A BURLEY TOBACCO VARIETY MANAGEMENT STUDY

ON SEVEN KENTUCKY FARMS IN 1967

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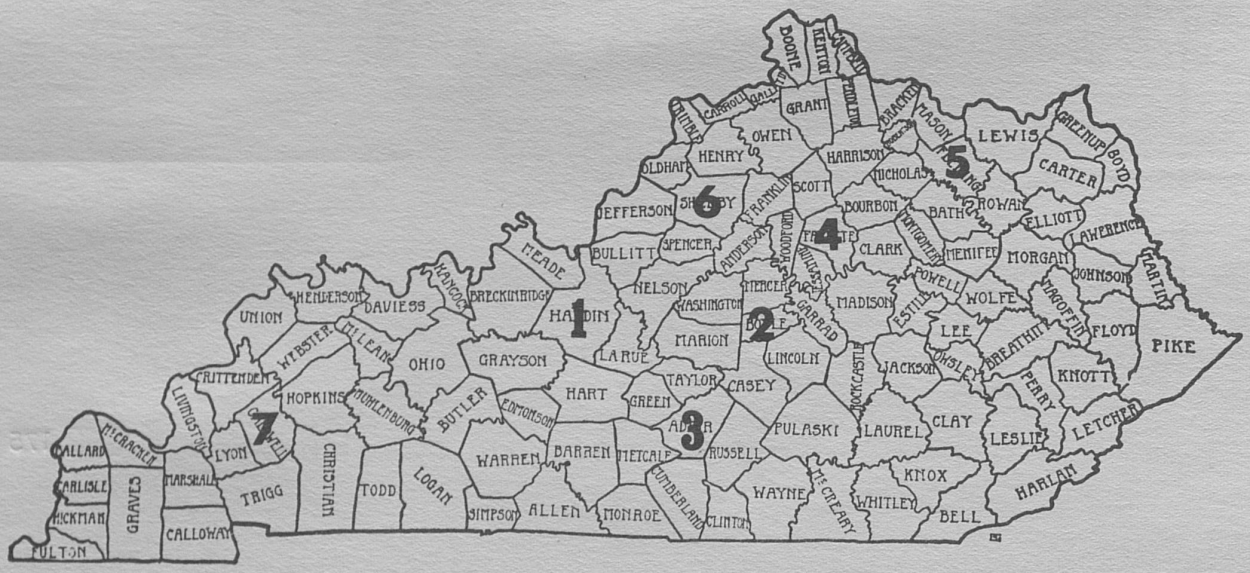

FARM LOCATIONS WHERE THE BURLEY TOBACCO VARIETY-MANAGEMENT STUDY WAS CONDUCTED IN 1967.

Location	County	Cooperator
1	Hardin	Ray Mackey
2	Boyle	William Balden
3	Adair	Charles Cole
4	Fayette	Robert Woods
5	Fleming	Roy Gray
6	Shelby	Louis Payne
7	Caldwell	Homer Mitchell

Acknowledgment:

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The small price differential in respect to quality of burley tobacco has given growers little incentive to produce leaf of the best quality. Instead, they have emphasized yield, apparently believing that the value of their increased poundage will more than compensate for any possible reduction in value per pound. A number of cultural practices generally accepted as being favorable for the production of good quality tobacco have, therefore, been changed. Nitrogen fertilization and plant populations have been increased, topping and harvesting times have been advanced, and sucker growth has been eliminated by chemical treatments.

OBJECTIVES AND METHODS

The objectives of this study were:

(1) To investigate the desirability of two management systems emphasizing a) yield and b) quality, and a third system c) aimed at achieving an acceptable level of both yield and quality. (These are hereafter referred to as the "high yield," "quality," and "yield and quality" systems, respectively.)

(2) To determine the effects of these management systems on the chemical and physical characteristics of the cured leaf and its usefulness to the tobacco industry.

Two varieties, Burley 21 and Ky 10, were grown under the three management systems, outlined in Table 1 (page 5), in 1/4 acre non-replicated plots at seven locations in Kentucky. Phosphorus and potassium were applied in all systems at rates based on soil tests. Applications were sufficiently large that these elements would not be limiting factors in plant growth.

Leaf produced under each management system was stripped into four or five farm grades which were displayed, under code, at a Lexington market in January 1968. Before sale of the tobacco, personnel from each of the six cooperating tobacco companies evaluated it, using a numerical rating of 0-4 with 0 = very poor and 4 = very good. Samples for determining filling values and for cigarette manufacture and chemical analysis were taken by randomly selecting five hands from each grade of each treatment. The five hands were kept in plastic bags until stemmed, after which the samples for chemical analysis were dried and ground to pass a 1 millimeter screen, then split into six 50-gram samples for mailing to the cooperating laboratories. The tobacco was then graded and sold in the normal way. The per acre values were computed using the actual selling price of each lot of tobacco. The per acre values and yields, values per hundred pounds, chemical data, and other measurements are shown in the tables, beginning on page 6.

RESULTS

The "yield and quality" system resulted in the production of 21 pounds of leaf per acre less than from the "high-yield" system, and the yield from the "quality" system was much lower (Table 2). For the two-year average, the "yield and quality" system resulted in the production of 50 pounds of leaf per acre more than from the "high yield" system, and 512 pounds of leaf per acre more than from the "quality" system (Table 3). In 1967 Ky 10 out-yielded Bur 21 by 283, 373, and 298 pounds per acre for the "quality," "yield and quality" and "high yield" systems, respectively. For the two-year average, Ky 10 out-yielded Bur 21 by 295, 303, and 232 pounds per acre for the three systems, respectively. Values, expressed as dollars per 100 pounds, were slightly, but consistently, higher for variety Bur 21 and differed very slightly between management systems (Tables 4 and 5). Acre values were in the same order as were yields and were always higher for Ky 10 (Tables 6-7).

Average leaf appraisal values show that the "quality" system produced tobacco considered to be of better quality than did either the "high yield" or the "yield and quality" system, and Bur 21 was rated higher than Ky 10 in each of the three management systems (Table 8). Wide variations in quality of leaf were noted for locations and among companies (Table 9).

With the exception of total alkaloids, nitrogenous constituents were highest in cured leaf from the "high-yield" system and lowest in the "quality" system. Total alkaloids differed in that the highest concentration of alkaloids occurred in the "yield and quality" system (Tables 10-15). There appeared to be a tendency for nitrogenous constituents to be higher in Ky 10 than in Bur 21.

Water-soluble acids were lower in leaf from the "quality" system and differed little between the others (Table 16). Potassium concentration was lowest in the leaf from the "high yield" system, and differed little between the others; potassium concentration was higher in Bur 21 than in Ky 10 (Table 17). Calcium concentration was lowest in the leaf from the "yield and quality" system and highest in leaf from the "quality" system, and there was no real varietal effect apparent (Table 18). Magnesium concentration was lowest in the leaf from the "quality" system and highest in the "high yield" system; magnesium concentration was higher in Ky 10 than in Bur 21 (Table 19). Phosphorus concentration was highest in the leaf from the "quality" system and lowest in the "high yield" system, with no differences between varieties (Table 20). Manganese was present in higher amounts from the "high yield" system (Table 21) which undoubtedly was related to lower soil pH resulting from the high nitrogen fertilization.

Filling values, expressed as the volume occupied by a standard weight of shredded tobacco at a specified moisture content and under a standard pressure, were highest for leaf from the "quality" system and nearly the same for the other treatments. There was a tendency for Bur 21 to have the highest filling value (Table 22). Moisture equilibrium was not greatly affected by any variable in the study (Table 23).

Table 1.--Farm Practices Employed in the 1967 Kentucky Burley Variety-Management Study

Practice	Management Systems		
	"High Yield"	"Yield and Quality"	"Quality"
Lb N/A	320	160	80
Plant spacing	40" x 12"	40" x 16"	40" x 20"
Topped at	Early Flower	50% full flower	75% full Flower
Suckering method	MH-30 (1 gal/A)	MH-30 (1 gal/A)	Hand
Maturity at harvest	Very immature[1/]	Slightly immature[2/]	Ripe[3/]

1/ Harvested when only bottom leaves were yellow.

2/ Harvested when bottom and middle leaves were yellow.

3/ Harvested when whole plant was yellow.

Table 2.--Yields (pounds per acre)

Variety	COUNTY							
	Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	Average
				"High Yield"				
B21	2,744	2,944	2,288	3,352	2,672	2,488	3,336	2,832
Ky 10	2,068	3,088	2,496	3,832	3,320	3,368	3,736	3,130
Average	2,406	3,016	2,392	3,592	2,996	2,928	3,536	2,981
				"Yield and Quality"				
B21	2,160	2,792	2,264	2,632	3,368	2,768	3,432	2,774
Ky 10	2,936	3,232	2,296	3,648	3,304	3,504	3,112	3,147
Average	2,548	3,012	2,280	3,140	3,336	3,136	3,272	2,960
				"Quality"				
B21	1,776	3,472	1,696	2,088	2,832	2,184	2,448	2,357
Ky 10	1,976	3,440	2,216	2,400	3,192	2,560	2,696	2,640
Average	1,876	3,456	1,956	2,244	3,012	2,372	2,572	2,498
				Average				
B21	2,227	3,069	2,083	2,691	2,957	2,480	3,072	2,654
Ky 10	2,327	3,253	2,336	3,293	3,272	3,144	3,181	2,972
Average	2,277	3,161	2,209	2,992	3,115	2,812	3,127	2,813

Table 3.-Average Yields (pounds per acre) For 1966 and 1967

System	Variety	1966	1967	Average
"Yield"	B 21	2,832	2,832	2,832
	Ky 10	2,998	3,130	3,064
	Av	2,915	2,981	2,948
"Yield and Quality"	B 21	2,920	2,774	2,847
	Ky 10	3,152	3,147	3,150
	Av	3,036	2,960	2,998
"Quality"	B 21	2,320	2,357	2,338
	Ky 10	2,626	2,640	2,633
	Av	2,473	2,498	2,486
Average	B 21	2,691	2,654	2,672
	Ky 10	2,925	2,972	2,948
	Av	2,808	2,813	2,810

Table 4.-Values (dollars per hyndred pounds)

Variety	County							Weighted Average
	Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	
				"High Yield"				
Bur 21	72.27	73.25	72.13	72.48	71.29	73.82	72.31	72.49
Ky 10	69.87	71.40	71.05	70.72	69.89	73.57	69.72	70.89
Wt'd Av	71.24	72.28	71.57	71.55	70.49	73.70	70.93	71.65
				"Yield and Quality"				
Bur 21	72.00	72.66	72.98	72.82	71.90	73.65	70.98	72.35
Ky 10	71.99	71.32	72.38	71.31	71.03	73.25	70.88	71.72
Wt'd Av	71.99	71.95	72.68	71.94	71.46	73.41	70.94	72.03
				"Quality"				
Bur 21	72.91	70.81	72.14	72.72	70.98	73.10	72.13	71.94
Ky 10	72.03	71.46	71.71	70.78	70.55	72.56	72.01	71.56
Wt'd Av	72.44	71.12	71.88	71.66	70.75	72.80	72.08	71.74
				Weighted Average				
Bur 21	72.34	72.17	72.40	72.65	71.42	73.55	71.78	72.27
Ky 10	71.38	71.47	71.70	70.97	70.48	73.19	70.76	71.37
Wt'd Av	71.85	71.78	72.07	71.72	70.91	73.33	71.25	71.81

Table 5.-Values (dollars per hundred) For 1966 and 1967

System	Variety	1966	1967	Weighted Average
"Yield"	B 21	68.36	72.49	70.41
	Ky 10	67.24	70.89	69.12
	Wt'd Av	67.79	71.65	69.57
"Yield" and Quality"	B 21	67.88	72.35	70.04
	Ky 10	67.42	71.72	69.59
	Wt'd Av	67.65	72.03	69.81
"Quality"	B 21	68.92	71.94	70.44
	Ky 10	67.21	71.56	69.39
	Wt'd Av	68.01	71.74	69.87
Wt'd Av	B 21	68.34	72.27	70.28
	Ky 10	67.29	71.37	69.37
	Wt'd Av	67.81	71.81	69.82

Table 6.--Values (dollars per acre)

Variety	County							
	Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	Average
				"High Yield"				
Bur 21	1,983	2,156	1,650	2.430	1,905	1,837	2,412	2.053
Ky 10	1,445	2,205	1,773	2,710	2,320	2,478	2,605	2,219
Average	1,714	2,180	1,712	2,570	2,112	2,158	2,508	2,136
				"Yield and Quality"				
Bur 21	1,555	2,029	1,652	1,917	2,422	2,038	2,436	2,007
Ky 10	2,114	2,305	1,662	2,601	2,347	2,567	2,206	2,257
Average	1,834	2,167	1,657	2,259	2,384	2,302	2,321	2,132
				"Quality"				
Bur 21	1,295	2,459	1,223	1,518	2,010	1,596	1,766	1,695
Ky 10	1,423	2,458	1,589	1,699	2,252	1,858	1,941	1,889
Average	1,359	2,458	1,406	1,608	2,131	1,727	1,854	1,792
				Average				
Bur 21	1,611	2,215	1,508	1,955	2,112	1,824	2,205	1,918
Ky 10	1,661	2,323	1,675	2,337	2,306	2,301	2,251	2,121
Average	1,636	2,269	1,592	2,146	2,209	2,062	2,228	2,020

Table 7.-Values (dollars per acre) For 1966 and 1967

System	Variety	1966	1967	Average
"Yield"	B 21	1,936	2,053	1,994
	Ky 10	2,016	2,219	2,118
	Av	1,976	2,136	2,051
"Yield and Quality"	B 21	1,982	2,007	1,994
	Ky 10	2,127	2,257	2,192
	Av	2,054	2,132	2,093
"Quality"	B 21	1,599	1,695	1,647
	Ky 10	1,765	1,889	1,827
	Av	1,682	1,792	1,737
Average	B 21	1,839	1,918	1,878
	Ky 10	1,969	2,121	2,045
	Av	1,904	2,020	1,962

Table 8. Industry Evaluation*(treatments by locations)

	Systems						
	"High Yield"		"Yield and Quality"		"Quality"		
County	B 21	Ky 10	B 21	Ky 10	B 21	Ky 10	Av.
Hardin	2.06	1.22	2.12	1.45	1.78	1.65	1.71
Boyle	2.14	1.00	1.59	1.18	2.30	2.06	1.71
Adair	2.35	2.27	2.23	2.28	2.59	1.54	2.21
Fayette	1.38	0.58	1.67	0.89	1.74	1.07	1.22
Fleming	1.22	0.47	1.10	0.60	1.13	0.71	0.87
Shelby	2.20	1.22	2.52	1.72	2.76	1.73	2.02
Caldwell	1.36	0.64	0.98	1.19	2.21	0.84	1.20
Average	1.82	1.06	1.74	1.33	2.07	1.37	1.56

* 0 = very poor; 1 = poor; 2 = fair; 3 = good; 4 = very good

Table 9. Industry Evaluation*(location by companies)

	County							
Company	Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	Average
1	2.65	2.29	2.36	1.28	0.84	2.66	1.97	2.01
2	2.08	1.24	2.79	1.51	0.92	2.04	0.53	1.59
3	2.11	2.63	2.07	2.28	2.10	2.41	1.31	2.13
4	2.63	2.21	3.38	1.57	1.02	2.93	1.53	2.18
5	0.36	1.47	2.30	0.11	0.00	1.36	0.94	0.93
6	0.45	0.44	0.37	0.57	0.33	0.74	0.95	0.55
Average	1.71	1.71	2.21	1.22	0.87	2.02	1.20	1.56

* 0 = very poor; 1 = poor; 2 = fair; 3 = good; 4 = very good

Table 10.--Chemical Analysis of Cured Leaf: Percent Total Nitrogen

System	Variety	Stalk Position *	County							Weighted Average
			Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	
"High Yield"	B-21	1	3.04	3.21	3.42	3.78	4.05	2.48	3.84	
		2	3.70	4.41	4.16	4.41	4.80	2.51	3.75	
		3	4.62	5.18	4.72	5.26	5.53	3.64	4.02	
		4	4.60	5.40	4.80	5.43	5.66	4.18	4.50	
		5	-	-	-	-	-	4.34	4.38	
		Wt'd Av	3.95	4.48	4.24	4.60	4.98	3.28	4.15	4.26
	Ky 10	1	3.07	3.78	3.98	3.86	4.32	3.79	4.76	
		2	3.19	4.39	4.36	4.52	5.01	4.08	4.58	
		3	3.55	5.07	4.40	5.34	5.80	4.69	4.40	
		4	3.92	5.33	5.04	5.23	5.66	4.78	5.09	
		5	-	-	-	-	-	4.86	4.91	
		Wt'd Av	3.39	4.63	4.37	4.65	5.16	4.41	4.70	4.54
"Yield and Quality"	B-21	1	2.33	3.33	3.34	3.15	3.65	3.00	3.66	
		2	2.72	3.89	3.89	4.09	4.75	3.30	3.56	
		3	3.42	4.54	4.21	4.74	5.34	4.33	3.95	
		4	3.82	4.50	4.50	4.80	5.42	4.69	4.56	
		5	-	-	-	-	-	4.25	4.98	
		Wt'd Av	2.99	4.06	3.93	4.10	4.84	3.87	4.16	4.06
	Ky 10	1	3.30	3.89	3.34	3.14	3.55	3.58	4.16	
		2	3.88	3.92	3.66	4.06	4.68	3.34	4.28	
		3	3.84	4.62	4.53	4.24	5.62	4.02	4.16	
		4	4.44	4.70	4.73	4.15	4.73	4.24	4.64	
		5	-	-	-	-	-	4.65	4.56	
		Wt'd Av	3.84	4.28	3.96	3.90	4.73	3.87	4.33	4.13

Continued

Table 10. (Continued)

System	Variety	Stalk Position*	County: Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	Weighted Average
		1	2.28	3.00	2.54	2.66	3.08	2.79	3.55	
		2	2.71	3.39	3.04	2.99	3.96	2.90	3.72	
	B-21	3	3.44	3.94	3.64	3.78	5.10	3.28	3.45	
		4	3.84	4.02	4.02	3.97	5.31	3.60	3.65	
		5	-	-	-	-	-	3.86	3.74	
		Wt'd Av	2.96	3.61	3.14	3.21	4.30	3.23	3.58	3.51
"Quality"										
		1	3.05	3.00	3.04	2.49	3.24	4.04	3.96	
		2	3.40	3.44	3.26	2.56	4.17	4.04	3.78	
	Ky 10	3	3.96	3.76	3.84	3.26	4.82	4.29	3.50	
		4	4.14	3.85	4.04	3.58	4.78	4.91	4.08	
		5	-	-	-	-	-	4.94	3.78	
		Wt'd Av	3.50	3.55	3.43	2.85	4.24	4.36	3.75	3.70
	B-21		3.37	4.03	3.83	4.08	4.71	3.49	4.00	3.97
Wt'd AV										
	Ky 10		3.61	4.13	3.94	4.93	4.71	4.20	4.31	4.15

* 1 = flyings; 2 = lugs; 3 = bright leaf; 4 = red leaf; 5 = tips

Table 11.--Chemical Analysis of Cured Leaf: Percent Total Alkaloids

System	Variety	Stalk Position*	County							Weighted Average
			Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	
"High Yield"	B-21	1	1.43	1.06	1.68	2.44	2.12	1.45	1.64	
		2	2.81	4.07	3.11	4.06	2.36	2.02	2.62	
		3	2.94	4.18	3.23	4.55	4.42	2.82	4.83	
		4	2.28	3.89	3.32	4.34	3.37	2.93	6.48	
		5	-	-	-	-	-	2.30	5.68	
		Wt'd Av	2.54	3.26	2.90	3.84	2.96	2.32	4.97	3.34
	Ky 10	1	1.55	2.69	1.79	2.70	2.55	2.39	2.11	
		2	2.51	3.88	3.46	3.38	3.88	3.71	2.60	
		3	2.57	4.69	3.56	3.69	5.09	4.67	3.72	
		4	1.79	4.04	3.57	3.22	4.37	4.60	4.66	
		5	-	-	-	-	-	3.27	3.77	
		Wt'd Av	2.20	3.85	3.22	3.29	4.00	3.87	3.72	3.53
"Yield and Quality"	B-21	1	1.78	2.22	1.39	2.17	1.96	1.35	1.66	
		2	3.12	3.44	2.97	3.27	3.59	2.67	2.91	
		3	3.14	4.39	3.16	3.66	4.68	4.15	5.16	
		4	2.81	3.58	2.65	2.46	3.45	3.96	4.79	
		5	-	-	-	-	-	2.81	4.43	
		Wt'd Av	2.84	3.43	2.69	2.94	3.62	3.11	4.45	3.38
	Ky 10	1	1.71	2.53	1.90	2.73	3.12	2.58	2.43	
		2	3.00	3.99	3.66	3.91	4.00	4.55	3.36	
		3	3.67	4.91	4.20	4.50	5.17	3.67	3.57	
		4	2.97	4.82	3.51	3.77	5.16	4.81	5.75	
		5	-	-	-	-	-	4.18	4.48	
		Wt'd Av	2.91	4.09	3.43	3.73	4.29	3.88	4.08	3.80

Continued

Table 11.-(Continued)

System	Variety	Stalk Position*	County Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	Weighted Average
		1	1.03	1.76	1.36	1.83	2.16	1.40	1.73	
		2	2.31	3.64	3.20	2.76	3.27	2.90	2.36	
	B-21	3	2.88	3.99	3.45	2.84	4.83	4.00	3.86	
		4	2.29	4.49	3.56	2.25	4.09	3.95	4.30	
		5	-	-	-	-	-	3.82	3.91	
		Wt'd Av	2.21	3.55	2.88	2.50	3.58	3.17	3.64	3.17
"Quality"										
		1	1.64	2.05	2.16	2.11	3.12	3.70	1.67	
		2	2.24	3.93	3.31	2.84	4.24	4.09	3.53	
	Ky 10	3	4.91	3.69	3.66	3.11	4.75	4.91	3.79	
		4	4.24	4.26	3.13	2.76	4.07	5.08	5.29	
		5	-	-	-	-	-	4.63	4.36	
		Wt'd Av	2.74	3.64	3.14	2.68	4.16	4.50	4.10	3.63
Wt'd Av	B-21		2.55	3.42	2.82	3.20	3.41	2.86	4.42	3.30
	Ky 10		2.65	3.86	3.26	3.30	4.15	4.04	3.95	3.65

* 1 = flyings; 2 = lugs; 3 = bright leaf; 4 = red leaf; 5 = tips

Table 12.--Chemical Analysis of Cured Leaf: Percent Nitrate Nitrogen

System	Variety	Stalk Position *	County							Weighted Average
			Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	
"High Yield"	B-21	1	0.52	0.72	0.70	0.97	1.20	0.32	1.42	
		2	0.34	0.54	0.42	0.57	1.02	0.18	0.86	
		3	0.32	0.51	0.30	0.41	0.53	0.18	0.74	
		4	0.26	0.30	0.23	0.39	0.30	0.13	0.34	
		5	-	-	-	-	-	0.11	0.21	
		Wt'd Av	0.35	0.53	0.42	0.60	0.82	0.19	0.63	0.52
	Ky 10	1	0.20	1.04	0.82	1.36	1.34	1.08	1.57	
		2	0.15	0.70	0.52	0.93	0.96	0.68	1.51	
		3	0.04	0.38	0.22	0.50	0.44	0.46	0.60	
		4	0.04	0.20	0.18	0.34	0.40	0.36	0.39	
		5	-	-	-	-	-	0.20	0.20	
		Wt'd Av	0.11	0.59	0.45	0.83	0.84	0.59	0.71	0.63
"Yield and Quality"	B-21	1	0.27	0.70	0.42	0.46	1.06	0.84	1.02	
		2	0.20	0.53	0.18	0.24	0.76	0.44	0.86	
		3	0.10	0.36	0.14	0.19	0.36	0.38	0.35	
		4	0.09	0.26	0.13	0.18	0.28	0.19	0.24	
		5	-	-	-	-	-	0.14	0.20	
		Wt'd Av	0.17	0.46	0.21	0.28	0.64	0.42	0.42	0.39
	Ky 10	1	0.34	0.85	0.40	0.69	0.98	0.86	1.11	
		2	0.30	0.32	0.20	0.11	0.71	0.36	0.86	
		3	0.22	0.28	0.12	0.20	0.43	0.26	0.35	
		4	0.14	0.11	0.07	0.05	0.30	0.13	0.17	
		5	-	-	-	-	-	0.24	0.10	
		Wt'd Av	0.27	0.38	0.20	0.25	0.63	0.39	0.39	0.37

Continued

Table 12.-(Continued)

System	Variety	Stalk Position *	County							Weighted Average
			Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	
"Quality"	B-21	1	0.19	0.52	0.09	0.22	0.62	0.60	1.02	
		2	0.11	0.31	0.10	0.11	0.49	0.31	0.66	
		3	0.08	0.18	0.06	0.08	0.37	0.21	0.22	
		4	0.08	0.13	0.11	0.04	0.30	0.18	0.14	
		5	-	-	-	-	-	0.16	0.16	
		Wt'd Av	0.11	0.27	0.09	0.12	0.45	0.31	0.30	0.26
	Ky 10	1	0.18	0.36	0.18	0.19	0.72	1.11	0.95	
		2	0.14	0.16	0.14	0.08	0.44	0.74	0.52	
		3	0.08	0.11	0.08	0.04	0.34	0.44	0.24	
		4	0.05	0.13	0.05	0.04	0.26	0.37	0.15	
		5	-	-	-	-	-	0.26	0.09	
		Wt'd Av	0.13	0.18	0.12	0.09	0.44	0.62	0.27	0.28
Wt'd Av	B-21		0.23	0.43	0.27	0.38	0.65	0.29	0.45	0.40
	Ky 10		0.19	0.36	0.25	0.43	0.65	0.52	0.47	0.43

* 1=flyings; 2 = lugs; 3 = bright leaf; 4 = red leaf; 5 = tips

Table 13.--Chemical Analysis of Cured Leaf: Percent Protein Nitrogen

System	Variety	Stalk Position*	County							Weighted Average
			Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	
		1	1.35	1.27	1.46	1.32	1.41	1.18	1.41	
		2	1.20	1.32	1.39	1.36	1.32	1.06	1.39	
	B-21	3	1.32	1.44	1.67	1.45	1.46	1.11	1.16	
		4	1.67	1.47	1.62	1.52	1.60	1.25	1.18	
		5	-	-	-	-	-	1.30	1.19	
		Wt'd Av	1.32	1.36	1.50	1.39	1.41	1.15	1.21	1.33
"High Yield"		1	1.48	1.30	1.33	1.18	1.36	1.46	1.64	
		2	1.32	1.35	1.69	1.27	1.39	1.38	1.47	
	Ky 10	3	1.37	1.36	1.41	1.39	1.38	1.50	1.35	
		4	1.52	1.47	1.50	1.49	1.41	1.39	1.40	
		5	-	-	-	-	-	1.50	1.44	
		Wt'd Av	1.40	1.37	1.54	1.30	1.39	1.45	1.41	1.40
		1	1.28	1.21	1.69	1.27	1.28	1.30	1.20	
		2	1.17	1.21	1.40	1.25	1.32	1.15	1.47	
	B-21	3	1.18	1.33	1.44	1.36	1.30	1.27	1.06	
		4	1.44	1.74	1.65	1.42	1.68	1.41	1.27	
		5	-	-	-	-	-	1.42	1.47	
		Wt'd Av	1.23	1.36	1.49	1.31	1.36	1.28	1.23	1.32
"Yield and Quality"		1	1.53	1.44	1.65	1.22	1.05	1.37	1.70	
		2	1.36	1.24	1.26	1.16	1.27	1.46	1.54	
	Ky 10	3	1.36	1.39	1.29	1.23	1.34	1.30	1.32	
		4	1.53	1.39	1.41	1.23	1.27	1.26	1.25	
		5	-	-	-	-	-	1.36	1.34	
		Wt'd Av	1.41	1.36	1.37	1.20	1.25	1.35	1.36	1.32

Continued

Table 13.--(Continued)

System	Variety	Stalk Position *	County: Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	Weighted Average
		1	1.30	1.46	1.42	1.44	1.25	1.29	1.47	
		2	1.12	1.30	1.22	1.19	1.29	1.14	1.49	
	B-21	3	1.12	1.31	1.30	1.22	1.37	1.19	1.20	
		4	1.36	1.41	1.42	1.32	1.61	1.25	1.11	
		5	-	-	-	-	-	1.37	1.20	
		Wt'd Av	1.19	1.37	1.30	1.27	1.35	1.24	1.24	1.29
"Quality"										
		1	1.60	1.37	1.47	1.21	1.16	1.30	1.64	
		2	1.39	1.23	1.30	1.02	1.18	1.20	1.41	
	Ky 10	3	1.22	1.23	1.34	1.08	1.35	1.24	1.29	
		4	1.32	1.30	1.44	1.13	1.53	1.33	1.20	
		5	-	-	-	-	-	1.40	1.15	
		Wt'd Av	1.40	1.28	1.36	1.10	1.25	1.27	1.29	1.27
	B-21		1.25	1.37	1.44	1.33	1.37	1.22	1.23	1.32
Wt'd Av										
	Ky 10		1.41	1.33	1.42	1.21	1.30	1.36	1.36	1.34

* 1 = flyings; 2 = lugs; 3 = bright leaf; 4 = red leaf; 5 = tips

Table 14.-- Chemical Analysis of Cured Leaf: Percent Alpha Amino Nitrogen

System	Variety	Stalk Position*	County							Weighted Average
			Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	
"High Yield"	B-21	1	0.31	0.30	0.32	0.35	0.44	0.22	0.22	
		2	0.65	0.65	0.67	0.67	0.75	0.24	0.25	
		3	0.99	0.99	1.01	1.11	1.15	0.67	0.42	
		4	0.96	1.17	1.16	1.20	1.26	0.90	0.64	
		5	-	-	-	-	-	0.97	0.70	
		Wt'd Av	0.72	0.75	0.74	0.77	0.88	0.54	0.48	0.69
	Ky 10	1	0.32	0.35	0.26	0.31	0.38	0.24	0.32	
		2	0.40	0.64	0.54	0.73	0.85	0.47	0.42	
		3	0.59	1.02	0.79	1.31	1.36	0.69	0.60	
		4	0.81	1.19	1.08	1.33	1.33	0.91	0.85	
		5	-	-	-	-	-	0.98	0.94	
		Wt'd Av	0.50	0.79	0.61	0.84	0.95	0.62	0.66	0.73
"Yield and Quality"	B-21	1	0.25	0.32	0.33	0.38	0.33	0.22	0.26	
		2	0.67	0.54	0.68	0.80	0.81	0.44	0.28	
		3	0.68	0.85	0.71	1.11	1.18	0.71	0.55	
		4	0.73	0.94	0.86	1.05	1.08	0.88	0.76	
		5	-	-	-	-	-	0.78	0.88	
		Wt'd Av	0.61	0.66	0.64	0.80	0.87	0.59	0.59	0.68
	Ky 10	1	0.41	0.42	0.31	0.31	0.31	0.23	0.32	
		2	0.59	0.53	0.52	0.90	0.72	0.40	0.32	
		3	0.82	0.80	0.94	0.91	1.19	0.56	0.59	
		4	0.93	0.87	1.08	0.91	0.80	0.70	0.77	
		5	-	-	-	-	-	0.81	0.79	
		Wt'd Av	0.65	0.66	0.66	0.77	0.78	0.50	0.60	0.66

Continued

Table 14.--(Continued)

System	Variety	Stalk Position *	County							Weighted Average
			Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	
		1	0.15	0.20	0.24	0.23	0.27	0.15	0.22	
		2	0.29	0.38	0.33	0.39	0.55	0.24	0.32	
	B-21	3	0.58	0.70	0.55	0.73	1.07	0.31	0.36	
		4	0.77	0.58	0.63	0.89	1.12	0.47	0.54	
		5	-	-	-	-	-	0.54	0.60	
		Wt'd Av	0.40	0.47	0.38	0.49	0.71	0.32	0.41	0.47
"Quality"										
		1	0.34	0.26	0.32	0.19	0.30	0.35	0.30	
		2	0.43	0.43	0.35	0.28	0.70	0.43	0.33	
	Ky 10	3	0.71	0.63	0.53	0.59	0.85	0.61	0.34	
		4	0.76	0.55	0.78	0.79	1.28	0.85	0.62	
		5	-	-	-	-	-	1.01	0.57	
		Wt'd Av	0.49	0.47	0.43	0.40	0.73	0.60	0.44	0.52
Wt'd Av	B-21		0.60	0.62	0.61	0.71	0.82	0.49	0.50	0.62
	Ky 10		0.56	0.63	0.57	0.71	0.82	0.57	0.58	0.64

* 1 = flyings; 2 = lugs; 3 = bright leaf; 4 = red leaf; 5 = tips

Table 15.--Chemical Analysis of Cured Leaf: Percent Total Nitrogen Soluble

System	Variety	Stalk Position*	County							Weighted Average
			Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	
"High Yield"	B-21	1	55.6	60.4	57.3	65.1	65.2	52.4	63.3	
		2	67.6	70.1	66.6	69.2	72.5	57.8	62.9	
		3	71.4	72.2	64.6	72.4	73.6	69.5	71.1	
		4	63.7	72.8	66.2	72.0	71.7	70.1	73.8	
		5	-	-	-	-	-	70.0	72.8	
		Wt'd Av	66.0	68.6	64.3	69.3	71.5	63.3	70.6	67.9
	Ky 10	1	51.8	65.6	66.6	69.4	68.5	61.5	65.5	
		2	58.6	69.2	61.2	71.9	72.2	66.2	67.9	
		3	61.4	73.2	68.0	74.0	76.2	68.0	69.3	
		4	61.2	72.4	70.2	71.5	75.1	70.9	72.5	
		5	-	-	-	-	-	69.1	70.7	
		Wt'd Av	58.4	70.1	64.8	71.8	72.9	66.9	69.9	68.6
"Yield and Quality"	B-21	1	49.8	63.7	49.4	59.7	64.9	56.7	67.2	
		2	57.0	68.9	64.0	69.4	72.2	65.2	58.7	
		3	65.5	70.7	65.8	71.3	75.6	70.7	73.2	
		4	62.3	61.3	63.3	70.4	69.0	69.9	72.1	
		5	-	-	-	-	-	66.6	70.5	
		Wt'd Av	58.7	66.4	61.7	67.5	71.7	66.2	70.1	66.7
	Ky 10	1	53.6	63.0	50.6	61.1	70.4	61.7	59.1	
		2	64.9	68.4	65.6	71.4	72.9	56.3	64.0	
		3	64.6	69.9	71.5	71.0	76.2	67.7	68.3	
		4	65.5	70.4	70.2	70.4	73.2	70.3	73.1	
		5	-	-	-	-	-	70.8	70.6	
		Wt'd Av	62.9	68.0	64.7	68.8	73.3	64.6	68.6	67.4

Continued

Table 15. --(Continued)

System	Variety	Stalk Position*	County: Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	Weighted Average
		1	43.0	51.3	44.1	45.9	59.4	53.8	58.6	
		2	58.7	61.6	59.9	60.2	67.4	60.7	59.9	
	B-21	3	67.4	66.8	64.3	67.7	73.1	63.7	65.2	
		4	64.6	64.9	64.7	66.8	69.7	65.3	69.6	
		5	-	-	-	-	-	64.5	67.9	
		Wt'd Av	58.7	61.5	57.8	59.4	67.8	61.3	65.4	62.2
"Quality"										
		1	47.5	54.3	51.6	51.4	64.2	67.8	58.6	
		2	59.1	64.2	60.1	60.2	71.7	70.3	62.7	
	Ky 10	3	69.2	67.3	65.1	66.9	72.0	71.1	63.1	
		4	68.1	66.2	64.4	68.4	68.0	72.9	70.6	
		5	-	-	-	-	-	71.6	69.6	
		Wt'd Av	59.2	63.7	60.0	60.5	70.2	70.7	65.6	64.7
	B-21		61.7	65.3	61.6	66.2	70.4	63.8	69.0	65.8
Wt'd Av										
	Ky 10		60.5	67.2	63.2	67.9	72.2	67.1	68.2	67.0

* 1 = flyings; 2 = lugs; 3 = bright leaf; 4 = red leaf; 5 = tips

Table 16.--Chemical Analysis of Cured Leaf: ~~Percent~~ Water-soluble Acids

System	Variety	Stalk Position *	County							Weighted Average
			Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	
"High Yield"	B-21	1	1.77	1.76	1.62	1.78	2.39	1.03	1.15	
		2	3.18	4.05	3.36	3.12	3.08	1.36	1.72	
		3	3.79	4.97	3.80	4.10	4.48	2.74	2.86	
		4	3.48	5.14	4.36	4.36	4.50	3.90	4.86	
		5	-	-	-	-	-	3.56	4.49	
		Wt'd Av	3.14	3.89	3.26	3.21	3.52	2.34	3.37	3.27
	Ky 10	1	1.83	2.00	1.51	2.08	1.72	1.52	1.46	
		2	2.28	3.22	2.75	3.02	3.42	2.90	1.66	
		3	3.18	4.70	3.02	4.06	4.91	3.97	3.22	
		4	3.40	5.22	4.30	4.02	4.90	4.56	4.25	
		5	-	-	-	-	-	4.28	4.08	
		Wt'd Av	2.82	3.76	2.76	3.17	3.67	3.38	3.24	3.30
"Yield and Quality"	B-21	1	1.80	2.06	1.46	1.72	2.12	1.32	1.19	
		2	3.28	3.09	2.70	3.10	4.26	2.71	1.90	
		3	3.70	4.32	3.40	4.12	4.76	4.09	3.82	
		4	3.88	4.15	3.92	3.96	4.40	4.62	4.28	
		5	-	-	-	-	-	3.92	4.62	
		Wt'd Av	3.21	3.41	2.77	3.10	4.13	3.32	3.60	3.42
	Ky 10	1	2.08	2.04	1.50	1.90	1.67	1.48	1.34	
		2	3.36	3.28	2.52	3.70	2.65	2.50	1.83	
		3	4.04	4.34	4.30	3.80	4.40	3.12	3.10	
		4	3.97	5.08	4.32	4.37	2.98	4.27	4.39	
		5	-	-	-	-	-	3.72	4.06	
		Wt'd Av	3.36	3.68	3.02	3.41	2.94	2.89	3.22	3.22

Continued

Table 16.--(Continued)

System	Variety	Stalk Position*	County: Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	Weighted Average
		1	1.48	1.52	1.42	1.66	1.72	0.89	1.09	
		2	2.12	3.22	2.38	2.60	3.10	1.66	1.96	
	B-21	3	3.06	4.18	3.02	3.40	4.42	2.09	2.56	
		4	3.28	4.12	2.96	3.48	4.20	2.64	3.14	
		5	-	-	-	-	-	3.06	3.22	
		Wt'd Av	2.38	3.33	2.36	2.67	3.36	1.96	2.61	2.76
"Quality										
		1	1.95	1.82	1.60	1.69	2.32	1.84	1.30	
		2	3.01	3.26	2.14	2.26	3.32	2.42	2.02	
	Ky 10	3	4.58	3.98	2.90	3.02	3.78	2.82	2.32	
		4	4.60	3.76	3.02	3.36	3.92	3.88	3.91	
		5	-	-	-	-	-	3.29	3.36	
		Wt'd Av	3.21	3.30	2.30	2.44	3.33	2.80	2.78	2.92
	B-21		2.96	3.53	2.84	3.04	3.70	2.59	3.25	3.17
Wt'd Av										
	Ky 10		3.16	3.57	2.70	3.08	3.32	3.04	3.10	3.16

* 1 = flyings; 2 = lugs; 3 = bright leaf; 4 = red leaf; 5 = tips

Table 17.--Chemical Analysis of Cured Leaf: Percent Potassium

System	Variety	Stalk Position*	County							Weighted Average
			Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	
"High Yield"	B-21	1	5.35	5.80	5.15	3.55	4.30	5.42	5.02	
		2	5.30	3.35	4.40	2.75	3.65	5.05	4.60	
		3	4.60	2.75	3.55	2.62	3.40	4.35	3.38	
		4	3.70	2.82	3.40	2.60	2.78	3.45	2.38	
		5	-	-	-	-	-	3.35	2.70	
		Wt'd Av	4.92	3.75	4.21	2.88	3.56	4.48	3.26	3.80
	Ky 10	1	5.10	4.00	4.98	3.25	4.22	4.30	5.05	
		2	4.38	3.18	4.22	2.55	3.50	4.10	4.30	
		3	3.95	3.02	3.35	2.55	2.98	3.40	2.95	
		4	3.45	2.95	3.12	3.10	3.15	3.05	2.70	
		5	-	-	-	-	-	2.95	2.55	
		Wt'd Av	4.26	3.28	4.00	2.77	3.45	3.62	3.20	3.43
"Yield and Quality"	B-21	1	5.95	5.22	6.15	4.05	4.88	5.08	5.20	
		2	6.18	4.18	4.70	3.55	3.92	4.40	4.12	
		3	4.60	3.15	3.65	3.30	3.20	3.50	3.25	
		4	4.02	2.75	3.40	3.22	2.80	3.35	2.80	
		5	-	-	-	-	-	3.48	2.78	
		Wt'd Av	5.42	3.83	4.57	3.57	3.73	4.00	3.31	3.98
	Ky 10	1	5.90	4.68	4.70	3.85	3.50	4.70	4.40	
		2	5.35	4.18	3.45	3.15	2.92	4.30	3.60	
		3	4.20	3.00	3.12	3.12	2.60	4.15	2.75	
		4	3.75	2.85	2.85	3.20	2.92	3.60	2.55	
		5	-	-	-	-	-	3.20	2.58	
		Wt'd Av	4.99	3.68	3.54	3.31	2.93	4.12	2.89	3.63

Continued

Table 17.--(Continued)

System	Variety	Stalk Position*	County: Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	Weighted Average
		1	5.88	5.28	4.95	4.65	4.40	5.78	4.60	
		2	5.62	4.28	3.92	4.22	3.48	4.60	5.70	
	B-21	3	5.00	3.52	3.30	3.75	2.88	3.80	4.40	
		4	3.95	2.92	2.78	3.50	2.88	3.58	3.40	
		5	-	-	-	-	-	2.95	3.40	
		Wt'd Av	5.29	3.93	3.92	4.12	3.39	4.26	4.29	4.10
"Quality"										
		1	5.60	4.95	4.00	4.12	3.72	5.10	4.58	
		2	4.90	3.92	3.25	3.82	3.32	3.85	4.20	
	Ky 10	3	3.70	3.55	2.68	3.60	3.08	3.25	3.25	
		4	3.12	3.30	2.92	3.50	2.80	2.80	2.22	
		5	-	-	-	-	-	2.90	2.05	
		Wt'd Av	4.65	3.85	3.24	3.80	3.27	3.64	3.01	3.61
	B-21		5.18	3.84	4.26	3.42	3.27	4.24	3.56	3.90
Wt'd Av										
	Ky 10		4.68	3.61	3.61	3.23	3.22	3.81	3.04	3.55

* 1 = flyings; 2 = lugs; 3 = bright leaf; 4 = red leaf; 5 = tips

Table 18.--Chemical Analysis of Cured Leaf: Percent Calcium

System	Variety	Stalk Position *	County Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	Weighted Average
"High Yield"	B-21	1	5.42	6.35	6.15	6.60	5.95	6.62	6.25	
		2	4.58	5.95	5.00	6.45	5.50	5.72	5.78	
		3	2.98	4.92	3.20	4.95	3.90	4.50	5.62	
		4	2.45	3.92	3.70	4.48	2.95	4.20	5.00	
		5	-	-	-	-	-	3.52	4.70	
		Wt'd Av	4.04	5.37	4.62	5.87	4.80	5.08	5.41	5.08
	Ky 10	1	4.50	6.70	6.00	7.70	6.42	6.90	5.85	
		2	5.05	6.35	5.00	6.60	5.70	5.70	6.50	
		3	3.50	4.25	4.78	5.28	4.25	5.20	5.62	
		4	2.15	3.40	3.55	4.15	3.75	4.68	4.75	
		5	-	-	-	-	-	3.20	3.68	
		Wt'd Av	4.02	5.24	4.97	6.26	4.56	5.40	5.34	5.20
"Yield and Quality"	B-21	1	4.60	6.60	4.75	6.85	6.28	6.45	6.25	
		2	3.95	5.65	4.30	5.60	5.35	5.60	6.58	
		3	2.62	4.70	3.35	4.58	4.25	5.05	5.65	
		4	2.10	3.25	2.75	3.22	3.18	3.80	4.65	
		5	-	-	-	-	-	4.05	3.45	
		Wt'd Av	3.46	5.08	3.98	5.31	4.93	5.12	5.30	4.82
	Ky 10	1	5.02	6.55	5.80	6.90	6.65	6.78	5.75	
		2	4.28	5.35	5.50	5.00	3.50	5.12	6.42	
		3	3.55	4.90	4.38	5.25	4.45	4.70	5.70	
		4	2.42	3.45	3.85	3.82	3.38	3.75	4.15	
		5	-	-	-	-	-	4.12	3.35	
		Wt'd Av	4.01	5.08	5.06	5.31	4.15	5.03	5.23	4.84

Continued

Table 18.--(Continued)

System	Variety	Stalk Position*	County							Weighted Average
			Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	
		1	4.68	6.80	5.08	6.60	6.45	6.40	6.48	
		2	4.68	5.98	5.40	5.15	6.20	5.95	5.40	
	B-21	3	3.90	4.40	4.95	4.45	4.58	6.10	5.42	
		4	3.78	4.28	4.70	3.80	3.80	5.20	5.30	
		5	-	-	-	-	-	5.18	5.08	
		Wt'd Av	4.37	5.30	5.18	5.15	5.49	5.86	5.39	5.29
"Quality"										
		1	4.15	6.35	6.18	6.98	6.70	6.78	6.00	
		2	4.25	5.30	6.00	5.65	5.70	6.05	5.88	
	Ky 10	3	3.15	4.45	5.00	4.72	4.90	5.82	5.48	
		4	2.62	4.35	4.35	4.05	3.90	5.25	4.80	
		5	-	-	-	-	-	4.60	4.85	
		Wt'd Av	3.87	5.03	5.63	5.54	5.48	5.86	5.30	5.28
Wt'd Av	B-21		3.94	5.26	4.54	5.50	5.07	5.32	5.36	5.05
	Ky 10		3.97	5.11	5.21	5.73	4.72	5.39	5.29	5.10

* 1 = flyings; 2 = lugs; 3 = bright leaf; 4 = red leaf; 5 = tips

Table 19.--Chemical Analysis of Cured Leaf: Percent Magnesium

System	Variety	Stalk Position *	County							Weighted Average
			Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	
"High Yield"	B-21	1	0.49	0.46	0.60	0.68	1.00	0.74	0.84	
		2	.44	.54	.48	.64	1.06	.64	.95	
		3	.46	.56	.42	.56	.73	.54	.94	
		4	.46	.52	.44	.52	.74	.57	1.21	
		5	-	-	-	-	-	.56	1.04	
		Wt'd Av	0.46	0.52	0.48	0.61	0.92	0.61	1.03	0.67
	Ky 10	1	0.40	0.53	0.48	0.76	1.04	1.08	1.08	
		2	.42	.60	.60	.74	1.02	.86	1.07	
		3	.38	.53	.44	.65	.88	.82	1.10	
		4	.46	.46	.44	.58	.81	.76	1.14	
		5	-	-	-	-	-	.62	.85	
		Wt'd Av	0.41	0.54	0.52	0.70	0.97	0.86	1.08	0.76
"Yield and Quality"	B-21	1	0.39	0.46	0.36	0.46	0.92	0.88	0.64	
		2	.41	.52	.36	.41	.82	.76	.78	
		3	.36	.48	.36	.44	.78	.72	.82	
		4	.40	.50	.33	.40	.66	.58	.76	
		5	-	-	-	-	-	.54	.70	
		Wt'd Av	0.39	0.49	0.36	0.43	0.80	0.72	0.77	0.59
	Ky 10	1	0.55	0.52	0.48	0.56	1.44	0.93	0.93	
		2	.49	.45	.50	.45	.80	.76	.98	
		3	.48	.50	.45	.48	.90	.64	1.04	
		4	.46	.46	.50	.50	.81	.66	.82	
		5	-	-	-	-	-	.68	.72	
		Wt'd Av	0.50	0.48	0.48	0.49	0.92	0.74	0.95	0.66

Continued

Table 19.--(Continued)

System	Variety	Stalk Position*	County Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	Weighted Average
		1	0.36	0.44	0.30	0.36	0.92	0.72	0.96	
		2	.43	.46	.38	.34	.84	.60	.46	
	B-21	3	.50	.45	.34	.35	.89	.63	.46	
		4	.52	.50	.42	.38	.74	.58	.54	
		5	-	-	-	-	-	.62	.54	
		Wt'd Av	0.45	0.46	0.36	0.35	0.85	0.64	0.50	0.53
"Quality"										
		1	0.43	0.45	0.44	0.36	1.44	0.84	0.77	
		2	.46	.42	.46	.40	.92	.82	.66	
	Ky 10	3	.52	.40	.52	.42	.77	.76	.75	
		4	.64	.46	.50	.47	.84	.72	.77	
		5	-	-	-	-	-	.66	.94	
		Wt'd Av	0.48	0.43	0.47	0.41	0.96	0.77	0.77	0.63
	B-21		.43	.49	.40	.48	.85	.66	.79	.60
Wt'd Av										
	Ky 10		.47	.48	.49	.55	.95	.79	.95	.68

* 1 = flyings; 2 = lugs; 3 = bright leaf; 4 = red leaf; 5 = tips

Table 20.--Chemical Analysis of Cured Leaf: Percent Phosphorus

System	Variety	Stalk Position *	County							Weighted Average
			Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	
		1	0.21	0.18	0.25	0.20	0.16	0.33	0.18	
		2	.22	.18	.25	.19	.19	.30	.20	
	B-21	3	.21	.20	.25	.20	.20	.27	.18	
		4	.22	.22	.25	.20	.23	.27	.18	
		5	-	-	-	-	-	.24	.19	
		Wt'd Av	0.22	0.20	0.25	0.20	0.19	0.29	0.18	0.21
"High Yield"		1	0.28	0.18	0.26	0.18	0.16	0.22	0.24	
		2	.23	.20	.24	.20	.20	.24	.24	
	Ky 10	3	.23	.22	.23	.23	.22	.22	.20	
		4	.22	.22	.24	.23	.22	.20	.20	
		5	-	-	-	-	-	.20	.21	
		Wt'd Av	0.24	0.21	0.24	0.21	0.20	0.22	0.21	0.21
		1	0.28	0.18	0.32	0.21	0.17	0.26	0.22	
		2	.24	.19	.28	.20	.19	.22	.18	
	B-21	3	.22	.20	.27	.21	.20	.23	.20	
		4	.22	.20	.28	.22	.21	.22	.20	
		5	-	-	-	-	-	.26	.20	
		Wt'd Av	0.24	0.19	0.28	0.21	0.19	0.23	0.20	0.22
"Yield and Quality"		1	0.28	0.22	0.28	0.22	0.14	0.24	0.26	
		2	.22	.20	.26	.21	.20	.22	.22	
	Ky 10	3	.20	.20	.24	.21	.20	.22	.22	
		4	.20	.20	.24	.19	.21	.20	.18	
		5	-	-	-	-	-	.26	.20	
		Wt'd Av	0.22	0.20	0.25	0.21	0.20	0.22	0.21	0.22

Continued

Table 20.--(Continued)

System	Variety	Stalk Position *	County: Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	Weighted Average
		1	0.29	0.20	0.35	0.26	0.13	0.31	0.21	
		2	.25	.20	.27	.26	.16	.28	.26	
	B-21	3	.24	.20	.27	.23	.20	.26	.24	
		4	.25	.20	.26	.25	.20	.30	.23	
		5	-	-	-	-	-	.28	.22	
		Wt'd Av	0.26	0.20	0.29	0.25	0.17	0.29	0.24	0.23
"Quality"										
		1	0.30	0.24	0.26	0.27	0.16	0.28	0.25	
		2	.26	.21	.24	.22	.18	.24	.24	
	Ky 10	3	.22	.21	.22	.23	.19	.26	.22	
		4	.23	.20	.25	.22	.22	.28	.20	
		5	-	-	-	-	-	.28	.20	
		Wt'd Av	0.26	0.21	0.24	0.24	0.18	0.26	0.22	0.23
Wt'd Av	B-21		.24	.20	.27	.22	.18	.27	.20	.22
	Ky 10		.24	.21	.24	.22	.19	.23	.21	.22

* 1 = flyings; 2 = lugs; 3 = bright leaf; 4 = red leaf; 5 = tips

Table 21. Chemical Analysis of Cured Leaf: Parts per Million Manganese

System	Variety	Stalk Position*	County							Weighted Average
			Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	
"High Yield"	B-21	1	240	142	255	93	230	100	155	
		2	455	163	245	110	140	89	165	
		3	385	130	224	126	150	110	190	
		4	235	108	160	70	108	108	177	
		5	-	-	-	-	-	123	175	
		Wt'd Av	372	138	232	103	151	103	180	180
	Ky 10	1	600	218	367	93	216	151	440	
		2	950	102	200	92	154	111	500	
		3	760	81	150	100	125	135	380	
		4	320	86	164	77	140	120	420	
		5	-	-	-	-	-	106	260	
		Wt'd Av	717	120	210	93	155	129	404	236
"Yield and Quality"	B-21	1	334	157	175	65	151	130	150	
		2	550	185	151	67	115	94	175	
		3	334	135	150	72	110	100	220	
		4	340	148	118	65	102	110	175	
		5	-	-	-	-	-	113	160	
		Wt'd Av	424	157	152	67	117	106	190	166
	Ky 10	1	1000	133	134	75	119	115	260	
		2	990	67	158	74	100	92	270	
		3	610	70	170	74	100	94	280	
		4	600	84	123	74	106	79	200	
		5	-	-	-	-	-	100	178	
		Wt'd Av	858	85	152	74	104	96	250	221

Continued

Table 21. --(Continued)

System	Variety	Stalk Position *	County: Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	Weighted Average
		1	183	131	150	112	140	114	152	
		2	350	113	138	81	124	96	145	
	B-21	3	331	104	120	87	97	122	180	
		4	290	122	120	101	114	110	187	
		5	-	-	-	-	-	120	192	
		Wt'd Av	306	117	135	92	119	113	176	145
"Quality"										
		1	585	101	118	93	75	92	112	
		2	500	83	123	50	104	120	106	
	Ky 10	3	490	85	120	66	108	120	98	
		4	450	100	120	93	90	180	125	
		5	-	-	-	-	-	110	120	
		Wt'd Av	510	92	121	72	99	127	110	146
	B-21		372	136	177	88	128	107	183	165
Wt'd Av										
	Ky 10		718	99	163	81	119	116	269	204

* 1 = flyings; 2 = lugs; 3 = bright leaf; 4 = red leaf; 5 = tips

Table 22.--Filling Values (cc./0.33 gm)

Variety	COUNTY							
	Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	Average
				"High Yield"				
B21	1.63	1.68	1.64	1.63	1.63	1.83	1.63	1.67
Ky 10	1.67	1.61	1.61	1.72	1.56	1.56	1.54	1.62
Average	1.65	1.64	1.62	1.68	1.60	1.70	1.58	1.64
				"Yield and Quality"				
B21	1.66	1.69	1.66	1.64	1.58	1.76	1.50	1.64
Ky 10	1.73	1.60	1.70	1.53	1.53	1.53	1.58	1.60
Average	1.70	1.64	1.68	1.58	1.56	1.64	1.54	1.62
				"Quality"				
B21	1.76	1.80	1.81	1.77	1.61	1.90	1.63	1.75
Ky 10	1.74	1.65	1.76	1.85	1.63	1.70	1.59	1.72
Average	1.75	1.72	1.78	1.81	1.62	1.80	1.61	1.74
				Average				
B21	1.68	1.72	1.70	1.68	1.61	1.83	1.59	1.69
Ky 10	1.71	1.62	1.69	1.70	1.57	1.60	1.57	1.65
Average	1.70	1.67	1.69	1.69	1.59	1.71	1.58	1.67

Table 23.--Percent Moisture Equilibrium at 60% Relative Humidity

Variety	Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell	Average
				"High Yield"				
B21	11.4	10.8	10.7	10.5	11.1	10.8	10.6	10.8
Ky 10	10.8	10.9	10.7	10.6	11.1	11.0	10.6	10.8
Average	11.1	10.8	10.7	10.6	11.1	10.9	10.6	10.8
				"Yield and Quality"				
B21	11.4	10.7	10.9	10.7	11.4	11.1	10.9	11.0
Ky 10	11.4	11.1	10.5	10.4	11.2	11.1	10.7	10.9
Average	11.4	10.9	10.7	10.6	11.2	11.1	10.8	10.9
				"Quality"				
B21	10.8	10.8	10.2	10.2	11.0	10.2	10.3	10.5
Ky 10	10.7	10.9	10.0	9.9	11.0	10.5	10.4	10.5
Average	10.8	10.8	10.1	10.0	11.0	10.4	10.4	10.5
				Average				
B21	11.2	10.8	10.6	10.5	11.3	10.7	10.6	10.8
Ky 10	11.0	10.9	10.4	10.3	11.1	10.9	10.6	10.7
Average	11.1	10.8	10.5	10.4	11.2	10.8	10.6	10.7

Table 24. Inches of Rainfall on Each Farm During May-August 1967

		County						
		Hardin	Boyle	Adair	Fayette	Fleming	Shelby	Caldwell
May	1-10	3.27	2.85	2.43	3.12	2.43	3.09	2.12
	11-20	3.56	3.95	2.96	3.12	3.71	0.25	3.61
	21-31	0.23	0.40	2.35	0.70	0.45	1.34	0.83
	Total	7.06	7.20	7.74	6.94	6.59	4.68	6.56
June	1-10	0.38	0.75	1.27	1.50	1.88	0.30	0.81
	11-20	0.10	1.25	0.00	0.78	2.15	0.59	0.87
	21-30	2.63	2.70	1.60	0.10	1.61	2.16	2.21
	Total	3.11	4.70	2.87	2.38	5.64	3.05	3.89
July	1-10	6.74	5.33	8.26	0.68	0.00	1.71	1.47
	11-20	0.67	0.71	1.09	1.81	1.44	2.34	0.95
	21-31	2.29	1.19	2.12	2.76	2.59	3.08	2.96
	Total	9.70	7.23	11.47	5.25	4.03	7.13	5.38
August	1-10	5.52	1.39	4.61	0.47	0.79	0.21	1.28
	11-20	0.00	0.50	0.13	1.74	1.46	1.76	0.49
	21-31	.89	1.24	1.37	1.40	0.58	1.26	0.49
	Total	6.41	3.13	6.11	3.61	2.83	3.23	2.26
Total		26.28	22.26	28.19	18.18	19.09	18.09	18.09

2M—2-69