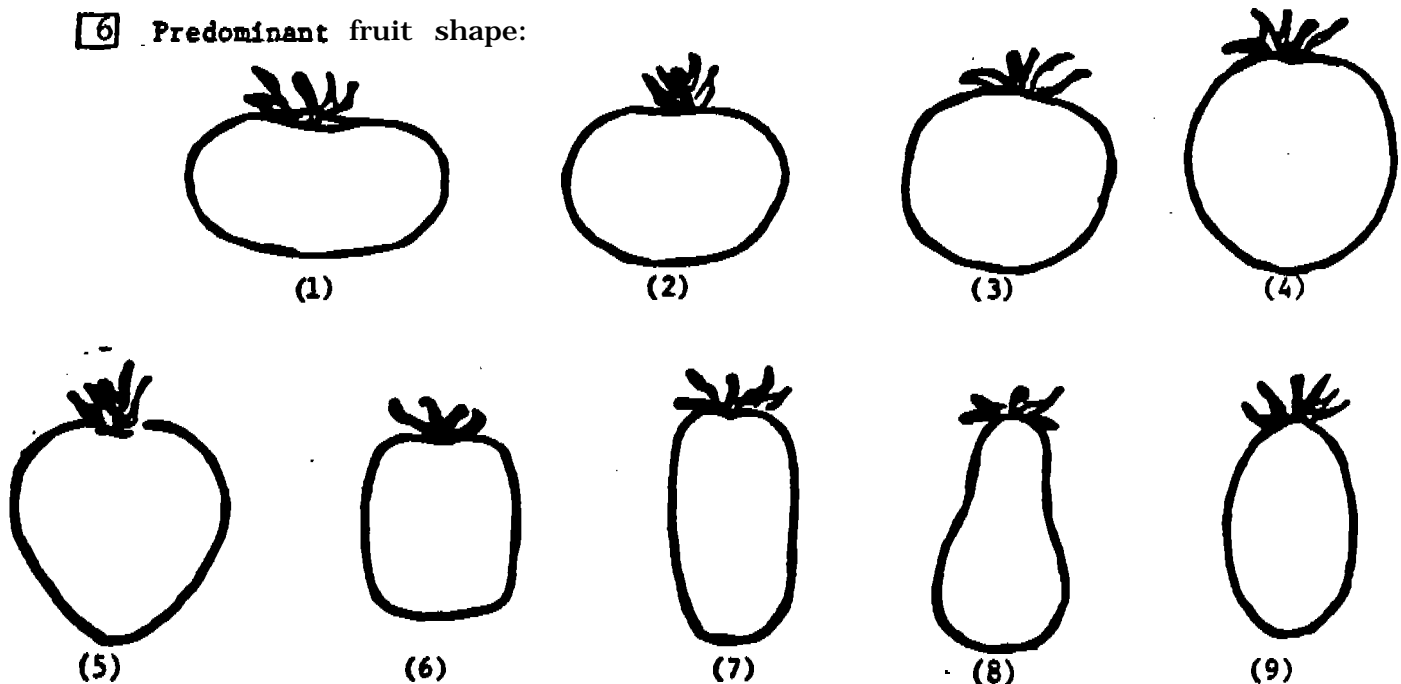
- 1 Calyx: 1 = normal (lobes awl-shaped) 2 = macrocalyx (lobes large, leaflike)
3 = fleshy
- 1 Flower color: 1 = yellow 2 = old sold 3 = white or tan
- 1 Style exertion: 1 included 2 with vestamens 3 exerted
Style pubescence: 1 = absent 2 = aparae 3 = dense
- 1 Anthers: 1 = all fused into tube 2 = separating into 2 or wre 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):

- 1 Abscission layer: 1 = present (pedicellate) 2 = absent (jointless)
- 4 mm. Length of pedicel (from abscission layer or joint to calyx attachment)
- 4 Mature fruit: Maximum diameter:
1 = small cherry (20 mm) 2 = large cherry (20-35 mm)
3 = cocktail (35-48 mm) 4 = U.S. extra small (48-54 mm)
5 = U.S. small (54-58 mm) 6 = U.S. medium (58-64 mm)
7 = U.S. large (64-73 mm) 8 = U.S. extra large (73-88 mm)
9 = U.S. maximum large (88-100 mm) 10 = U.S. maximum large (> 100 mm)
- 3 Maximum diameter of check variety, same classes as above
(Specify name) UC82B

0 7 2 g Fruit weight 0 5 9 g Check variety UC82B

6 Predominant fruit shape:



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

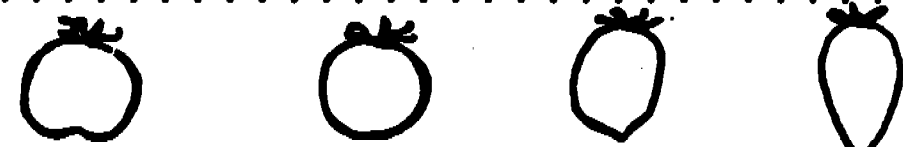
TOMATO - 3

Shape Of transverse section:



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

of blossom end:




1-indentated 2=flat 3=nipped 4=tapered

Shape of stem end:



1-flat 2=indentated

Shape of pistil scar:



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

Fruit surface: 1 = smooth 2 = slightly fasciated 3 = moderately fasciated

Fruit color (mature-green stage):
 1 = light green ('Lanai', VF145-F5) 2 = Lt. gray-green ()
 3 = apple green ('Heinz 1439 VF') 4 = dark green ()

Fruit pattern (mature-green stage): 1 = green shouldered 2 = uniform green

Mature fruit color (full-ripe): 1 = white 2 = yellow 3 = tangerine
 4 = pink 5 = red 6 = brownish-red
 7 = greenish 8 = other (specify) _____

Flesh color (full-ripe): 1 = yellow 2 = red 3 = crimson 4 = other _____

Epidermis: 1 = normal 2 = easy-peel

Epidermis color: 1 = colorless 2 = yellow

Epidermis thickness: 1 = thin 2 = average 3 = thick

Thickness of pericarp: 1 = thin (< 3 mm) 2 = medium (3-6 mm) 3 = thick (> 6 mm)

Thickness of pericarp of check variety (same scale) Variety: UC82B

Core size: 1 = coreless 2 = small 3 = medium 4 = large

Core shape: 1 = solid, unbranched 2 = branched

Core texture: 1 = soft, edible 2 = tough or fibrous

Stem scar size: 1 = small () 2 = medium () 3 = large ()

No. of locules: 1 = two 2 = three and four 3 = five or more

Fruit firmness¹ (minimum table-ripe):
 1 = extra-soft ('Gardener') 2 = very soft ('Valiant') 3 = soft ('Campbell 28')
 4 = fairly firm ('Tropic') 5 = firm ('MH-1') 6 = very firm ('UC-82')

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

Days/beat units from seed to first open flower:
 days, Application variety days, Check variety No. 1 _____
 days, Check variety No. 2 _____

Days/heat units from seed/transplan(indicate which) to first ripe fruit:
 days, Application variety days, Check variety No. 1 _____
 days, Check variety No. 2 _____

¹For definitions of these subjective terms 666 Kader & Morris (1976) In: Proc. 2nd Tomato Quality Workshop.

TOMATO - 4

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

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

160 days, Application variety 160 days, Check variety No. 1 UC82B
152 days, Check variety No. 2 VF6203

Days/heat units from breaker to full-ripe stage:
days, Application variety days, Check variety No. 1
days, Check variety No. 2

Shelf life of ripe fruit:
days, Application variety days, Check variety No. 2

4 Fruiting season: 1 = long ('Marglobe') 2 = medium ('Westover')
3 = short, concentrated ('VP 145') 4 = very concentrated ('UC 82')
2 Relative maturity: 1 = early 2 = medium early 3 = medium
4 = medium late 5 = late

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

1 Culture: 1 = field 2 = greenhouse
1 = unstaked 2 = staked or trellised
3 Principal use(s): 1 = home garden 2 = fresh market
3 = processing 4 = other

2 Machine harvest: 1 = not adapted 2 = adapted
8 Recommended region: 1 = Northeast/Midatlantic 2 = Southeast
3 = Midwest/Great Lakes 4 = South-central
5 = Great Plains 6 = Intermountain West
7 = Northvest 8 = Central California
9 = Southwest/So. California 10 = General
11 = Other (specify)

2 Growing season temperature: 1 = cool 2 = normal warm 3 = hot 4 = general
2 Growing season humidity: 1 = humid 2 = semi-arid 3 = general
1 Soils: 1 = mineral 2 = organic 3 = general

10. RESISTANCE OR TOLERANCE TO ENVIRONMENTAL STRESS:

2 High temperature fruit set (subjective valuation based on fruit set et temperatures that normally inhibit et in of valuation):
1 = poor 2 = fair 3 = good ('Sumbertine') AREA Fresno late May seeding
Low temperature fruit (subjective evaluation based on fruit set at low temperatures that normally inhibit germination): 1 = poor 2 = fair 3 = good ('Veecrop')
AREA
Low temperature seed germination: 1 = poor () 2 = fair ()
3 = good ()

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

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

TOMATO - 5

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

Viral Diseases:

- Cucumber mosaic curly top Pots to-Y virus
 Tobacco mosaic, Race 0 Tobacco mosaic, Race 1 (Tm 1) Tobacco mosaic, Race 2 (Tm 2)
 Tobacco mosaic, Race 2² (Tm 2²) Tomato spotted wilt Tomato yellows
 Other (specify) _____

Bacterial Diseases:

- Bacterial canker (Corynebacterium michiganense) Bacterial soft rot (Erwinia carotovora)
 Bacterial speck (Pseudomonas tomato) Bacterial spot (Xanthomonas vesicatorum)
 Bacterial wilt (Pseudomonas solanacearum)
 Other bacterial disease (specify) _____

Fungal Diseases:

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

Insect and Pests:

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

Pollutants:

- Ozone Sulfur dioxide Other (specify) _____

REFERENCES

- Anonymous, 1976. All About Tomatoes. Ortho Books, Chevron Chemical Co., San Francisco. In three volumes: Midwest/Northeast Edition, West Edition, and South Edition.
 Ware, G. W. & J. P. McCollum, 1968. Producing Vegetable Crops. The Interstate Printer & Publishers, Inc., Danville, Illinois. (Chapter 30, pp. 451-473, "Tomatoes")
 Webb, R. E., T. H. Barksdale, & A. K. Stoner, 1973, "Tomatoes" pp. 344-361 in: Nelson, R.R. (Ed) Breeding Plants for Disease Resistance. Pennsylvania State University Press, University Park
 Young, P. A. & J. W. MacArthur, 1947. Horticultural characters of tomatoes. Bull. Texas Agric. Exper. station No. 698.

12/30/81

8200059

VARIETY: VF 9209

EXHIBIT D: Additional Description of the Variety

The vine of VF 9209 is a compact determinate type similar to **UC82B** but with larger leaflets and **more** leaf curl. The mature green fruit has the genotype ww similar **UC82B** with no darker shoulder coloration at all.

Mature ripe fruit looks very much like **UC82B** but averages slightly larger in **almost** every trial. VF 9209 fruit is usually less puffy than **UC82B** fruit with less prominent veination on processed whole peeled fruit. The soluble solids and **pH** are consistently higher for VF 9209 than **UC82B**. The gross viscosity is **similar** for both varieties and averages **in** the medium range.

VF 9209 and **UC82B** have the same **disease** resistances including Verticillium wilt, race 1, Fusarium wilt, race 1, and Alternaria StemCanker.

ASSIGNMENT OF INTELLECTUAL PROPERTY

WHEREAS, HARRIS MORAN SEED COMPANY, a corporation duly **organized** and existing under the **laws** of the State of Maryland., **having** its principal **place** of business at 45 11 **Willow Road**, Suite 3, **Pleasanton**, California 94588 ("Assignor"), has, pursuant to that certain **Bill** of Sale and **Assignment dated** as of June **30, 1997**, transferred to FERRY-MORSE SEED COMPANY (**CALIFORNIA**), a corporation duly **organized** and existing under the laws of the State of **California**, having its principal place of business at 555 Codoni Avenue, P.O. Box **4938**, **Modesto**, California 953524938 ("Assignee"), **all** of the intellectual proper& Assignor had **adopted**, used and **was** using as of the effective date of this **Assignment**, including without limitation, the intellectual property represented by the United States Plant Variety Protection **Certificates** of Assignor **identified** on Schedule A hereto (collectively, the "Property"); and

WHEREAS, **on** the date hereof, Assignee has changed its name to "Harris Moran Seed Company";

NOW, THEREFORE, effective by this instrument as of the close of business on June **30, 1997**, and for good and **valuable** consideration, receipt of **which** is hereby **acknowledged**, Assignor hereby assigns to Assignee. any and **all** right, title and interest worldwide in and to the Property and any and all **recordations** thereof, including, but not limited to, the use of the Property **in** any manner, all benefit of any and all prior use of the Property, and any and all-rights to initiate **claims or proceedings** for **past, present or future infringements** of **Assignor's** rights, title and interest in and to the **Property**.

Dated: as of June **30, 1997**

HARRIS MORAN SEED COMPANY

By:


Philip Ashcraft, President

CERTIFICATE OF AMENDMENT
OF THE
ARTICLES OF INCORPORATION

OF

FERRY-MORSE **SEED** COMPANY (CALIFORNIA)
(a California corporation)

1430010

ENDORSED
FILED

In the office of the Secretary of State
of the State of California

JUN 30 1997

Bill Jones
BILL JONES, Secretary of State

To the **Secretary** of State
State of California

Pursuant to the **provisions** of the **General** Corporation Law of the State of California, the **undersigned** officers of FERRY-MORSE SEED COMPANY (CALIFORNIA), a California **corporation** (the "Corporation"), do hereby certify as follows:

1. The name of the Corporation is **Ferry-Morse** Seed Company (California).

2. Article One of the Corporation's **Articles** of Incorporation, which relates to the **name of** the Corporation, is hereby amended in its entirety to read as follows:

One. The name of **this** Corporation is:
HARRIS MORAN SEED COMPANY.

3. The amendment herein provided for has been approved by the Corporation's Board of Directors.

4. ~~The amendment herein provided for was approved by the~~ written consent of the **Corporation's sole** shareholder in accordance **with** the provisions of Section 902 of the California **General Corporation Law**. The total number of outstanding shares of the corporation **is 5,000.**

IN WITNESS WHEREOF, each of the undersigned does hereby declare under the **penalty of perjury that he or she signed the foregoing Certificate of Amendment** as of **June 30,**

1997, in the Town of Modesto, State of California, **in the** official capacity set forth beneath **his or**
her signature and that the statements set forth in **this** certificate are **true** of his or her own
knowledge.



Yves Queste, President



Helen Andritsakis, Secretary

State of California

SECRETARY OF STATE



I, *BILL JONES*, Secretary of State of the State of California, hereby certify:

That the attached transcript has been compared with the record on file in this office, of which it purports to be a copy, and that it is full, true and correct.

IN WITNESS WHEREOF, I execute this certificate and affix the Great Seal of the State of California this

JUN 3 0 1937



Secretary of State