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Budgeting in Burley Tobacco

ad Gross, Darrell Mundy, Vickie Witcher, and Phil L. Kenkel
Agricultural Economics
Agricultural Extension Service
University of Tennessee

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BUDGETING IN BURLEY TOBACCO

Brad Gross, Darrell Mundy, and Vickie Witcher
Agricultural Economics and Rural Sociology

Phil Kenkel
Agricultural Economics and Resource Development

INTRODUCTION

This publication contains a burley tobacco budget for the 2000 crop year. Cost and return values used in the budget are based upon “average” Tennessee input prices, production practices, and sale prices for the upcoming year. Since budget values often vary from farm to farm, each producer is encouraged to adjust this budget to reflect production practices and prices that are relevant to their own farming operation.

MAJOR COST CHANGE FOR 2000

The major cost change that many growers are already experiencing across Tennessee is a significant increase in quota lease prices for the 2000 season. This increase can be attributed to the 45-percent cut in 2000 basic quotas but is likely being influenced by expected future Phase II settlement payments as well. Given these two considerations, the budget and tables on the following pages are based on an average lease price of 25 cents per pound.

BUDGET INTERPRETATION

Revenue and cost items for the 2000 budget (page 4) are broken down into three separate sections: **GROSS REVENUE**, **VARIABLE COSTS**, and **FIXED COSTS**. Explanations of the items that fall into each section and the economic returns that can be calculated are detailed below.

- **GROSS REVENUE** represents per acre cash income to the tobacco operation and is calculated by multiplying the average yield per acre by the average gross sale price per pound. The average gross sale price should also include any rebates and/or hauling checks paid to the grower by the warehouse.
- **VARIABLE COSTS** are typically cash expenses that must be paid annually to produce a crop of tobacco. For this reason, variable costs are often called "cash costs" or "out-of-pocket expenses". Examples of variable costs include fertilizer, chemicals, and hired labor.
- **RETURN OVER VARIABLE COSTS** is simply the **GROSS REVENUE** of the crop minus the **TOTAL VARIABLE COSTS**. This value can essentially be viewed as the return over “cash costs” or the return over “out of pocket expenses”.
- **FIXED COSTS** are the expenses that result from ownership of a fixed input. Examples of fixed costs include depreciation, property taxes, and insurance on barns and machinery.
- The **RETURN TO LAND, OPERATOR LABOR, AND MANAGEMENT** is calculated by subtracting the **TOTAL FIXED COSTS** from the **RETURN OVER VARIABLE COSTS**. This value represents the return to the operator's land (the equivalent of an annual land charge or

rental value), time (unpaid operator/family labor), and management skills employed in producing a crop.

- The **RETURN TO OPERATOR LABOR AND MANAGEMENT** is calculated by subtracting the “Value of Land/Rental Cost” from the previous return. This value is the return to the operator's time (unpaid operator/family labor) and management skills employed in producing a crop.
- The **RETURN TO MANAGEMENT** is calculated by subtracting the per acre value of unpaid operator/family labor provides . This value tells how much money is left over (if any) after providing a wage (\$7 per hour in budget) for unpaid operator/family time employed in the crop and is a payment to management skills(including taking risks).
- **Additional Profitability Measures:**

-RETURN PER LABOR HOUR (DOLLARS PER HOUR): This measure represents the dollar return for each labor hour, both hired and unpaid operator/family labor, employed in producing a crop. It is calculated by adding the per acre **RETURN TO OPERATOR LABOR AND MANAGEMENT** and the per acre cost of hired labor together and dividing the sum by the total per acre labor requirements. Estimated labor requirements are estimated in Table 5.

-RETURN PER OPERATOR LABOR HOUR (DOLLARS PER HOUR): This measure is the dollar return per hour for each unpaid labor hour used in producing the crop by the operator and/or other unpaid family members. It is calculated by taking the per acre **RETURN TO OPERATOR LABOR AND MANAGEMENT** and dividing the value by the number of unpaid hours worked by the operator/family for each acre. The resulting value provides a comparison against other employment options for the operator and other family members.

PROFIT ANALYSIS

Based upon budget values, the **TOTAL VARIABLE COSTS** or "cash costs" of production for the 2000 crop are estimated at **\$2,352** per acre or **\$.94** a pound. The breakdown of variable costs in the 2000 budget are displayed in Figure 1. The **RETURN OVER VARIABLE COSTS** or "cash costs" was calculated to be **\$2,398** per acre or **\$.96** per pound. **FIXED COSTS** were estimated at **\$440** an acre or **\$.18** a pound. The charges for barn space depreciation, insurance, and taxes was the dominant fixed costs (outside of interest charges) at \$160.00 an acre or \$0.06 a pound. The **RETURN TO LAND, OPERATOR LABOR, AND MANAGEMENT** was calculated to be **\$1,958** an acre or **\$.78** a pound. Taking a charge out for land use(\$100) and a charge for all

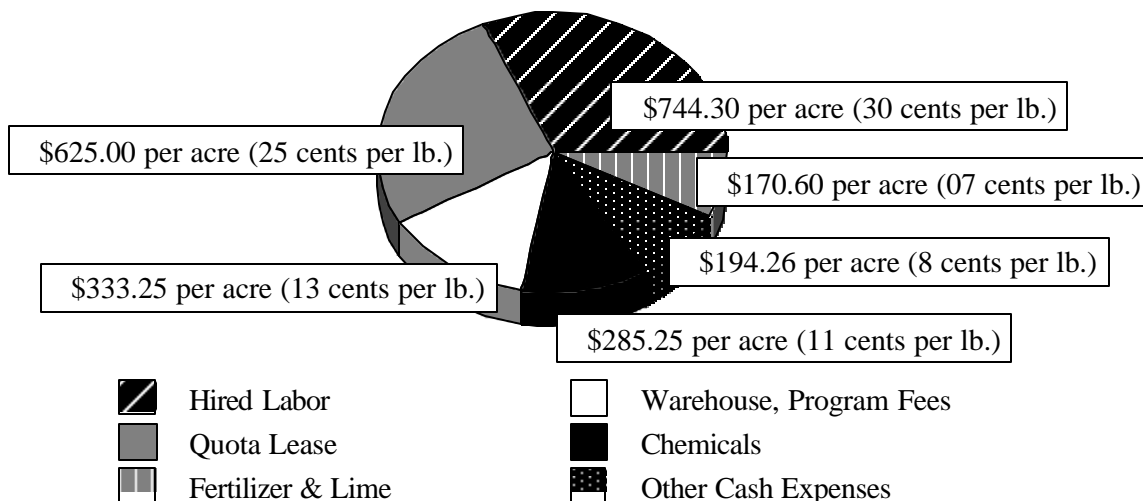
$\frac{\text{GROSS REVENUE}}{\text{-TOTAL VARIABLE COSTS}}$
$\text{RETURN OVER VARIABLE COSTS}$

$\frac{\text{RETURN OVER VARIABLE COSTS}}{\text{-FIXED COSTS}}$
$\text{RETURN TO LAND, OPERATOR LABOR, AND MANAGEMENT}$

$\frac{\text{RETURN TO LAND, OPERATOR LABOR, AND MANAGEMENT}}{\text{-LAND CHARGE}}$
$\text{RETURN TO OPERATOR LABOR AND MANAGEMENT}$

$\frac{\text{RETURN TO OPERATOR LABOR AND MANAGEMENT}}{\text{-OPERATOR LABOR}}$
$\text{RETURN TO MANAGEMENT}$

Figure 1. Breakdown of Cash Costs



unpaid operator/family labor (65.4 hours at \$7 per hour) employed in the crop leaves a **RETURN TO MANAGEMENT** of **\$1,400** per acre or per **\$.56** pound.

Since yield and average sale price will vary from farm to farm each year, calculated returns at varying yield and prices levels are displayed in Tables 1-4 on page 5. Tables 1 and 2 include calculations of the **RETURN OVER VARIABLE COSTS** (return over "cash costs") on a per acre and per pound basis. Tables 3 and 4 include calculations of the **RETURN TO MANAGEMENT** on a per acre and a per pound basis. Revenue and cost items that change as yield or sale price changes (warehouse charges or No Net Cost) are adjusted accordingly.

LABOR REQUIREMENTS

Labor requirements for the budget are estimated in Table 5 on page 6. Labor hours are broken down into three separate sections; Pre-harvest, Harvest, and Post-Harvest. Pre-Harvest labor includes all labor up to cutting tobacco. Harvest labor includes cutting, loading, hauling, and hanging the tobacco. Post-Harvest labor includes all other activities that occur after harvest such as takedown out of the barn/structure and market preparation (stripping). The labor is also broken out into hired labor and unpaid operator/family labor so that hired labor can be estimated and a return per operator labor hour can be calculated.

TOBACCO SYSTEMS SOFTWARE

If a grower is interested in calculating costs and returns based upon their individual situation, budgeting software is available through the University of Tennessee. The software is free and requires no other additional programs to run it. To get a copy of the software, contact your local extension agent or call Brad Gross or Darrell Mundy (865-974-7231) or Phil Kenkel (865-974-7409) at the University of Tennessee if it is not available through your local office. The software and this budget is available on Tobacco Info Online at:

2000 BURLEY TOBACCO BUDGET

6,789 Plants Per Acre

ITEM	DESCRIPTION	UNIT	AMOUNT (#/AC)	PRICE (\$/UNIT)	TOTAL (\$/AC)	TOTAL (\$/LB)
GROSS REVENUE						
Tobacco Sales	Burley Tobacco	lb	2500	\$1.90	\$4,750.00	\$1.90
VARIABLE COSTS						
Transplants	Direct Seed, Outdoor Beds	1000	6.79	\$10.04	\$68.16	\$0.03
Fertilization	Lime	ton	1.0	\$14.00	\$14.00	\$0.01
	Blended Fertilizer, 9-18-27	lb	900.0	\$0.14	\$126.45	\$0.05
	Amonium Nitrate, 34-0-0	lb	300.0	\$0.10	\$30.15	\$0.01
Herbicide	Spartan 4F	oz	10.1	\$3.12	\$31.56	\$0.01
	Command 3ME	pt	2.0	\$8.50	\$17.00	\$0.01
Insecticide	Orthene 97G, 3 Applications	lb	2.25	\$11.00	\$24.75	\$0.01
	Admire 2L	oz	6.79	\$4.75	\$32.25	\$0.01
Fungicide	Ridomil Gold (1 pt. rate)	pint	1.0	\$86.25	\$86.25	\$0.03
	Acrobat MZ, 3 Applications	lb	3.0	\$14.00	\$42.00	\$0.02
Sucker Control	MH-30	gal	1.5	\$14.30	\$21.45	\$0.01
	Prime+	gal	0.5	\$60.00	\$30.00	\$0.01
Cover Crop	Wheat	bu	2.0	\$8.50	\$17.00	\$0.01
Hired Labor	Pre-Harvest, Transplant to Stick Drop	hr	17.5	\$6.25	\$109.38	\$0.04
	Harvest, Cutting	sticks	1131	\$0.12	\$135.77	\$0.05
	Harvest, Field Loading & Hanging	hr	14.9	\$8.00	\$119.20	\$0.05
	Post-Harvest, Market Preparation	hr	60.8	\$6.25	\$379.69	\$0.15
Machinery	Fuel/Oil, Repairs	ac	1	\$35.00	\$35.00	\$0.01
Warehouse Fees	Floor Charge	% of sales	4.50%	\$4,750.00	\$213.75	\$0.09
	Handling Fee	cwt	25.0	\$1.00	\$25.00	\$0.01
Program Fees	No Net Cost, Promotional Fund	lb	2500	\$0.03	\$75.00	\$0.03
	Grading	cwt	25.0	\$0.78	\$19.50	\$0.01
Quota	Cash Quota Lease	lb	2500	\$0.25	\$625.00	\$0.25
Supplies	Cotton Twine	ac	1	\$3.50	\$3.50	\$0.00
Interest	Variables Costs, 6 months	\$	\$1,568.86	9.00%	\$70.60	\$0.03
TOTAL VARIABLE COSTS					\$2,352.39	\$0.94
RETURN OVER VARIABLE COSTS					\$2,397.61	\$0.96
FIXED COSTS						
Outdoor Float Beds	Depreciation	ac	1.0	\$33.94	\$33.94	\$0.01
Machinery	Depreciation, Insurance, Storage	ac	1.0	\$36.00	\$36.00	\$0.01
3-Tier Barn	Depreciation, Insurance	ac	1.0	\$160.00	\$160.00	\$0.06
Tobacco Sticks	Depreciated at 8 years	ac	1.0	\$18.75	\$18.75	\$0.01
Interest	Barns, Machinery	ac	1.0	\$191.25	\$191.25	\$0.08
TOTAL FIXED COSTS					\$439.94	\$0.18
RETURN TO LAND, OPERATOR LABOR, AND MANAGEMENT					\$1,957.67	\$0.78
Land	Value of Land/Rental Cost	ac	1.0	\$100.00	\$100.00	\$0.04
RETURN TO OPERATOR LABOR AND MANAGEMENT					\$1,857.67	\$0.74
Operator Labor	Unpaid Operator and/or Family Labor	hrs	65.4	\$7.00	\$457.80	\$0.18
RETURN TO MANAGEMENT					\$1,399.87	\$0.56
<i>Additional Profitability Measures</i>						
RETURN TO LABOR AND MANAGEMENT (DOLLARS PER HOUR)					\$14.57	
RETURN TO OPERATOR LABOR AND MANAGEMENT (DOLLARS PER HOUR)					\$28.40	

**TABLE 1. PER ACRE RETURN OVER VARIABLE COSTS
AT VARYING YIELDS AND PRICES**

		AVERAGE SALE PRICE PER POUND					
		1.75	1.80	1.85	1.90	1.95	2.00
YIELD PER ACRE	1750	\$1,018	\$1,101	\$1,185	\$1,269	\$1,352	\$1,436
	2000	\$1,358	\$1,454	\$1,549	\$1,645	\$1,740	\$1,836
	2250	\$1,699	\$1,806	\$1,914	\$2,021	\$2,129	\$2,236
	2500	\$2,039	\$2,159	\$2,278	\$2,398	\$2,517	\$2,636
	2750	\$2,380	\$2,511	\$2,643	\$2,774	\$2,905	\$3,037
	3000	\$2,721	\$2,864	\$3,007	\$3,150	\$3,294	\$3,437
	3250	\$3,061	\$3,216	\$3,372	\$3,527	\$3,682	\$3,837

**TABLE 2. PER POUND RETURN OVER VARIABLE COSTS
AT VARYING YIELDS AND PRICES**

		AVERAGE SALE PRICE PER POUND					
		1.75	1.80	1.85	1.90	1.95	2.00
YIELD PER ACRE	1750	\$0.58	\$0.63	\$0.68	\$0.72	\$0.77	\$0.82
	2000	\$0.68	\$0.73	\$0.77	\$0.82	\$0.87	\$0.92
	2250	\$0.76	\$0.80	\$0.85	\$0.90	\$0.95	\$0.99
	2500	\$0.82	\$0.86	\$0.91	\$0.96	\$1.01	\$1.05
	2750	\$0.87	\$0.91	\$0.96	\$1.01	\$1.06	\$1.10
	3000	\$0.91	\$0.95	\$1.00	\$1.05	\$1.10	\$1.15
	3250	\$0.94	\$0.99	\$1.04	\$1.09	\$1.13	\$1.18

**TABLE 3. PER ACRE RETURN TO MANAGEMENT
AT VARYING YIELDS AND PRICES**

		AVERAGE SALE PRICE PER POUND					
		1.75	1.80	1.85	1.90	1.95	2.00
YIELD PER ACRE	1750	\$20	\$104	\$187	\$271	\$354	\$438
	2000	\$361	\$456	\$552	\$647	\$743	\$838
	2250	\$701	\$809	\$916	\$1,024	\$1,131	\$1,238
	2500	\$1,042	\$1,161	\$1,280	\$1,400	\$1,519	\$1,639
	2750	\$1,382	\$1,514	\$1,645	\$1,776	\$1,908	\$2,039
	3000	\$1,723	\$1,866	\$2,009	\$2,153	\$2,296	\$2,439
	3250	\$2,063	\$2,219	\$2,374	\$2,529	\$2,684	\$2,839

**TABLE 4. PER POUND RETURN TO MANAGEMENT
AT VARYING YIELDS AND PRICES**

		AVERAGE SALE PRICE PER POUND					
		1.75	1.80	1.85	1.90	1.95	2.00
YIELD PER ACRE	1750	\$0.01	\$0.06	\$0.11	\$0.15	\$0.20	\$0.25
	2000	\$0.18	\$0.23	\$0.28	\$0.32	\$0.37	\$0.42
	2250	\$0.31	\$0.36	\$0.41	\$0.45	\$0.50	\$0.55
	2500	\$0.42	\$0.46	\$0.51	\$0.56	\$0.61	\$0.66
	2750	\$0.50	\$0.55	\$0.60	\$0.65	\$0.69	\$0.74
	3000	\$0.57	\$0.62	\$0.67	\$0.72	\$0.77	\$0.81
	3250	\$0.63	\$0.68	\$0.73	\$0.78	\$0.83	\$0.87

TABLE 5. ESTIMATED BURLEY TOBACCO LABOR REQUIREMENTS

TASK/OPERATION	HIRED LABOR (HRS.)	OPERATOR/ FAMILY LABOR (HRS.)	TOTAL LABOR (HRS.)
<u>Pre-Harvest Labor</u>			
Transplant Production	0.0	5.0	5.0
Land Preparation	0.0	3.0	3.0
Transplanting	4.5	9.0	13.5
Cultivation & Chop Weeds Out	8.5	1.5	10.0
Spraying (for Insects, Disease, and Sucker Control)	0.0	3.5	3.5
Topping	2.0	1.0	3.0
Dropping Sticks	2.5	0.7	3.2
<u>Harvest Labor</u>			
Cutting	20.0	1.0	21.0
Load and Hauling Tobacco to Barn/Structure	8.1	2.7	10.8
Hanging Tobacco in Barn	6.8	2.3	9.1
<u>Post-Harvest Labor</u>			
Disk Ground and Sow Cover Crop	0.0	0.7	0.7
Taking Down Tobacco	3.8	1.0	4.8
Market Preparation (Stripping)	56.0	24.0	80.0
Cleaning Up, Scattering Stalks, Hauling Tobacco	1.0	10.0	11.0
Total Labor Hours Per Acre	113.2	65.4	178.6