## HortScience. 12(6):589–591. 1977. **'Auburn 76' Tomato**<sup>1</sup>

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'Auburn 76' FMN, herein referred to as 'AU 76', is an indeterminate true breeding fresh market tomato cultivar named in honor of America's Bicentennial and released by the Alabama Agricultural Experiment Station (Fig. 1). 'AU 76' possesses 3 dominant genes (I,  $Tm2^a$  and Mi) conditioning, respectively, near-immunity to both *Fusarium* race 1 (F) and tobacco mosaic virus (M), and resistance to root knot nematodes (N).

### Origin

The pedigree of 'AU 76' is shown in Fig. 2. The Auburn breeding lines that appear in the pedigree of 'AU 76', all true breeding resistant to the root knot nematode, themselves possess complex pedigrees (Fig. 2).

### Description

Plants of 'AU 76', like 'Homestead 24', are medium early in maturity (Table 3). They are vigorous, indeterminate  $(sp^+)$ , yet compact because of short internodes. Fruits are medium sized. Average marketable fruit wt in 3 field trials ranged from 122 - 159 g. Immature fruit color is pale green with a slightly darker green shoulder. Smaller and younger fruits or late season fruits tend to be pointed. Immature fruit exhibited superior shoulder ripening characteristics, with few rots when stored at  $24^{\circ}$ C or at ambient outdoor summer temp for 3 - 4 weeks in the shade. Fruits of 'AU 76' are crack resistant and have shown field resistance to buckeye rot in on-ground culture during hot, rainy summers. Fruit quality. Fruit of 'AU 76' is medium firm at maturity. Ripe

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external fruit color is orange red. Internal fruit color varies from pale red flesh with some green gel to a uniform dark red flesh and gel color. The fruit wall is medium thick, the flesh is juicy, and the core is small. Fruit flavor is good because both fruit acidity and soluble solids (mostly) sugars) are high. The pH of fresh field grown fruit ranged from 4.0 to 4.3 in 1975 and from 4.3 to 4.4 in 1976. Corresponding soluble solids ranged from 4.4% to 5.2% and 5.1% to 5.2%, respectively. The sugar/acid ratio for 'AU 76' ranged from 10 to 17 (avg (12.6) and for 'Homestead 24' from 7.1 to 11.4 (avg 8.4). Comparative quality measures in 1976 are presented in Table 1.

Yield. In 3 unstaked field trials in 1975 and 1976 'AU 76' yielded equal to or better than the 4 standard



Fig. 1. A.) Field-grown plant of 'Auburn 76'. The scale is inches (left) and cm (right).B.) Greenhouse-grown fruit of 'Auburn 76'.



Fig. 2. F<sub>3</sub> AU 63-20 (Mi/Mi) has a complex pedigree, similar to that of 'Atkinson', involving 'Pearson S', F<sub>4</sub>(Ala No. 1 × 15B-1), Hawaii AES 4521 (Mi/Mi), 'Kokomo', 'Rutgers', STEP 174 (USDA), and STEP 281 (S.C. AES). AU 67-43A (Mi/Mi), a processing type breeding line was F<sub>6</sub> (Campbell Soup Co., L. W. Schaible heatset lines No. 783 or 788 × 'Roma' × Au 20 × 'Chico'). Heat tolerance in the Schaible lines derives from the Philippine tomato cultivar 'Nagcarlang'.

AU 70-81 (Mi/Mi) is F<sub>5</sub> (PI 273444 (compact fruited determinate 'Birdsnest' type from T. O. Graham, University of Guelph, Canada) x 67-43A). Ohio mosaic resistant (OMR) lines are from L. J. Alexander formerly at the Wooster, Ohio Agricultural Research and Development Center.

\*Numbers with asterisks are superior selections.

Table 1. Vine-ripe tomato fruit quality criteria, staked trial, Auburn, 1976.

	Means of 4 samples <sup>2</sup>							
Entry	pН	Soluble solids (%)	Total acidity (%)	Vitamin C (mg/100 ml)				
L. pimpinellifolium								
PI 127805 P7	4.17 a <sup>y</sup>	6.50 a	0.68 a	60.2 a				
Saturn	4.26 ab	5.45 b	0.61 b	34.7 bc				
Small Fry	4.30 bc	4.20 ef	0.51 cd	36.1 b				
Golden Jubilee	4.30 bc	5.07 bc	0.56 bc	29.2 cde				
Floradel	4.32 bcd	5.10 bc	0.47 defg	26.4 ef				
Atkinson	4.33 bcde	5.10 bc	0.48 def	33.2 bcd				
Auburn 76 FMN	4.37 bcdef	5.17 bc	0.42 fgh	27.3 ef				
Bonnie NR	4.37 cdef	4.20 ef	0.47 def	20.9 g				
Homestead 24	4.40 cdefg	4.25 ef	0.52 cd	28.8 de				
Walter	4.43 efg	4.62 de	0.45 defgh	23.1 fg				
Better Boy VFN	4.44 fg	5.12 bc	0.44 efgh	30.9 bcde				
Traveler	4.45 fg	4.77 cd	0.49 de	34.1 bcd				
Chico Grande	4.47 fg	3.97 f	0.43 efgh	19.9 g				
Tropic	4.49 g	4.62 de	0.42 fgh	26.6 ef				

<sup>x</sup> Fruits were harvested at optimum maturity. A sample for analysis consisted of 5 quarter sections, one from each of 5 fruits. Four samples were taken of each variety over a one month period. Soluble solids were measured by refractometer. Total acidity is expressed as % citric acid.

<sup>y</sup>Mean separation by Duncan's multiple range test, 5% level.

cultivars 'Homestead 24', 'Tropic', 'Floradel' and 'Walter' (Table 2). In 2 carefully graded trials in 1975 and 1976 'AU 76' averaged 62.6% marketable fruit vs. 55.1% for 'Homestead 24' and 54.2% for 'Floradel', significantly higher at the 5% level (Table 2). In a staked trial at Fairhope, Alabama in 1975, 'AU 76' was outyielded only by the F<sub>1</sub> hybrid 'Monte Carlo' (Table 3).

Uses. 'AU 76' should prove useful to home gardeners and to commercial growers of green wrap and vine ripe tomatoes in the Southeast. It's TMV resistance should invite winter greenhouse trial also. 'AU 76' should prove valuable as a breeding parent for multiple disease resistance.

#### Availability

Seed of 'AU 76' should be available for the 1978 season from PetoSeed

Fable 2. Comparative performance of	'Auburn 76' an	1 4 standard tomato cultivars at	Auburn and Clanton,	Alabama 1975-1976.
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	Marketable fruit wt (MT/ha)		Avg marketable fruit wt (g)		Marketable yield (%)			Rotted fruit wt (%)			Catface fruit wt (%)				
Cultivar	A'75 <sup>Z</sup>	C'75	C'76	A'75	C'75	C'76	A'75	C'75	C'76	A'75	C'75	C'76	A'75	C'75	C'76
Auburn 76	11.4a <sup>y</sup>	11.4ab	16.8a	122a	141b	159b	60.4a	54.6a	64.8a	11.3a	6.6a	7.3a	9.2a	8.1a	22.2a
Homestead 24	7.6b	15.2a	14.6ab	127a	154ab	177a	48.5b	59.9a	61.7b	19.2a	9.5a	10.0a	12.2a	9.6a	20.9a
Tropic	6.3b	12.6ab		132a	169a		45.1b	52.5a		18.2a	11.0a		26.3c	18.8b	
Floradel	6.1b	11.2b	16.6a	113a	145b	177a	48.6b	54.1a	59.9bc	17.7a	9.6a	10.8a	16.1b	13.4b	24.1a
Walter			11.2b			172ab			54.3c			9.7a			29.6b

 $^{2}$ A'75, C'75, C'76 refer to yield trials at Auburn (one harvest) and Clanton (3 harvests) in 1975, and to a single harvest trial at Clanton in 1976. A hailstorm on May 26, 1975, severely damaged the Auburn trial but the plants made a remarkable recovery.

yMean separation in columns by Duncan's multiple range test, 5% level.

Table 3. Marketable yields of 16 fresh market tomato cultivars, Fairhope, Alabama 1975.

Cultivar	Seed source	Marketable yield (kg/ha) <sup>Z</sup>	Ave. fruit wt (g)	Culls (%) <sup>y</sup>	Cracked fruit (%)	Catface fruit (%)	pH	Titratable acidity (%)	Ascorbic acid (mg/100ml)	Harvest season <sup>x</sup>
Monte Carlo VFN	PetoSeed	52,541 a <sup>W</sup>	191	19	30	31	4.27	.304	27.15	E
Auburn 76 FMN	AU	49,218 ab	150	12	9	4	4.25	.304	21.88	Е
Floradel	Asgrow	47,619 abc	181	13	34	21	4.22	.295	19.93	М
Terrific VFN	PetoSeed	46,965 abc	177	26	24	40	4.25	.322	26.67	E
Tropic	Asgrow	44,764 bc	200	15	50	16	4.31	.282	18.90	L
Better Boy VFN	PetoSeed	42,248 bcd	209	21	24	46	4.18	.406	23.33	E
Bonnie N	Bonnie Farms	39,951 cd	159	16	20	12	4.18	.285	25.85	E
Creole	LSU	39,082 cde	168	18	21	14	4.33	.260	25.00	М
Walter	Asgrow	32,284 def	154	18	31	9	4.27	.295	24.68	Е
Homestead Elite	Ferry Morse	31,290 ef	163	14	13	3	4.21	.360	26.13	E
Homestead 500	PetoSeed	29,347 f	150	15	8	2	4.24	.323	28.35	М
Florida MH-1	Florida AES	28,649 f	159	14	16	9	4.28	.286	24.15	М
Traveler	PetoSeed	26,395 f	141	11	5	. 2	4.31	.286	22.30	L
Homestead 24	Niagara	25,223 f	145	14	15	2	4.25	.385	26.83	Ē
Homestead 61	PetoSeed	24,386 f	150	23	10	2	4.25	.335	25.53	М
Sunburst	Clemson U.	23,318 f	132	22	2	2	4.29	.307	27.45	L

<sup>2</sup>From 14 harvests of staked plants spaced  $38 \times 152$  cm with 10 plant plots and 4 replications.

<sup>y</sup>Culls are % of total yield. The 3 cull classes; cracked fruit (%), catface fruit (%) plus others (%) would add up to 100%. 'Others' were mostly too small fruits and would include insect damaged, rotted, misshapen and mechanically damaged fruit.

xComparative earliness: E = early; M = midseason; L = late.

<sup>w</sup>Mean separation by Duncan's multiple range test, 5% level.

Company, P. O. Box 4206, Saticoy, California 93002 and Montgomery Seed and Supply Company, 243 Dexter Avenue, Montgomery, Alabama 36102.

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# HortScience. 12(6):591–592. 1977. **'Whitehouse' Ornamental Pear**<sup>1</sup>

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Since its release by the USDA in 1960 Pyrus calleryana Dcne. cv. Bradford has experienced outstanding popularity for landscape and street planting purposes. Grown widely throughout the Mid-Atlantic States and westward to the Mississippi, it is listed among the "Ten Most Recommended Trees" of several states. 'Bradford' has a broad globular crown up to 12 m across and a height of over 15 m at maturity (1, 2).

During the 1960's it became evident that for small suburban yards and narrow streets, a less robust, more upright form of *P. calleryana* would be desirable. To fill this need *P. calleryana* 'Whitehouse' was selected for its columnar form. Other assets include thornlessness, abundant spring flowering, attractive summer foliage, bright red autumn coloration, and small unoffensive fruits; characteristics it shares with 'Bradford'.

#### Origin

The 'Whitehouse' pear was selected in 1969 from a population of 2,500 seedlings growing at or near the vicinity of the U.S. Plant Introduction Station, Glenn Dale, Maryland. The original tree developed as an open pollinated seedling presumably resulting from 'Bradford' crossed with one of many P. calleryana seedlings growing at the Glenn Dale Station. It was one of 12 preliminary selections that grew on the property of Mr. Radford Rigoli, Bell Station Road, Glenn Dale, Maryland. The tree, then 4.6 m tall and 1.2 m at its greatest crown width, was photographed, vegetatively propagated, and grown in orchard and landscape plantings at the Glenn Dale Station, Unfortunately, the year following its selection, the original tree was destroyed during



Fig. 1. 'Whitehouse' ornamental pear in summer foliage.

clearing of the field for cultivation. Vegetative propagations exhibit the same characteristics as those observed in the original tree. This cultivar is named in honor of Dr. William E. Whitehouse, Senior Horticulturist (retired), U.S. Department of Agriculture,

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