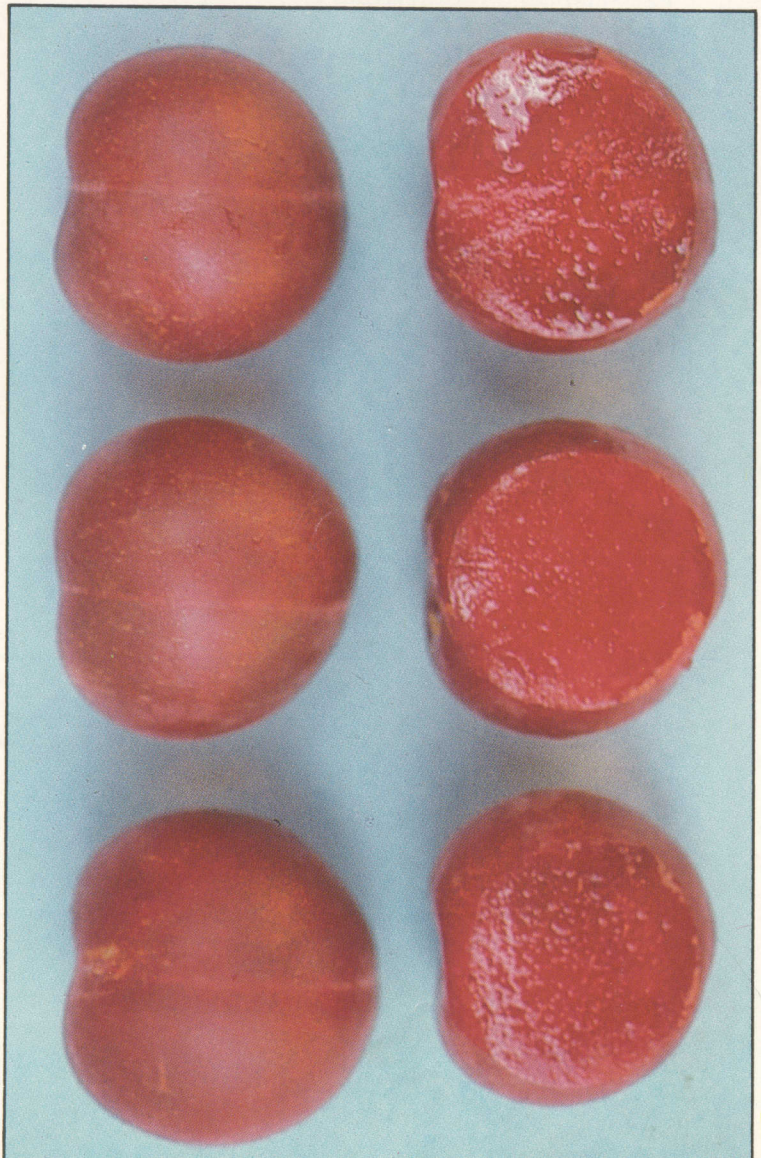
CIRCULAR 271
MAY 1984

AU-ROADSIDE

An Excellent Quality Plum for Home Use and Local Markets



ALABAMA AGRICULTURAL EXPERIMENT STATION
AUBURN UNIVERSITY AUBURN UNIVERSITY, ALABAMA
GALE A. BUCHANAN, DIRECTOR

CONTENTS

FIRST PRINTING 3.5M, MAY 1984

AU-ROADSIDE

AN EXCELLENT QUALITY PLUM FOR HOME USE AND LOCAL MARKETS

J.D. NORTON, J.M. SNELL, D.A. SMITH, and K.S. RYMAL[1]

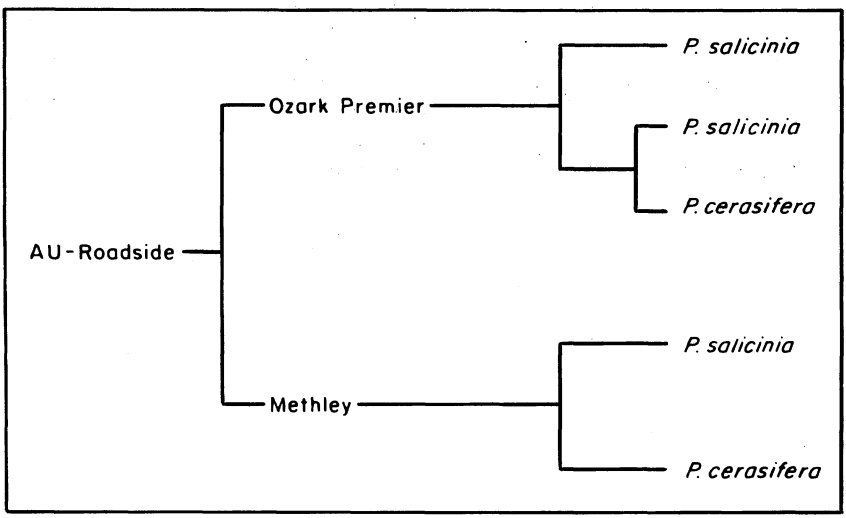
INTRODUCTION

AU-ROADSIDE is a new plum variety developed by the Alabama Agricultural Experiment Station, Auburn University, for growing in areas where sufficient chilling of 700 hours of temperature below 45°F occurs. AU-Roadside has proven its ability to produce high yields of excellent quality fruit where there are certain fruit and tree disease problems. The new variety is superior to the Ozark Premier variety in yield, fruit quality, tree vigor, disease resistance, and tree longevity. Therefore, AU-Roadside is being released as a direct replacement for the Ozark Premier variety.

AU-Roadside was selected from a cross between Ozark Premier and Methley varieties. The cross was made in 1965 and the seedling was tested as Ozark Premier F-2, see figure. It has resistance or tolerance to black knot, bacterial canker, bacterial fruit spot, and plum leaf scald, prevalent diseases of plum, tables 1 and 2. Such resistance is particularly important in the Southeast where prevalence of these diseases and susceptibility of commercial varieties has discouraged plum production. Its resistance to bacterial and fungal diseases came from the Ozark Premier parent, while excellent fruit quality was inherited from both parents.

Trees of AU-Roadside are vigorous, spreading with dark green leaves.

[1]Professor, Research Associate, Associate Professor, and Associate Professor, respectively, Department of Horticulture.



Pedigree of AU-Roadside plum.

TABLE 1. DISEASE RESISTANCE OF PLUM VARIETIES IN EXPERIMENTAL PLANTINGS AT AUBURN, CAMP HILL, CLANTON, CULLMAN, FAIRHOPE, AND HEADLAND

Variety	Disease index[1]						
	Bacterial fruit spot	Bacterial leaf spot	Bacterial canker	Black knot	Brown rot	Plum leaf scald	Av.
AU-Producer . . .	0	0	0	1	2	1	0.7
AU-Roadside . . .	0	0	0	0	2	1	.5
Bruce	0	0	0	0	4	4	1.3
Crimson	0	0	0	0	1	3	.7
Homeside	0	0	1	1	3	1	1.0
Methley	3	5	5	5	3	4	4.2
Morris	1	2	2	5	2	2	2.4
Ozark Premier . .	0	1	1	1	3	4	1.2
Santa Rosa	5	5	5	0	3	5	3.8

[1]Disease index: 0 = 0, 1 = 1-20, 2 = 21-40, 3 = 41-60, 4 = 61-80, 5 = 81-100 percent of fruit, leaves, and trees infected with bacterial canker, bacterial fruit spot, bacterial leaf spot, and black knot.

TABLE 2. DISEASE INDEX[1] RATINGS FOR BLACK KNOT, BACTERIAL CANKER, BACTERIAL LEAF SPOT, AND BACTERIAL FRUIT SPOT OF PLUM VARIETIES AFTER 5 YEARS IN ALABAMA GROWER ORCHARDS

Variety	Number of trees		Disease index[1]				
	Planted	Living	Black knot	Bacterial canker	Bacterial leaf spot	Bacterial fruit spot	Av.
AU-Roadside . . .	50	47	0	0	0	0	0
Crimson	1,087	1,061	0	0	.3	0	.08
Homeside	278	251	.7	.4	.4	0	.36
Methley	275	239	4.5	5.0	5.0	5.0	4.87
Ozark Premier . .	375	180	.7	1.3	2.0	0	.55
Santa Rosa	150	124	0	5.0	5.0	5.0	3.75

[1]Disease index: 0 = 0, 1 = 1-20, 2 = 21-40, 3 = 41-60, 4 = 61-80, and 5 = 81-100 percent of tree, fruit, and leaves infected with black knot, bacterial canker, bacterial fruit spot, and bacterial leaf spot.

DISEASE RESISTANCE

AU-Roadside is highly resistant to bacterial canker *(Pseudomonas syringae*, Van Hall), bacterial fruit spot [*Xanthomonas pruni* (E.F. Smith), Dows], bacterial leaf spot *(X. pruni)* and black knot *(Dibotryon morbosum),* tables 1 and 2. A tolerance to plum leaf scald is also present in the trees, table 1.

FRUIT QUALITY

Fruits of AU-Roadside have dark red (currant red, HCC 46A)[2] skin and flesh. Fruit quality is excellent for fresh market which makes the variety adaptable for home, roadside, and local markets. Fruits were rated acceptable in canned fruit tests, table 3. Fruit have adequate firmness for handling, packing, and shipping to commercial markets, table 4. Maturity date is about 1 week before Ozark Premier, table 5. The plant is self fruitful, flowers profusely, and sets a heavy crop.

TABLE 3. MEAN QUALITY EVALUATIONS[1] OF 12 CANNED PLUM VARIETIES

Variety	Color	Texture	Flavor	Overall quality[2]
AU-Producer	8	8	8	8.0
AU-Roadside	8	8	8	8.0
Crimson	8	8	8	8.0
Giant Cherry	5	6	7	6.0
Methley	8	8	8	8.0
Morris	8	8	8	8.0
Ozark Premier	7	7	6	6.7
Red June	6	8	8	7.4
Sapa	10	8	8	8.6
Starking Delicious	8	7	5	6.7

[1]Mean scores of an expert panel (3-4 panelists) were obtained on the canned plums after at least 6 weeks warm-storage. Numerical scores as follows: 9 or 10 = highly acceptable, 7 or 8 = acceptable, 5 or 6 = barely acceptable, below 5 = unacceptable.

[2]Overall ratings are the means of all the panelists' three quality ratings.

[2]Horticulture Color Chart, Royal Horticulture Society, London.

TABLE 4. FRUIT CHARACTERISTICS OF PLUM VARIETIES

Variety	Fruit set	Flesh color	Skin color	Size	Shape	Flavor	Firmness	Stone freeness	Texture	Soluble solids
				In.						*Pct.*
AU-Producer	5[1]	dark red	dark red to purple	1¾-2	5[1]	5[1]	5[1]	cling	5[1]	16.5
AU-Roadside	5	dark red	dark red	2-2¼	5	5	4	semi-cling	5	17.2
Bruce	5	orange to red	orange to red	1¾-2	5	3	3	cling	3	9.4
Crimson	5	crimson red	crimson red	1½-1¾	5	5	5	cling	5	16.3
Homeside	5	cream	orange to light red	2¼-2½	5	5	4	cling	5	18.8
Methley	5	dark red	dark red to purple	1-1¼	5	5	3	cling	5	18.5
Morris	5	light red	light red		4	3	5	cling	5	13.4
Ozark Premier	5	cream	red to purple	2-2¼	5	5	4	semi-cling	5	15.7
Santa Rosa	4	red	dark red to purple	1¼-1½	5	5	5	cling	5	16.7

[1]Rating index: 5 = excellent, 4 = good, 3 = fair, 2 = poor, and 1 = very poor.

TABLE 5. BLOOM AND HARVEST DATES AND YIELD OF PLUM VARIETIES

Variety	Auburn			Camp Hill			Clanton			Headland		
	Bloom date	Harvest date	Yield[1]	Bloom date	Harvest date	Yield	Bloom date	Harvest date	Yield	Bloom date	Harvest date	Yield
AU-Producer	3-20	6-27	5	3-18	7-2	5	3-17	7-1	5	3-21	6-24	5
AU-Roadside	3-22	7-4	5	3-20	7-13	5	3-20	7-10	5	3-22	6-29	5
Bruce[2]	3-20	6-29	2	3-17	7-5	3	3-17	7-3	3	3-22	6-26	3
Crimson	3-22	7-14	5	3-20	7-20	5	3-19	7-18	5	3-22	5-7	5
Homeside	3-20	7-5	5	3-18	7-12	4	3-10	7-10	5	3-20	7-1	5
Methley[3]	3-22	6-10	3	3-20	6-16	3	3-20	6-14	3	3-24	6-7	5
Morris	3-22	6-17	5	3-20	6-23	5	3-20	6-21	5	3-22	6-14	5
Ozark Premier	3-20	7-10	4	3-18	7-18	4	3-18	7-15	4	3-23	7-5	5
Santa Rosa[4]	3-24	7-5	3	3-21	7-9	3	3-22	7-8	3	3-26	7-1	5

[1]Yield index: 0 = 0, 1 = very low, 2 = low, 3 = fair, 4 = good, and 5 = excellent.
[2]Trees short lived due to ring spot virus.
[3]Trees short lived due to black knot and bacterial canker.
[4]Trees short lived due to bacterial canker.

YIELDS

The new variety has been in trials as Ozark Premier F-2 at several locations of the Alabama Agricultural Experiment Station system and in grower trials. It compares favorably with other varieties in yield. Production has been highest in central and southeast Alabama, table 6. Average yields of marketable fruit per tree were 122.2 pounds and 117.4 pounds, respectively, from 3- and 4-year-old trees.

TABLE 6. YIELD OF FRUIT OF AU-ROADSIDE AT AUBURN, CAMP HILL, HEADLAND, AND THORSBY, 1976 TO 1982[1]

Year	Fruit yield per tree			
	Auburn	Camp Hill	Headland	Thorsby
	Lb.	*Lb.*	*Lb.*	*Lb.*
3	46.5	8.7	43.3	23.3
4	106.7	8.7	23.4	24.0
5	165.8	26.0	158.3	26.9
6	148.7	87.6	148.5	84.6
7	114.5	0	106.4	67.8

[1]Yield = pounds of fruit per tree. One tree per plot and six replications.

STORAGE

Fruits of AU-Roadside store as well as Homeside and Methley, and better than Bruce and Ozark Premier, table 7.

TABLE 7. PERCENT MARKETABLE PLUM FRUIT AFTER STORAGE AT 32°F

Variety	Weeks of storage				
	3	6	9	12	14
	Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*
AU-Producer	100	90	65	30	15
AU-Roadside	95	70	20	0	0
Bruce	20	5	0	0	0
Crimson	100	90	65	30	15
Homeside	95	65	15	0	0
Methley	95	70	20	0	0
Morris	100	90	65	30	15
Ozark Premier	90	65	15	0	0
Santa Rosa	100	80	45	20	5

OUTSTANDING CHARACTERISTICS

Two characteristics, tree vigor and tolerance to plum leaf scald, delineate the primary improvements of AU-Roadside over Ozark Premier. Trees of AU-Roadside are vigorous and show only traces of plum leaf scald, whereas trees of Ozark Premier grow much slower and are highly susceptible to plum leaf scald. Tree vigor is a primary selective criterion in the Southeast, and the relationship of plum leaf scald to phony peach makes resistance important.

Three other characteristics, ripening date, growing season, and skin color at maturity, may be taken collectively as another important advantage of AU-Roadside. AU-Roadside ripens 9 days earlier, has a shorter growing season by 7 days, and is more fully colored at any comparable stage of maturity than Ozark Premier, table 5.

Another improvement of AU-Roadside over Ozark Premier is the increased tree longevity of AU-Roadside. In test orchards at five Alabama locations and at Byron, Georgia, trees of AU-Roadside were in extremely healthy condition.

AVAILABILITY OF TREES

Trees of AU-Roadside should be available from wholesale and retail nurseries for planting in the winter of 1984-85. A limited supply of budwood may be obtained from J.D. Norton, Department of Horticulture, Auburn University, Alabama 36849.

ACKNOWLEDGMENTS

The author gratefully acknowledges the essential assistance of H.M. Bryce, Main Station, and C.C. Carlton and K.C. Short, Chilton Area Horticulture Substation, Clanton, in evaluation and propagation of the varieties.

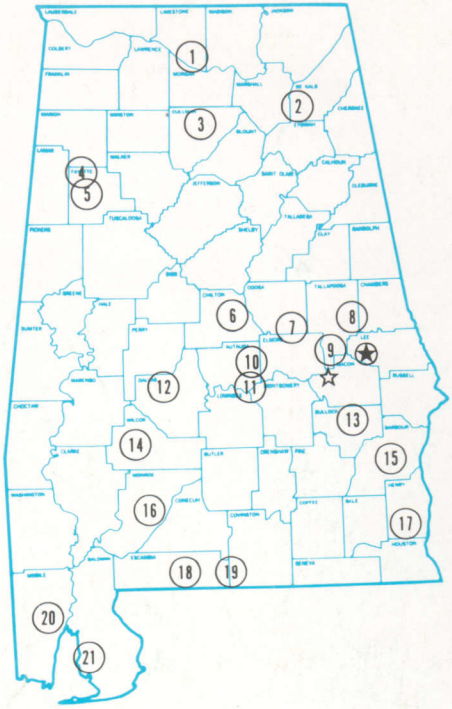
Valuable assistance was rendered by M.H. Hollingsworth, North Alabama Horticulture Substation, Cullman; E.L. Mayton (retired), W.A. Griffey, and H.E. Burgess, Piedmont Substation, Camp Hill; J.G. Starling and H.W. Ivey, Wiregrass Substation, Headland; and E.L. Carden and F.B. Selman, Gulf Coast Substation, Fairhope.

The assistance of J.M. Thompson, Geneticist, USDA Tree Fruit and Nut Laboratory, Byron, Georgia, in evaluating the seedling is deeply appreciated.

Assistance of growers in conducting commercial grower trials with the material is deeply appreciated.

Alabama's Agricultural Experiment Station System
AUBURN UNIVERSITY

With an agricultural research unit in every major soil area, Auburn University serves the needs of field crop, livestock, forestry, and horticultural producers in each region in Alabama. Every citizen of the State has a stake in this research program, since any advantage from new and more economical ways of producing and handling farm products directly benefits the consuming public.



Research Unit Identification

★ Main Agricultural Experiment Station, Auburn.
☆ E. V. Smith Research Center, Shorter.

1. Tennessee Valley Substation, Belle Mina.
2. Sand Mountain Substation, Crossville.
3. North Alabama Horticulture Substation, Cullman.
4. Upper Coastal Plain Substation, Winfield.
5. Forestry Unit, Fayette County.
6. Chilton Area Horticulture Substation, Clanton.
7. Forestry Unit, Coosa County.
8. Piedmont Substation, Camp Hill.
9. Plant Breeding Unit, Tallassee.
10. Forestry Unit, Autauga County.
11. Prattville Experiment Field, Prattville.
12. Black Belt Substation, Marion Junction.
13. The Turnipseed-Ikenberry Place, Union Springs.
14. Lower Coastal Plain Substation, Camden.
15. Forestry Unit, Barbour County.
16. Monroeville Experiment Field, Monroeville.
17. Wiregrass Substation, Headland.
18. Brewton Experiment Field, Brewton.
19. Solon Dixon Forestry Education Center, Covington and Escambia counties.
20. Ornamental Horticulture Substation, Spring Hill.
21. Gulf Coast Substation, Fairhope.