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A BURLEY TOBACCO VARIETY-MANAGEMENT STUDY IN 1966-67

J. H. Smiley, W. O. Atkinson, A. M. Wallace and I. E. Massie

A management study was designed to investigate the desirability of two management systems emphasizing (1) yield and (2) quality and a third system (3) 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.)

Two varieties, Burley 21 and Ky 10, were grown under the three management systems (outlined in Table 1) in 1/4 acre non-replicated plots at five locations in Kentucky in 1966 and at seven locations in 1967. A three-year or older sod was selected at each location. Phosphorus and potassium were applied in all systems at rates based on soil tests. Applications were sufficiently large so that these elements would not be limiting factors in plant growth.

Table 1. Farm Practices Employed in the 1966-67
Kentucky Burley Variety-Management Study

Practice	Management Systems		
	"High Yield"	"Yield & 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.

The "yield and quality" system resulted in the production of 51 pounds of leaf per acre more than the "high yield" system, and the yield from the "quality" system was much lower (Table 2). Ky 10 out-yielded Bur 21 by 324, 304, and 232 pounds per acre for the "quality," "yield and quality," and "high yield" systems, respectively.

Table 2. Yields (pounds per acre)

System	Variety	YIELD		2 Year Average	Varietal Difference
		1966	1967		
"Yield"	B 21	2832	2832	2832	232
	Ky 10	2998	3130	3064	
"Y + Q"	B 21	2920	2774	2847	304
	Ky 10	3155	3147	3151	
"Quality"	B 21	2320	2356	2338	324
	Ky 10	2626	2697	2662	

Acres values were in the same order as yields, and were always higher for Ky 10 (Table 3). Values, expressed as dollars per 100 pounds, were slightly, but consistently, higher for variety Bur 21 and differed very slightly between management systems.

Table 3. Values (dollars per acre)

System	Variety	VALUE		2 Year Average	Varietal Difference
		1966	1967		
"Yield"	B 21	1936	2053	1994	124
	Ky 10	2016	2219	2118	
"Y + Q"	B 21	1982	2007	1994	198
	Ky 10	2127	2257	2192	
"Quality"	B 21	1599	1695	1647	201
	Ky 10	1765	1930	1848	

These results indicate that it is more desirable to follow approved practices which are directed toward achieving an acceptable level of both yield and quality.