

2001 Kentucky Blackberry Cost and Return Estimates

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Introduction

Blackberries are by no means a new crop to Kentucky. Wild blackberries have historically been widely harvested in Kentucky, with “U-Pick” and small-scale commercial production emerging in recent years. Demand for this bramble crop typically exceeds supply in much of the state, and existing producers are taking advantage of consumers’ preference for fresh, locally produced blackberries.

A survey of blackberry producers at the end of 2001 indicated that blackberry acreage could increase by as much as 25% in 2002. This will place Kentucky’s blackberry acreage at or over 100 bearing acres. Expanded variety trials through a blackberry research focus by the University of Kentucky’s New Crop Opportunities Center, better disease control information, and continued local market retail demand in Kentucky all account for this increase.

Commercial blackberry production in Kentucky offers promise for those producers willing to make the necessary capital investment toward properly establishing the crop. Well-managed blackberry plantings may produce for more than 10 years, offering significant profits after an initial four-to-five-year payback period.

Marketing is an integral part of successful blackberry production. These budgets estimate a marketing cost beyond packaging of \$0.20 per quart (10% of the price). This cost may include transportation to market, appropriate signage, special labeling, special packaging, cooperative marketing arrangements with other producers, and other relevant marketing costs. Like any other crop, producers will find that proper postharvest handling and investment in blackberry marketing will increase the potential for profitability.

In summary, the story that these budget estimates tell is this: Established blackberries are a profitable alternative crop for Kentucky producers willing to invest the time, money, and patience into producing and marketing blackberries in Kentucky.

More detailed production information for blackberries is available through the following sources:

Growing Blackberries & Raspberries in Kentucky (HO-15).

R.T. Jones, G.R. Brown, and J.G. Strang, University of Kentucky Extension Publication. <<http://www.ca.uky.edu/agc/pubs/ho/ho15.htm>>.

Brambles—Production Management and Marketing.

The Ohio State University Extension Bulletin 782-99.
<http://ohioline.ag.ohio-state.edu/b782/b782_1.html>.

Penn State Commercial Berry Production and Pest Management Guide (2000). Penn State Extension Publication AGRS-53. Ordering information available at <<http://pubs.cas.psu.edu/Pubs/agsr53.html>>.

Notes for 2001 Kentucky Blackberry Budgets

Yield and Returns

Blackberry returns are based on moderate, one-acre yield estimates for each blackberry type. *Yields may vary considerably due to production location and production practices.* The yields used in this budget are based on the following planting assumptions:

Table 1. Estimated five-year yields by variety.

Variety	Planting	Yield in Quarts				
		Year 1	Year 2	Year 3	Year 4	Year 5
Thorny	1,815 root pieces; 2'-by-12' spacing	0	0	2,000	4,000	5,000
Thornless erect	1,210 plants; 3'-by-12' spacing	0	0	2,000	4,000	5,000
Thornless semi-erect	500 plants; 8'-by-12' spacing	0	0	2,250	4,500	6,000

Blackberry returns are calculated based on a price of \$2.00 per quart.

Establishment Costs

Blackberry enterprise cash flow will be negative until the crop has matured and generates returns to cover the cost of establishing the crop. This will occur in Year 4 for each variety. There are differences in the establishment cost for each variety due to the differences in production system requirements (see following details).

Establishment costs will begin to be recovered in Year 3, with total payback occurring in Year 4 for thorny and in Year 5 for thornless erect and thornless semi-erect. This is due to higher trellising costs required for the thornless systems.

Table 2. Estimated five-year returns by variety.

Variety	Total Costs, Years 1-3 (Less Year 3 Revenue)	Return to Management Year 5	5-Year Return to Management
Thorny	\$4,778.76	\$4,905.32	\$5,374.03
Thornless erect	7,570.55	4,885.98	4,405.88
Thornless semi-erect	5,813.11	6,328.39	6,569.33

Economically speaking, the thornless semi-erect varieties offer the most potential for profits in light of the system establishment cost. This is primarily due to a less expensive

trellis system and higher yields occurring in the fruiting years. *The initial cash outlays for trickle irrigation (\$1,244 per acre) and an 8-foot-by-8-foot-by-9-foot refrigeration unit (\$3,200 to \$3,700) in Year 3 must also be considered.* Most operations considering blackberries as a cropping alternative will be able to utilize these investments for other crops to spread the fixed costs over more than one enterprise.

Preharvest Costs

The following cost assumptions were made in the preparation of the 2002 Kentucky Blackberry Production Budgets.

Soil Tests

An assay cost of \$10 per sample was assumed.

Fertilizer, Lime, and Seed

Costs are assigned using recommended rates and 2000-2001 Kentucky input costs.

Machinery and Equipment

Costs are calculated using the Iowa State machinery cost generator, adjusted to appropriate fuel costs and equipment standards for Kentucky. Time assigned to each machinery operation comes from older budgets and engineering standards for labor utilization by operation.

Hired Labor

Labor charges of \$7 per hour for unskilled labor and \$10 per hour for labor requiring licensing (e.g., spraying) or other training were assumed. Labor times were calculated combining equipment standards with horticultural production estimates for given operations.

Pesticides

Herbicide, insecticide, and fungicide costs were calculated using University of Kentucky Department of Horticulture's recommended rates and 2000-2001 Kentucky Input Prices.

Trellis

Trellising is required for semi-erect and erect blackberry varieties. A standard trellis, utilizing metal wire and wooden fence posts and brace posts, is assumed for the thornless erect varieties. Semi-erect varieties require a weaker trellis; hence the assigned costs for posts and plastic twine.

Irrigation

An establishment cost of \$1,244 for a trickle irrigation system is estimated. An arbitrary variable cost of \$15 per use is assigned; this variable cost may fluctuate greatly due to availability and cost of water.

Interest

An interest rate of 9% is assumed on preharvest variable costs. Interest expense for establishment costs is accounted for in the fixed costs (see section on fixed costs).

Harvest Costs

Containers

Containers are assumed to be one-quart, ventilated, plastic clamshell containers with absorbent padding in the bottom. A cost of \$0.11 per container, based on current retail prices, is assigned.

Refrigeration

Refrigeration is essential for berry production. An 8-foot-by-8-foot-by-9-foot cooling unit will require about \$1.19 in electricity per day of use.

Marketing

A 10% marketing charge is assumed for this system. This expense may vary depending on where and how blackberries are marketed. Producers might incur this expense through a marketing alliance, such as a co-op; or they may incur a marketing expense by advertising or maintaining a roadside stand.

Fixed Costs

Machinery and Equipment

Fixed costs for machinery and equipment are calculated using average repair and maintenance standards generated using the Iowa State standards, adjusted for Kentucky.

Irrigation

An establishment cost of \$1,244 per acre is assumed. Based solely on one acre of use, a fixed cost of \$114 per month of use is assigned to this system.

Refrigeration

Refrigeration is essential for berry production. An 8-foot-by-8-foot-by-9-foot cooling unit is assumed in these budgets, with a fixed cost depreciation value of \$682 per year. This includes annual maintenance costs for the system. All these costs are assigned to the blackberry enterprise.

Interest on Previous Years' Expense

Interest for establishment costs not yet able to be repaid is calculated at a 9% annual rate.

Land

A rental rate of \$90 per acre for the land used in blackberry production is assumed.

The 2001 Kentucky Blackberry Production Budgets are a project of the University of Kentucky's New Crop Opportunities Center. They were prepared by Matt Ernst in the UK Department of Agricultural Economics under the supervision of Tim Woods, with assistance from John Strang and Terry Jones in the Department of Horticulture. Thanks also to John Hartman, Extension Plant Pathologist, for assistance in computing fungicide spray program costs.

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Table 3. Establishment cost for one acre of thorny blackberries, Kentucky, 2001.

Soil Buildup Year	Cost per Acre
Variable costs	\$180.67
Fixed costs	24.52
Interest on land (\$1,000/acre @ 9%)	90.00
Real estate taxes (\$9/acre)	9.00
Total soil buildup year	304.20
Accrued establishment costs	304.20
Planting Year	
Variable costs	1,147.23
Fixed costs	525.27
Interest on land (\$1,000/acre @ 9%)	90.00
Real estate taxes (\$9/acre)	9.00
Interest on soil buildup year costs (@ 9%)	27.38
Total planting year	1,798.88
Accrued establishment costs through Year 2	2,103.07
First Fruiting Year	
Variable costs	3,227.73
Fixed costs	1,092.99
Interest on land (\$1,000/acre @ 9%)	90.00
Interest on accrued establishment costs (@ 9%)	161.90
Total costs, first fruiting year	4,572.61
Total revenue, first fruiting year	4,000.00
Total return, first fruiting year	(572.60)
Accrued establishment costs through Year 3	2,675.68
Total establishment cost (less Year 3 revenue)	\$4,778.76
Second Fruiting Year	
Variable costs	3,433.00
Fixed costs	1,091.80
Interest on land (\$1,000/acre @ 9%)	90.00
Interest on accrued establishment costs (@ 9%)	240.81
Total costs, second fruiting year	4,855.61
Total revenue, second fruiting year	8,000.00
Total return, second fruiting year	3,144.39
Accrued establishment costs through Year 4	(468.70)
Third Fruiting Year	
Variable costs	3,917.77
Fixed costs	1,086.91
Interest on land (\$1,000/acre @ 9%)	90.00
Total costs, third fruiting year	5,094.68
Total revenue, third fruiting year	10,000.00
Total return, third fruiting year	4,905.32
Accrued establishment costs through Year 5	(5,374.03)
Five-year return to management	5,374.03

Table 4. Soil buildup year in preparation for planting thorny blackberries, Kentucky, 2001.

Grass Seeding																
Operation	Labor			Machinery and Equipment						Materials						
	Labor (Hr)	Wage Rate	Cost per Acre	Equipment	Hours or Acres of Use	Unit Variable Cost	Total Variable Cost	Fixed Unit Cost	Total Fixed Cost	Item	Quantity/Unit	Cost per Unit	Cost per Acre	Total Variable Cost	Total Cost	Total Economic Revenue
Soil test	0.60	\$7.00	\$4.20	soil test probe	1	\$0.05	\$0.05	\$0.50	\$0.50	soil test	2 assays	\$10.00	\$20.00	\$24.25	\$24.75	—
Lime (applied)	0.20	7.00	1.40	spreader	1	0.84	0.84	1.90	1.90	lime	2 tons	12.12	24.24	26.48	28.38	—
Weed spray	0.08	10.00	0.80	sprayer	1	0.60	0.60	1.19	1.19	Roundup	2 qt	15.22	30.44	31.84	33.03	—
Chisel plow	0.16	7.00	1.12	chisel plow	1	1.85	1.85	2.44	2.44	—	—	—	—	2.97	5.40	—
Disk (2)	0.20	7.00	1.40	disk (2)	2	1.19	2.38	2.95	5.89	—	—	—	—	3.78	9.67	—
Seed grass	0.18	7.00	1.26	drain drill	1	1.64	1.64	7.73	7.73	seed	10 lb	2.00	20.00	22.90	30.63	—
Cultipack	0.10	7.00	0.70	cultipacker	1	0.49	0.49	1.08	1.08	—	—	—	—	1.19	2.27	—
Apply fertilizer	0.40	7.00	2.80	spreader	2	0.84	1.69	1.90	3.79	10-10-10	800 lb	0.07	56.00	60.49	64.28	—
Interest on variable costs (½ year)	—	—	—	—	—	—	—	—	—	—	—	6.78	6.78	6.78	6.78	—
Totals	1.92	—	13.68	—	—	7.50	9.53	—	24.52	—	—	—	157.46	180.67	205.20	\$205.20

Table 5. Planting year for one acre of thorny blackberries, Kentucky, 2001.

Spacing: 2 feet by 12 feet																
Operation	Labor			Machinery and Equipment						Materials						
	Labor (Hr)	Wage Rate	Cost per Acre	Equipment	Hours or Acres of Use	Unit Variable Cost	Total Variable Cost	Fixed Unit Cost	Total Fixed Cost	Item	Quantity/Unit	Cost per Unit	Cost per Acre	Total Variable Cost	Total Cost	Total Economic Revenue
Mar. herbicide burndown	0.80	\$10.00	\$8.00	sprayer	1	\$0.60	\$0.60	\$1.19	\$1.19	Roundup Ultra	1 qt	\$15.22	\$15.22	\$23.82	\$25.01	—
disk harrow (2)	1.20	7.00	8.40	disk	2	1.19	2.38	2.95	5.89	—	—	—	—	10.78	16.67	—
soil conditioner	0.07	7.00	0.49	soil conditioner	1	0.84	0.84	3.10	3.10	—	—	—	—	1.33	4.43	—
plant	4.00	7.00	28.00	transplanter	1	15.44	15.44	21.36	21.36	root pieces	1,815	0.15	272.25	315.69	337.04	—
—	—	—	—	tank, wagon	1	1.82	1.82	2.89	2.89	—	—	—	—	1.82	4.71	—
dragging	0.50	7.00	3.50	tractor	2	0.50	1.01	1.23	2.45	—	—	—	—	4.51	6.96	—
herbicide spray	0.80	10.00	8.00	sprayer	1	0.60	0.60	1.19	1.19	Gallery DF	1 lb	138.00	138.00	146.60	147.79	—
Apr. cultivation	1.50	7.00	10.50	cultivator	1	1.18	1.18	2.42	2.42	—	—	—	—	11.68	14.10	—
hoeing	10.00	7.00	70.00	—	—	—	—	—	—	—	—	—	—	70.00	70.00	—
irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	114.00	114.00	—	—	—	—	15.50	129.50	—
May fertilizer	1.50	7.00	10.50	spreader	1	0.84	0.84	1.90	1.90	nitrogen	50 lb	0.30	15.00	26.34	28.24	—
cultivation	1.50	7.00	10.50	cultivator	1	1.18	1.18	2.42	2.42	—	—	—	—	11.68	14.10	—
hoeing	10.00	7.00	70.00	—	—	—	—	—	—	—	—	—	—	70.00	70.00	—
irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	114.00	114.00	—	—	—	—	15.50	129.50	—
June cultivation	1.50	7.00	10.50	cultivator	1	1.18	1.18	2.42	2.42	—	—	—	—	11.68	14.10	—
hoeing	10.00	7.00	70.00	—	—	—	—	—	—	—	—	—	—	70.00	70.00	—
orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova	5 oz	0.24	1.22	7.52	9.43	—
rosette, double blossom, anthracnose spray	0.50	10.00	5.00	sprayer	2	1.30	2.59	1.91	3.82	Benlate	12 oz	1.14	13.73	21.32	25.14	—
irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	114.00	114.00	—	—	—	—	15.50	129.50	—
July insecticide	4.00	10.00	40.00	sprayer	4	1.30	5.19	1.91	7.65	Malathion	6 pt	3.43	20.60	65.79	73.43	—
—	—	—	—	—	—	—	—	—	—	Sevin	4 lb	3.70	14.80	14.80	14.80	—
cultivation	1.50	7.00	10.50	cultivator	1	1.18	1.18	2.42	2.42	—	—	—	—	11.68	14.10	—
hoeing	10.00	7.00	70.00	—	—	—	—	—	—	—	—	—	—	70.00	70.00	—
irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	114.00	114.00	—	—	—	—	15.50	129.50	—
Aug. cultivation	1.50	7.00	10.50	cultivator	1	1.18	1.18	2.42	2.42	—	—	—	—	11.68	14.10	—
hoeing	10.00	7.00	70.00	—	—	—	—	—	—	—	—	—	—	70.00	70.00	—
orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova	—	—	1.22	7.52	9.43	—
Sept. orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova	—	—	1.22	7.52	9.43	—
Interest on variable costs (½ year)	—	—	—	—	—	—	—	—	—	—	—	21.51	21.51	21.51	21.51	—
Totals	72.60	—	531.39	—	—	94.20	101.08	513.45	525.27	—	—	—	514.76	1,147.23	1,672.50	(\$1,672.50)

Table 6. Fruiting year for one acre of established thorny blackberries, Kentucky, 2001.

	Labor		Machinery and Equipment					Materials									
	Operation	Labor (Hr)	Wage Rate	Cost per Acre	Equipment	Hours or Acres of Use	Unit Variable Cost	Total Variable Cost	Fixed Unit Cost	Total Fixed Cost	Item	Quantity/Unit	Cost per Unit	Cost per Acre	Total Variable Cost	Total Cost	Total Economic Revenue
Mar.	pruning	20.00	\$7.00	\$140.00	pruner	20	\$0.25	\$5.00	\$0.50	\$10.00	—	—	—	—	\$145.00	\$155.00	—
	nitrogen	0.30	10.00	2.50	fertilizer	1	1.53	1.53	2.78	2.78	amm. nitrate	300.00 lb	0.09	27.00	31.03	33.81	—
	brush removal	4.00	7.00	28.00	wagon	1	0.60	0.60	1.19	1.19	—	—	—	—	28.60	29.79	—
	herbicide	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Princep 90DF	3.00 lb	2.09	6.27	12.56	14.48	—
Apr.	anthracnose spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	liquid lime sulfur	20.00 gal	3.20	64.00	70.30	72.21	—
	anthracnose spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Benlate 50WP	0.75 lb	18.30	13.73	20.02	21.93	—
	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	6.42	11.31	—
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—
May	anthracnose spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Benlate 50WP	0.75 lb	18.30	13.73	20.02	21.93	—
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—
	anthracnose, rosette spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Benlate 50WP	0.75 lb	18.30	13.73	20.02	21.93	—
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—
June	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	6.42	11.31	—
	hoeing	8.00	7.00	56.00	—	—	—	—	—	—	—	—	—	—	56.00	56.00	—
	anthracnose, rosette spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Benlate 50WP	0.75 lb	18.30	13.73	20.02	21.93	—
	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	6.42	11.31	—
July	irrigation	8.00	7.00	56.00	—	—	—	—	—	—	—	—	—	—	56.00	56.00	—
	insecticide	4.00	10.00	40.00	sprayer	4	1.30	5.19	1.91	7.65	Malathion	6.00 pt	3.43	20.60	65.79	73.43	—
Aug.	mowing	1.20	7.00	8.40	mower	1	2.22	2.22	4.89	4.89	Sevin	4.00 lb	3.70	14.80	14.80	14.80	—
	hoeing	8.00	7.00	56.00	—	—	—	—	—	—	—	—	—	—	56.00	56.00	—
	irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	114.00	114.00	—	—	—	—	15.50	129.50	—
	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	6.42	11.31	—
Sept.	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—
	irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	114.00	114.00	—	—	—	—	15.50	129.50	—
	fertilize cover	0.30	7.00	2.10	spreader	1	0.84	0.84	1.90	1.90	nitrogen	20.00 lb	0.30	6.00	8.94	10.84	—
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—
Interest on variable costs (½ year)				—	—	—	—	—	—	—	—	—	—	—	33.55	33.55	33.55
HARVESTING																	
Total quantity harvested = 2,000 qt @ \$2.00/qt																	\$4,000.00
Packaging—plastic clamshell containers with pad																	
Picking	100.00	7.00	700.00	—	—	—	—	—	—	—	containers	2,000 clamshells	0.11	220.00	220.00	220.00	—
Refrigeration—8'-by-8'-by-9' unit	—	—	—	—	—	—	682.00	682.00	electricity	—	—	—	—	700.00	700.00	—	
Marketing	—	—	—	—	—	—	—	—	30 days	2,000 qt	1.19	35.70	35.70	717.70	—	—	
Totals	161.80	—	1,162.30	—	—	—	83.53	—	1,092.99	—	—	—	888.91	2,134.74	3,227.73	772.27	

Table 7. Second fruiting year for one acre of established thorny blackberries, Kentucky, 2001.

Operation	Labor			Machinery and Equipment						Materials										
	Labor (Hr)	Wage Rate	Cost per Acre	Equipment	Hours or Acres of Use		Unit Variable Cost	Total Variable Cost	Fixed Unit Cost	Total Fixed Cost	Item	Quantity/ Unit	Cost per Unit	Cost per Acre	Total Variable Cost	Total Cost	Total Economic Revenue			
Feb.																				
Mar.	nitrogen pruning brush removal	0.25 20.00 0.60	\$10.00 140.00 7.00	\$2.50 4.20	fertilizer pruner	1 20	\$1.53 0.25	\$1.53 5.00	\$2.78 0.50	\$2.78 10.00	— —	amm. nitrate Prinsep 90DF	300.00 lb 3.00 lb	\$0.09 2.09	\$27.00 6.27	\$31.03 12.56	\$33.81 14.48	— —		
Apr.	herbicide anthracnose spray	0.50 0.50	10.00 10.00	5.00 5.00	sprayer	1 1	1.30 1.30	1.30 1.30	1.91 1.91	1.91 1.91	— —	liquid lime sulfur Benlate 50WP	0.75 lb 5.00 oz	18.30 0.24	13.73 1.22	20.02 7.52	21.93 9.43	— —		
May	anthracnose spray mowing orange rust spray	0.50 0.60 0.50	10.00 7.00 10.00	5.00 4.20 5.00	sprayer	1 1 1	1.30 2.22 1.30	1.30 2.22 1.30	1.91 4.89 1.91	1.91 4.89 1.91	— — —	Nova 40W Benlate 50WP	0.75 lb 5.00 oz	18.30 0.24	13.73 1.22	20.02 7.52	21.93 9.43	— —		
June	anthracnose, rosette spray mowing hoeing	0.50 0.60 8.00	10.00 7.00 7.00	5.00 4.20 56.00	sprayer	1 1 —	1.30 2.22 —	1.30 2.22 —	1.91 4.89 —	1.91 4.89 —	— — —	Benlate 50WP	0.75 lb	18.30	13.72	20.02	21.93	—		
July	mowing hoeing irrigation insecticide	1.20 8.00 0.05 4.00	10.00 7.00 0.50 10.00	12.00 56.00 0.50 40.00	mower irrigation sprayer	1 1 4	2.22 2.22 1.30	2.22 2.22 1.91	4.89 4.89 7.65	4.89 — Malathion Sevin	— — 6.00 pt 4.00 lb	— — 3.43 3.70	— — 20.60 14.80	— — 65.79 14.80	— — 73.43 14.80	— — — —	— — — —			
Aug.	mowing irrigation mowing orange rust spray	1.20 0.05 0.60 0.50	10.00 10.00 7.00 10.00	12.00 0.50 4.20 5.00	mower irrigation mower sprayer	1 1 1 1	2.22 15.00 2.22 1.30	2.22 15.00 2.22 1.30	4.89 114.00 4.89 1.91	4.89 114.00 4.89 1.91	— — — —	— — — Nova 40W	— — — 5.00 oz	— — — 0.24	— — — 1.22	— — — 7.52	— — — 9.43	— — — —		
Sept.	irrigation orange rust spray	0.05 0.50	10.00 10.00	0.50 5.00	irrigation sprayer	1 1	15.00 1.30	15.00 1.30	114.00 1.91	114.00 1.91	— —	— —	— —	— —	— —	15.50 15.50	129.50 129.50	— —		
Nov.	fertilize cover	0.30	7.00	2.10	spreader	1	0.84	0.84	1.90	1.90	nitrogen	20.00 lb	0.30	6.00	8.94	10.84	—	—		
	Interest on variable costs (½ year)			—	—	—	—	—	—	—	—	—	—	32.61	32.61	32.61	—			
HARVESTING																				
Total quantity harvested = 4,000 qt @ \$2.00/qt				—	—	—	—	—	—	—	—	—	—	—	—	—	\$8,000.00			
Packaging—plastic clamshell containers with pad				—	—	—	—	—	—	—	4,000	containers	0.11	440.00	440.00	440.00	—			
Picking 200.00 7.00 1,400.00				—	—	—	—	—	—	—	clamshells	—	—	—	1,400.00	1,400.00	—			
Refrigeration—8'-by-8'-by-9' unit				—	—	—	—	682.00	682.00	electricity	30 days	1.19	35.70	35.70	717.70	—				
Marketing — — — —				—	—	—	—	—	—	—	4,000 qt	0.20	800.00	800.00	800.00	—				
Totals		258.40	—	1,842.10	—	—	82.93	—	1,091.80	—	—	—	—	1,507.97	3,433.00	4,524.80	3,475.20			

Table 8. Third fruiting year for one acre of established thorny blackberries, Kentucky, 2001.

	Labor			Machinery and Equipment							Materials						
	Operation	Labor (Hr)	Wage Rate	Cost per Acre	Equipment	Hours or Acres of Use	Unit Variable Cost	Total Variable Cost	Fixed Unit Cost	Total Fixed Cost	Item	Quantity/Unit	Cost per Unit	Cost per Acre	Total Variable Cost	Total Cost	Total Economic Revenue
Feb.	nitrogen	0.25	\$10.00	\$2.50	fertilizer	1	\$1.53	\$1.53	\$2.78	\$2.78	amm. nitrate	300.00 lb	\$0.09	\$27.00	\$31.03	\$33.81	—
Mar.	pruning	30.00	7.00	210.00	pruner	20	0.25	5.00	0.50	10.00	—	—	—	—	215.00	225.00	—
	brush removal	0.60	7.00	4.20	—	—	—	—	—	—	—	—	—	—	4.20	4.20	—
	herbicide	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Princep 90DF	3.00 lb	2.09	6.27	12.56	14.48	—
Apr.	anthracnose spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	liquid lime	20.00 gal	3.20	64.00	70.30	72.21	—
	anthracnose spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	sulfur	0.75 lb	18.30	13.73	20.02	21.93	—
	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	Benlate 50WP	—	—	—	6.42	11.31	—
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—
May	anthracnose spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Benlate 50WP	0.75 lb	18.30	13.73	20.02	21.93	—
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—
	anthracnose,																
	rosette spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Benlate 50WP	0.75 lb	18.30	13.73	20.02	21.93	—
June	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—
	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	6.42	11.31	—
	hoeing	8.00	7.00	56.00	—	—	—	—	—	—	—	—	—	—	56.00	56.00	—
	anthracnose,																
July	rosette spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Benlate 50WP	0.75 lb	18.30	13.73	20.02	21.93	—
	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	6.42	11.31	—
	hoeing	8.00	7.00	56.00	—	—	—	—	—	—	—	—	—	—	56.00	56.00	—
	irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	171.00	114.00	—	—	—	—	15.50	129.50	—
Aug.	insecticide	4.00	10.00	40.00	sprayer	4	1.30	5.19	1.91	7.65	Sevin	4.00 lb	3.43	20.60	65.79	73.43	—
	—	—	—	—	—	—	—	—	—	—	Malathion	6.00 pt	3.70	14.80	14.80	14.80	—
	irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	171.00	114.00	—	—	—	—	30.30	144.30	—
	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	6.42	11.31	—
Sept.	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—
	fertilize cover	0.30	7.00	2.10	spreader	1	0.84	0.84	1.90	1.90	nitrogen	20.00 lb	0.30	6.00	8.94	10.84	—
	Interest on variable costs (½ year)	—	—	—	—	—	—	—	—	—	—	—	—	—	32.60	32.60	32.60
	HARVESTING																
Total quantity harvested = 5,000 qt @ \$2.00/qt				—	—	—	—	—	—	—	—	—	—	—	—	—	\$10,000.00
Packaging—plastic clamshell containers with pad				—	—	—	—	—	—	—	containers	5,000 clamshells	0.11	550.00	550.00	550.00	—
Picking 225.00 7.00 1,575.00				—	—	—	—	—	—	—	—	—	—	—	1,575.00	1,575.00	—
Refrigeration—8'-by-8'-by-9' unit				—	—	—	—	682.00	682.00	electricity	30 days	1.19	35.70	35.70	717.70	—	
Marketing				—	—	—	—	—	—	—	5,000 qt	0.20	1,000.00	1,000.00	1,000.00	—	
Totals		284.20	—	2,019.10	—	—	80.71	—	1,086.91	—	—	—	—	1,817.96	3,917.77	5,004.68	4,995.32

Table 9. Establishment cost for one acre thornless erect blackberries, Kentucky, 2001.

Soil Buildup Year	Cost per Acre
Variable costs	\$173.89
Fixed costs	24.52
Interest on land (\$1,000/acre @ 9%)	90.00
Real estate taxes (\$9/acre)	9.00
Total soil buildup year	297.42
Accrued establishment costs	297.42
Planting Year	
Variable costs	2,438.28
Fixed costs	415.00
Interest on land (\$1,000/acre @ 9%)	90.00
Real estate taxes (\$9/acre)	9.00
Interest on soil buildup year costs (@ 9%)	26.77
Total planting year	2,979.04
Accrued establishment costs through Year 2	3,276.46
First Fruiting Year	
Variable costs	2,839.73
Fixed costs	1,096.25
Interest on land (\$1,000/acre @ 9%)	90.00
Interest on accrued establishment costs (@ 9%)	268.11
Total costs, first fruiting year	4,294.09
Total revenue, first fruiting year	4,000.00
Total return, first fruiting year	(294.09)
Accrued establishment costs through Year 3	3,570.55
Total establishment cost (less Year 3 revenue)	\$7,570.55
Second Fruiting Year	
Variable costs	3,408.32
Fixed costs	1,089.88
Interest on land (\$1,000/acre @ 9%)	90.00
Interest on accrued establishment costs (@ 9%)	321.35
Total costs, second fruiting year	4,909.55
Total revenue, second fruiting year	8,000.00
Total return, second fruiting year	3,090.45
Accrued establishment costs through Year 4	480.10
Third Fruiting Year	
Variable costs	3,904.70
Fixed costs	1,086.91
Interest on land (\$1,000/acre @ 9%)	90.00
Interest on accrued establishment costs (@ 9%)	32.41
Total costs, third fruiting year	5,114.02
Total revenue, third fruiting year	10,000.00
Total return, third fruiting year	4,885.98
Accrued establishment costs through Year 5	(4,405.88)
Five-year return to management	4,405.88

Table 10. Soil buildup year in preparation for planting thornless erect blackberries, Kentucky, 2000.

Grass Seeding															
Operation	Labor			Machinery and Equipment						Materials					
	Labor (Hr)	Wage Rate	Cost per Acre	Equipment	Hours or Acres of Use	Unit Variable Cost	Total Variable Cost	Fixed Unit Cost	Total Fixed Cost	Item	Quantity/Unit	Cost per Unit	Cost per Acre	Total Variable Cost	Total Cost
Soil test	0.60	\$7.00	\$4.20	soil test probe	1	\$0.05	\$0.05	\$0.50	\$0.50	soil test	2 assays	\$10.00	\$20.00	\$24.25	\$24.75
Lime (applied)	0.20	7.00	1.40	spreader	1	0.84	0.84	1.90	1.90	lime	2 tons	12.12	24.24	26.48	28.38
Weed spray	0.08	10.00	0.80	sprayer	1	0.60	0.60	1.19	1.19	Roundup	2 qt	15.22	30.44	31.84	33.03
Chisel plow	0.16	7.00	1.12	chisel plow	1	1.85	1.85	2.44	2.44	—	—	—	—	2.97	5.40
Disk (2)	0.20	7.00	1.40	disk (2)	2	1.19	2.38	2.95	5.89	—	—	—	—	3.78	9.67
Seed grass	0.18	7.00	1.26	grain drill	1	1.64	1.64	7.73	7.73	seed	10 lb	2.00	20.00	22.90	30.63
Cultipack	0.10	7.00	0.70	cultipacker	1	0.49	0.49	1.08	1.08	—	—	—	—	1.19	2.27
Apply fertilizer	0.40	7.00	2.80	spreader	2	0.84	1.69	1.90	3.79	10-10-10	800 lb	0.07	56.00	60.49	64.28
Interest on variable costs (½ year)	—	—	—	—	—	—	—	—	—	—	—	—	6.78	6.78	6.78
Totals	1.92	—	13.68	—	—	9.53	—	24.52	—	—	—	—	157.46	173.89	205.20

Table 11. Planting year for one acre of thornless erect blackberries, Kentucky, 2000.

Spacing: 3 feet by 12 feet

Labor														Machinery and Equipment			
Operation	Labor (Hr)	Wage Rate	Cost per Acre	Equipment	Hours or Acres of Use	Unit Variable Cost	Total Variable Cost	Fixed Unit Cost	Total Fixed Cost	Item	Quantity/Unit	Cost per Unit	Cost per Acre	Total Variable Cost	Total Cost	Total Economic Revenue	
Mar.										Roundup Ultra	1 qt	\$15.22	\$15.22	\$23.82	\$25.01	—	
herbicide burndown	0.80	\$10.00	\$8.00	sprayer	1	\$0.60	\$0.60	\$1.19	\$1.19	—	—	—	—	10.78	16.67	—	
disk harrow (2)	1.20	7.00	8.40	disk soil conditioner	2	1.19	2.38	2.95	5.89	—	—	—	—	—	—	—	
soil conditioner	0.10	7.00	0.49	soil conditioner	1	0.84	0.84	3.10	3.10	blackberry plants	1,210 plants	1.20	1,452.00	1,495.44	1,516.79	—	
plant	4.00	7.00	28.00	transplanter tank, wagon	1	15.44	15.44	21.36	21.36	—	—	—	—	1.82	4.71	—	
dragging	0.50	7.00	3.50	tractor	2	1.82	1.82	2.89	2.89	—	—	—	—	4.51	6.96	—	
herbicide spray	0.80	10.00	8.00	sprayer	1	0.60	0.60	1.19	1.19	Gallery	1 lb	138.00	138.00	146.60	147.79	—	
Apr.										—	—	—	—	—	—	—	
cultivation	1.50	7.00	10.50	cultivator	1	1.18	1.18	2.42	2.42	—	—	—	—	11.68	14.10	—	
hoeing	10.00	7.00	70.00	—	—	—	—	—	—	—	—	—	—	70.00	70.00	—	
irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	85.00	85.00	—	—	—	—	15.50	100.50	—	
May										nitrogen	50 lb	0.30	15.00	26.34	28.24	—	
fertilizer	1.50	7.00	10.50	spreader	1	0.84	0.84	1.90	1.90	—	—	—	—	11.68	14.10	—	
cultivation	1.50	7.00	10.50	cultivator	1	1.18	1.18	2.42	2.42	—	—	—	—	70.00	70.00	—	
hoeing	10.00	7.00	70.00	—	—	—	—	—	—	—	—	—	—	70.00	70.00	—	
irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	85.00	85.00	—	—	—	—	15.50	100.50	—	
orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova	5 oz	0.24	1.22	7.52	9.43	—	
rosette, double blossom, anthracnose spray	0.50	10.00	5.00	sprayer	2	1.30	2.59	1.91	3.82	Benlate	12 oz	1.14	13.73	21.32	25.14	—	
June										—	—	—	—	11.68	14.10	—	
cultivation	1.50	7.00	10.50	cultivator	1	1.18	1.18	2.42	2.42	—	—	—	—	70.00	70.00	—	
hoeing	10.00	7.00	70.00	—	—	—	—	—	—	—	—	—	—	70.00	70.00	—	
orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova	5 oz	0.24	1.22	7.52	9.43	—	
rosette, double blossom, anthracnose spray	0.50	10.00	5.00	sprayer	2	1.30	2.59	1.91	3.82	Benlate	12 oz	1.14	13.73	21.32	25.14	—	
July										—	—	—	—	15.50	100.50	—	
irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	85.00	85.00	Malaithion	6 pt	3.43	20.60	65.79	73.43	—	
insecticide	4.00	10.00	40.00	sprayer	4	1.30	5.19	1.91	7.65	Sevin	4 lb	3.70	14.80	14.80	14.80	—	
cultivation	1.50	7.00	10.50	cultivator	1	1.18	1.18	2.42	2.42	—	—	—	—	11.68	14.10	—	
hoeing	10.00	7.00	70.00	—	—	—	—	—	—	—	—	—	—	70.00	70.00	—	
Aug.										—	—	—	—	15.50	100.50	—	
cultivation	1.50	7.00	10.50	cultivator	1	1.18	1.18	2.42	2.42	—	—	—	—	11.68	14.10	—	
hoeing	10.00	7.00	70.00	—	—	—	—	—	—	—	—	—	—	70.00	70.00	—	
Sept.										—	—	—	—	11.68	14.10	—	
orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova	5 oz	0.24	1.22	7.52	9.43	—	
orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova	5 oz	0.24	1.22	7.52	9.43	—	
Interest on variable costs (½ year)	—	—	—	—	—	—	—	—	—	—	—	—	103.97	103.97	103.97	—	
Totals	73.57	—	541.39	—	—	—	104.97	—	415.00	—	—	—	1,791.92	2,438.28	2,853.28	(\$2,853.28)	

Table 12. Fruiting year for one acre of established thornless erect blackberries, Kentucky, 2000.

Operation	Labor			Machinery and Equipment					Materials								
	Labor (Hr)	Wage Rate	Cost per Acre	Equipment	Hours or Acres of Use	Unit Variable Cost	Total Variable Cost	Fixed Unit Cost	Total Fixed Cost	Item	Quantity/Unit	Cost per Unit	Cost per Acre	Total Variable Cost	Total Cost	Total Economic Revenue	
Mar.	pruning	20.00	\$7.00	\$140.00	pruner	20	\$0.25	\$5.00	\$0.50	\$10.00	—	—	—	—	\$145.00	\$155.00	—
	nitrogen	0.30	10.00	2.50	fertilizer	1	1.53	1.53	2.78	2.78	amm. nitrate	300.00 lb	0.09	27.00	31.03	33.81	—
	brush removal	4.00	7.00	28.00	—	—	—	—	—	—	—	—	—	28.00	28.00	—	
	herbicide	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Princep 90DF	3.00 lb	2.09	6.27	12.56	14.48	—
Apr.	anthracnose spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	liquid lime sulfur	20.00 gal	3.20	64.00	70.30	72.21	—
	anthracnose spray	1.50	10.00	15.00	sprayer	1	1.30	1.30	1.91	1.91	Benlate 50WP	0.75 lb	18.30	13.73	30.02	31.93	—
May	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	Nova 40W	5.00 oz	0.24	1.22	7.64	12.53	—
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Benlate 50WP	0.75 lb	18.30	13.73	20.02	21.93	—
	anthracnose,																
	rosette spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Benlate 50WP	0.75 lb	18.30	13.73	20.02	21.93	—
	anthracnose,																
	rosette spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	—	—	—	—	6.30	8.21	—
June	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	6.42	11.31	—
	hoeing	8.00	7.00	56.00	—	—	—	—	—	—	—	—	—	—	56.00	56.00	—
	irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	114.00	114.00	—	—	—	—	15.50	129.50	—
	topping	5.00	7.00	35.00	—	—	—	—	—	—	—	—	—	—	35.00	35.00	—
July	insecticide	4.00	7.00	28.00	sprayer	4	1.30	5.19	1.91	7.65	Sevin	4.00 lb	3.43	20.60	53.79	61.43	—
	—	—	—	—	—	—	—	—	—	Malathion	6.00 pt	3.70	14.80	14.80	14.80	—	
Aug.	mowing	1.20	7.00	8.40	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	10.62	15.51	—
	hoeing	8.00	7.00	56.00	—	—	—	—	—	—	—	—	—	—	56.00	56.00	—
	irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	114.00	114.00	—	—	—	—	15.50	129.50	—
	topping	5.00	7.00	35.00	—	—	—	—	—	—	—	—	—	—	35.00	35.00	—
Sept.	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	6.42	11.31	—
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—
	irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	114.00	114.00	—	—	—	—	15.50	129.50	—
	fertilize cover	0.30	7.00	2.10	spreader	1	0.84	0.84	1.90	1.90	nitrogen	20.00 lb	0.30	6.00	8.94	10.84	—
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—
	Interest on variable costs (½ year)	—	—	—	—	—	—	—	—	—	—	—	—	63.91	63.91	63.91	—
HARVESTING																	
Total quantity harvested = 2,000 qt @ \$2.00/qt																	\$4,000.00
Packaging—plastic clamshell containers with pad																	
Picking 100.00 7.00 700.00 — — — — — — — — — — — — — —																	220.00
Refrigeration—8'-by-8'-by-9' unit — — — — 682.00 682.00 — — — — — — — — — —																	700.00
Marketing — — — — — — — — — — — — — — — — 30 days 1.19 35.70 35.70 — —																	717.70
— — — — — — — — — — — — — — — — 2,000 qt 0.20 400.00 400.00 — —																	400.00
Totals 192.80 — 1,370.30 — — 77.08 85.72 1,081.02 1,096.25 — — — — 1,383.71 2,839.73 3,935.98 64.02																	

Table 13. Second fruiting year for one acre of established thornless erect blackberries, Kentucky, 2000.

		Labor		Machinery and Equipment				Materials									
Operation		Labor (Hr)	Wage Rate	Cost per Acre	Equipment	Hours or Acres of Use	Unit Variable Cost	Total Variable Cost	Fixed Unit Cost	Total Fixed Cost	Quantity/Unit Item	Cost per Unit	Cost per Acre	Total Variable Cost	Total Cost	Total Economic Revenue	
Feb.	nitrogen	0.25	\$10.00	\$2.50	fertilizer	1	\$1.53	\$1.53	\$2.78	\$2.78	amm. nitrate	300.00 lb	\$0.09	\$27.00	\$31.03	\$33.81	
Mar.	pruning	20.00	7.00	140.00	pruner	20	0.25	5.00	0.50	10.00	—	—	—	—	145.00	155.00	
	brush removal	0.60	7.00	4.20	—	—	—	—	—	—	—	—	—	4.20	4.20	—	
	herbicide	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Princep 90DF	3.00 lb	2.09	6.27	12.56	14.48	—
Apr.	anthracnose spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	liquid lime sulfur	20.00 gal	3.20	64.00	70.30	72.21	—
	anthracnose spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Benlate 50WP	0.75 lb	18.30	13.73	20.02	21.93	—
	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	6.42	11.31	—	
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—
May	anthracnose, rosette spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Benlate 50WP	0.75 lb	18.30	13.73	20.02	21.93	—
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—
	anthracnose, rosette spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Benlate 50WP	0.75 lb	18.30	13.73	20.02	21.93	—
	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	6.42	11.31	—	
June	hoeing	8.00	7.00	56.00	—	—	—	—	—	—	—	—	—	56.00	56.00	—	
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—
	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	6.42	11.31	—	
	hoeing	8.00	7.00	56.00	—	—	—	—	—	—	—	—	—	56.00	56.00	—	
	irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	114.00	114.00	—	—	—	—	15.50	129.50	—
July	insecticide	4.00	10.00	40.00	sprayer	4	1.30	5.19	1.91	7.65	Malathion Sevin	6.00 pt 4.00 lb	3.43 3.70	20.60 14.80	65.79 14.80	73.43 14.80	—
	brush removal, mowing	1.20	7.00	8.40	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	10.62	15.51	—
	hoeing	8.00	7.00	56.00	—	—	—	—	—	—	—	—	—	56.00	56.00	—	
Aug.	irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	114.00	114.00	—	—	—	—	15.50	129.50	—
	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	6.42	11.31	—	
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—
	irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	114.00	114.00	—	—	—	—	15.50	129.50	—
Sept.	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—
Nov.	fertilize cover	0.30	7.00	2.10	spreader	1	0.84	0.84	1.90	1.90	nitrogen	20.00 lb	0.30	6.00	8.94	10.84	—
	Interest on variable costs (½ year)	—	—	—	—	—	—	—	—	—	—	—	—	31.55	31.55	31.55	—
HARVESTING																	
	Total quantity harvested = 4,000 qt @ \$2.00/qt	—	—	—	—	—	—	—	—	—	—	—	—	—	—	\$8,000.00	
	Packaging—plastic clamshell containers with pad	—	—	—	—	—	—	—	—	—	4,000 containers	clamshells	0.11	440.00	440.00	440.00	—
	Picking 200.00 7.00 1,400.00	—	—	—	—	—	—	—	—	—	—	—	—	1,400.00	1,400.00	—	
	Refrigeration—8'-by-8'-by-9' unit	—	—	—	—	—	—	682.00	682.00	electricity	30 days	1.19	35.70	35.70	717.70	—	
	Marketing	—	—	—	—	—	—	—	—	—	4,000 qt	0.20	800.00	800.00	800.00	—	
	Totals	257.90	—	1,833.50	—	—	81.64	—	1,089.88	—	—	—	—	1,493.18	3,408.32	4,498.20	3,501.80

Table 14. Third fruiting year for establishing one acre of thornless erect blackberries, Kentucky, 2000.

Operation	Labor			Machinery and Equipment						Materials								
	Labor (Hr)	Wage Rate	Cost per Acre	Equipment	Hours or Acres of Use	Unit Variable Cost	Total Variable Cost	Fixed Unit Cost	Total Fixed Cost	Item	Quantity/ Unit	Cost per Unit	Cost per Acre	Total Variable Cost	Total Cost	Total Economic Revenue		
Feb. nitrogen	0.25	\$10.00	\$2.50	fertilizer	1	\$1.53	\$1.53	\$2.78	\$2.78	amm. nitrate	300.00 lb	\$0.09	\$27.00	\$31.03	\$33.81	—		
Mar. pruning	30.00	7.00	210.00	pruner	20	0.25	5.00	0.50	10.00	—	—	—	—	215.00	225.00	—		
brush removal	0.60	7.00	4.20	—	—	—	—	—	—	—	—	—	—	4.20	4.20	—		
herbicide	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Princep 90DF	3.00 lb	2.09	6.27	12.56	14.48	—		
Apr.	anthracnose spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	liquid lime	20.00 gal	3.20	64.00	70.30	72.21	—	
	anthracnose spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	sulfur Benlate	50WP	0.75 lb	18.30	13.73	20.02	21.93	—
May	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	6.42	11.31	—	
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—	
June	anthracnose, rosette spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Benlate	50WP	0.75 lb	18.30	13.73	20.02	21.93	—
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—	
July	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	6.42	11.31	—	
	hoeing	8.00	7.00	56.00	—	—	—	—	—	—	—	—	—	—	56.00	56.00	—	
Aug.	irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	114.00	114.00	—	—	—	—	15.50	129.50	—	
	insecticide	4.00	10.00	40.00	sprayer	4	1.30	5.19	1.91	7.65	Malathion	6.00 pt	3.43	20.60	65.79	73.43	—	
Sept.	irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	114.00	114.00	Sevin	4.00 lb	3.70	14.80	14.80	14.80	—	
	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	6.42	11.31	—	
Nov.	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—	
	fertilize cover	0.30	7.00	2.10	spreader	1	0.84	0.84	1.90	1.90	nitrogen	20.00 lb	0.30	6.00	8.94	10.84	—	
Interest on variable costs (½ year)				—	—	—	—	—	—	—	—	—	—	32.04	32.04	32.04	—	
HARVESTING																		
Total quantity harvested = 5,000 qt @ \$2.00/qt																\$10,000.00		
Packaging—plastic clamshell containers with pad																		
Picking	225.00	7.00	1,575.00	—	—	—	—	—	—	containers	5,000 clamshells	0.11	550.00	550.00	550.00	—		
Refrigeration—8'-by- 8'-by-9' unit	—	—	—	—	—	—	682.00	682.00	electricity	30 days	—	—	—	1,575.00	1,575.00	—		
Marketing	—	—	—	—	—	—	—	—	—	5,000 qt	0.20	1,000.00	1,000.00	1,000.00	1,000.00	—		
Totals	284.20	—	2,019.10	—	—	—	80.71	—	1,087.00	—	—	—	1,804.89	3,904.70	4,991.61	5,008.40		

Table 15. Establishment cost for one acre thornless semi-erect blackberries, Kentucky, 2001.

Soil Buildup Year	Cost per Acre
Variable costs	\$180.67
Fixed costs	24.52
Interest on land (\$1,000/acre @ 9%)	90.00
Real estate taxes (\$9/acre)	9.00
Total soil buildup year	304.20
Accrued establishment costs	304.20
Planting Year	
Variable costs	1,547.94
Fixed costs	415.00
Interest on land (\$1,000/acre @ 9%)	90.00
Real estate taxes (\$9/acre)	9.00
Interest on soil buildup year costs (@ 9%)	27.38
Total planting year	2,089.31
Accrued establishment costs through Year 2	2,393.51
First Fruiting Year	
Variable costs	4,249.84
Fixed costs	1,096.25
Interest on land (\$1,000/acre @9%)	90.00
Interest on accrued establishment costs (@ 9%)	188.04
Total costs, first fruiting year	5,526.09
Total revenue, first fruiting year	4,500.00
Total return, first fruiting year	(1,026.09)
Accrued establishment costs through Year 3	3,419.60
Total establishment cost (less Year 3 revenue)	\$5,813.11
Second Fruiting Year	
Variable costs	3,849.90
Fixed costs	1,091.80
Interest on land (\$1,000/acre @9%)	90.00
Interest on accrued establishment costs (@ 9%)	307.76
Total costs, second fruiting year	5,339.46
Total revenue, second fruiting year	9,000.00
Total return, second fruiting year	3,660.54
Accrued establishment costs through Year 4	(240.94)
Third Fruiting Year	
Variable costs	4,494.70
Fixed costs	1,086.91
Interest on land (\$1,000/acre @9%)	90.00
Total costs, third fruiting year	5,671.61
Total revenue, third fruiting year	12,000.00
Total return, third fruiting year	6,328.39
Accrued establishment costs through Year 5	(6,569.33)
Five-year return to management	6,569.33

Table 16. Soil buildup year in preparation for planting thornless semi-erect blackberries, Kentucky, 2000.

Grass Seeding

Labor				Machinery and Equipment						Materials						
Operation	Labor (Hr)	Wage Rate	Cost per Acre	Equipment	Hours or Acres of Use	Unit Variable Cost	Total Variable Cost	Fixed Unit Cost	Total Fixed Cost	Item	Quantity/Unit	Cost per Unit	Cost per Acre	Total Variable Cost	Total Cost	Total Economic Revenue
Soil test	0.60	\$7.00	\$4.20	soil test probe	1	\$0.05	\$0.05	\$0.50	\$0.50	soil test	2 assays	\$10.00	\$20.00	\$24.25	\$24.75	—
Lime (applied)	0.20	7.00	1.40	spreader	1	0.84	0.84	1.90	1.90	lime	2 tons	12.12	24.24	26.48	28.38	—
Weed spray	0.08	10.00	0.80	sprayer	1	0.60	0.60	1.19	1.19	Roundup	2 qt	15.22	30.44	31.84	33.03	—
Chisel plow	0.16	7.00	1.12	chisel plow	1	1.85	1.85	2.44	2.44	—	—	—	—	2.97	5.40	—
Disk (2)	0.20	7.00	1.40	disk (2)	2	1.19	2.38	2.95	5.89	—	—	—	—	3.78	9.67	—
Seed grass	0.18	7.00	1.26	grain drill	1	1.64	1.64	7.73	7.73	seed	10 lb	2.00	20.00	22.90	30.63	—
Cultipack	0.10	7.00	0.70	cultipacker	1	0.49	0.49	1.08	1.08	—	—	—	—	1.19	2.27	—
Apply fertilizer	0.40	7.00	2.80	spreader	2	0.84	1.69	1.90	3.79	10-10-10	800 lb	0.07	56.00	60.49	64.28	—
Interest on variable costs (½ year)	—	—	—	—	—	—	—	—	—	—	—	—	—	6.78	6.78	6.78
Totals	1.92	—	13.68	—	—	—	9.53	—	24.52	—	—	—	—	157.46	180.67	205.20
																(\$205.20)

Table 17. Planting year for one acre of thornless semi-erect blackberries, Kentucky, 2000.

Spacing: 8 feet by 12 feet

Labor				Machinery and Equipment						Materials							
Operation	Labor (Hr)	Wage Rate	Cost per Acre	Equipment	Hours or Acres of Use	Unit Variable Cost	Total Variable Cost	Fixed Unit Cost	Total Fixed Cost	Item	Quantity/Unit	Cost per Unit	Cost per Acre	Total Variable Cost	Total Cost	Total Economic Revenue	
Mar.	herbicide burndown	0.80	\$10.00	\$8.00	sprayer	1	\$0.60	\$0.60	\$1.19	\$1.19	Roundup Ultra	1 qt	\$15.22	\$15.22	\$23.82	\$25.01	—
	disk harrow (2)	1.20	7.00	8.40	disk	2	1.19	2.38	2.95	5.89	—	—	—	10.78	16.67	—	
	soil conditioner	0.07	7.00	0.49	soil conditioner	1	0.84	0.84	3.10	3.10	—	—	—	—	1.33	4.43	—
	plant	4.00	7.00	28.00	transplanter	1	15.44	15.44	21.36	21.36	blackberry plants	500 plants	1.20	600.00	643.44	664.79	—
	—	—	—	tank, wagon	1	1.82	1.82	2.89	2.89	—	—	—	—	1.82	4.71	—	
	dragging	0.50	7.00	3.50	tractor	2	0.50	1.01	1.23	2.45	—	—	—	—	4.51	6.96	—
Apr.	herbicide spray	0.80	10.00	8.00	sprayer	1	0.60	0.60	1.19	1.19	Gallery	1 lb	138.00	138.00	146.60	147.79	—
	cultivation	1.50	7.00	10.50	cultivator	1	1.18	1.18	2.42	2.42	—	—	—	—	11.68	14.10	—
	hoeing	10.00	7.00	70.00	—	—	—	—	—	—	—	—	—	70.00	70.00	—	
May	irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	85.00	85.00	—	—	—	—	15.50	100.50	—
	fertilizer	1.50	7.00	10.50	spreader	1	0.84	0.84	1.90	1.90	nitrogen	50 lb	0.30	15.00	26.34	28.24	—
	cultivation	1.50	7.00	10.50	cultivator	1	1.18	1.18	2.42	2.42	—	—	—	—	11.68	14.10	—
	hoeing	10.00	7.00	70.00	—	—	—	—	—	—	—	—	—	70.00	70.00	—	
	irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	85.00	85.00	—	—	—	—	15.50	100.50	—
	orange rust	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova	5 oz	0.24	1.22	7.52	9.43	—
June	rosette, double blossom, anthracnose spray	0.50	10.00	5.00	sprayer	2	1.30	2.59	1.91	3.82	Benlate	12 oz	1.14	13.73	21.32	25.14	—
	cultivation	1.50	7.00	10.50	cultivator	1	1.18	1.18	2.42	2.42	—	—	—	—	11.68	14.10	—
	hoeing	10.00	7.00	70.00	—	—	—	—	—	—	—	—	—	70.00	70.00	—	
	orange rust	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova	5 oz	0.24	1.22	7.52	9.43	—
	rosette, double blossom, anthracnose spray	0.50	10.00	5.00	sprayer	2	1.30	2.59	1.91	3.82	Benlate	12 oz	1.14	13.73	21.32	25.14	—
July	irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	85.00	85.00	—	—	—	—	15.50	100.50	—
	insecticide	4.00	10.00	40.00	sprayer	4	1.30	5.19	1.91	7.65	Malathion	6 pt	3.43	20.60	65.79	73.43	—
	—	—	—	—	—	—	—	—	—	Sevin	4 lb	3.70	14.80	14.80	14.80	—	
	cultivation	1.50	7.00	10.50	cultivator	1	1.18	1.18	2.42	2.42	—	—	—	—	11.68	14.10	—
	hoeing	10.00	7.00	70.00	—	—	—	—	—	—	—	—	—	70.00	70.00	—	
Aug.	irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	85.00	85.00	—	—	—	—	15.50	100.50	—
	cultivation	1.50	7.00	10.50	cultivator	1	1.18	1.18	2.42	2.42	—	—	—	—	11.68	14.10	—
	orange rust	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova	5 oz	0.24	1.22	7.52	9.43	—
	hoeing	10.00	7.00	70.00	—	—	—	—	—	—	—	—	—	70.00	70.00	—	
Sept.	orange rust	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova	5 oz	0.24	1.22	7.52	9.43	—
	Interest on variable costs (½ year)	—	—	—	—	—	—	—	—	—	—	—	—	65.63	65.63	65.63	—
Totals	73.57	—	541.39	—	—	96.79	104.97	401.27	415.00	—	—	—	—	901.58	1,547.94	1,962.94	(\$1,962.94)

Table 18. Fruiting year for one acre of established thornless semi-erect blackberries, Kentucky, 2000.

	Labor			Machinery and Equipment						Materials							
	Operation	Labor (Hr)	Wage Rate	Cost per Acre	Equipment	Hours or Acres of Use	Unit Variable Cost	Total Variable Cost	Fixed Unit Cost	Total Fixed Cost	Item	Quantity/Unit	Cost per Unit	Cost per Acre	Total Variable Cost	Total Cost	
Mar.	pruning	20.00	\$7.00	\$140.00	pruner	20	\$0.25	\$5.00	\$0.50	\$10.00	—	—	—	\$145.00	\$155.00		
	nitrogen	0.30	10.00	2.50	fertilizer	1	1.53	1.53	2.78	2.78	amm. nitrate	300.00 lb	0.09	27.00	31.03	33.81	
	brush removal	4.00	7.00	28.00	—	—	—	—	—	—	—	—	—	—	28.00	28.00	
	herbicide	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Princep 90DF	3.00 lb	2.09	6.27	12.56	14.48	
Apr.	liquid lime sulfur	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	liquid lime sulfur	20.00 gal	3.20	64.00	70.30	72.21	
	anthracnose spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Benlate 50WP	0.75 lb	18.30	13.73	20.02	21.93	
	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	6.42	11.31	
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	
May	anthracnose, rosette spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Benlate 50WP	0.75 lb	18.30	13.73	20.02	21.93	
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	
	anthracnose, rosette spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Benlate 50WP	0.75 lb	18.30	13.73	20.02	21.93	
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	
	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	6.42	11.31	
	hoeing	8.00	7.00	56.00	—	—	—	—	—	—	—	—	—	—	56.00	56.00	
	trellising	67.00	7.00	469.00	post-hole digger	1	2.79	2.79	4.46	4.46	wooden fence posts	8,700 ft 11-gauge wire	182 posts	6.00	1,092.00	1,563.79	1,568.25
June	orange rust spray	—	—	—	—	—	—	—	—	—	34 rolls	7.80	265.20	265.20	265.20		
	mowing	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	
	hoeing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	6.42	11.31	
	irrigation	8.00	7.00	56.00	—	—	—	—	—	—	—	—	—	—	56.00	56.00	
July	insecticide	0.05	10.00	0.50	irrigation	1	15.00	15.00	114.00	114.00	—	—	—	—	15.50	129.50	
	mowing	4.00	10.00	40.00	sprayer	4	1.30	5.19	1.91	7.65	Malathion	6.00 pt	3.43	20.60	65.79	73.43	
	hoeing	—	—	—	—	—	—	—	—	—	Sevin	4.00 lb	3.70	14.80	14.80	14.80	
	irrigation	1.20	7.00	8.40	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	10.62	15.51	
	mowing	8.00	7.00	56.00	—	—	—	—	—	—	—	—	—	—	56.00	56.00	
Aug.	irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	114.00	114.00	—	—	—	—	15.50	129.50	
	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	6.42	11.31	
	irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	114.00	114.00	—	—	—	—	15.50	129.50	
Sept.	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	
	fertilize cover	0.30	7.00	2.10	spreader	1	0.84	0.84	1.90	1.90	nitrogen	20.00 lb	0.30	6.00	8.94	10.84	
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	
	Interest on variable costs (½ year)	—	—	—	—	—	—	—	—	—	—	—	—	115.26	115.26	115.26	
Harvesting																	
	Total quantity harvested = 2,250 qt																
	Packaging—plastic clamshell containers with pad																
	Picking 120.00 7.00 840.00	—	—	—	—	—	—	—	—	—	containers	2,250 clamshells	0.11	247.50	247.50	247.50	
	Refrigeration—8'-by-8'-by-9' unit	—	—	—	—	—	—	682.00	682.00	682.00	electricity	30 days	1.19	35.70	35.70	717.70	
	Marketing —	—	—	—	—	—	—	—	—	—	—	2,250 qt	0.20	450.00	450.00	450.00	
	Totals	248.80	—	1,771.30	—	—	85.72	—	1,096.25	—	—	—	—	2,392.82	4,249.84	5,346.09	

Table 19. Second fruiting year for establishing one acre of thornless semi-erect blackberries, Kentucky, 2000.

		Labor		Machinery and Equipment					Materials									
Operation		Labor (Hr)	Wage Rate	Cost per Acre	Equipment	Hours or Acres of Use	Unit Variable Cost	Total Variable Cost	Fixed Unit Cost	Total Fixed Cost	Item	Quantity/Unit	Cost per Unit	Cost per Acre	Total Variable Cost	Total Cost	Total Economic Revenue	
Feb.	nitrogen	0.25	\$10.00	\$2.50	fertilizer	1	\$1.53	\$1.53	\$2.78	\$2.78	amm. nitrate	300.0 lb	\$0.09	\$27.00	\$31.03	\$33.81	—	
Mar.	pruning	20.00	7.00	140.00	pruner	20	0.25	5.00	0.50	10.00	—	—	—	—	145.00	155.00	—	
	brush removal	0.60	7.00	4.20	—	—	—	—	—	—	—	—	—	—	4.20	4.20	—	
	herbicide	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Princep 90DF	3.00 lb	2.09	6.27	12.56	14.48	—	
Apr.	anthracnose spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Liquid lime sulfur	20.00 gal	3.20	64.00	70.30	72.21	—	
	anthracnose spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Benlate 50WP	0.75 lb	18.30	13.73	20.02	21.93	—	
	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	6.42	11.31	—	
May	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—	
	anthracnose, rosette spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Benlate 50WP	0.75 lb	18.30	13.73	20.02	21.93	—	
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—	
	anthracnose, rosette spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Benlate 50WP	0.75 lb	18.30	13.73	20.02	21.93	—	
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	—	—	—	6.30	8.21	—	
	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	6.42	11.31	—	
June	hoeing	8.00	7.00	56.00	—	—	—	—	—	—	—	—	—	—	56.00	56.00	—	
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—	
	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	6.42	11.31	—	
	hoeing	8.00	7.00	56.00	—	—	—	—	—	—	—	—	—	—	56.00	56.00	—	
July	irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	114.00	114.00	—	—	—	—	—	15.50	129.50	—
	insecticide	4.00	10.00	40.00	sprayer	4	1.30	5.19	1.91	7.65	Malathion	6.00 pt	3.43	20.60	65.79	73.43	—	
	brush removal, mowing	1.20	7.00	8.40	mower	1	2.22	2.22	4.89	4.89	Sevin	4.00 lb	3.70	14.80	25.42	30.31	—	
	hoeing	8.00	7.00	56.00	—	—	—	—	—	—	—	—	—	—	56.00	56.00	—	
Aug.	irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	114.00	114.00	—	—	—	—	—	15.50	129.50	—
	mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	6.42	11.31	—	
	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—	
Sept.	irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	114.00	114.00	—	—	—	—	15.50	129.50	—	
Nov.	orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—	
	fertilize cover	0.30	7.00	2.10	spreader	1	0.84	0.84	1.90	1.90	nitrogen	20.00 lb	0.30	6.00	8.94	10.84	—	
	Interest on variable costs (½ year)	—	—	—	—	—	—	—	—	—	—	—	—	—	31.83	31.83	31.83	
Harvesting																		
	Total quantity harvested = 4,500 qt @ \$2.00/qt	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	\$9,000.00	
	Packaging—plastic clamshell containers with pad	—	—	—	—	—	—	—	—	—	containers	4,500 clamshells	0.11	495.00	495.00	495.00	—	
	Picking 240.00 7.00 1,680.00	—	—	—	—	—	—	—	—	—	—	—	—	—	1,680.00	1,680.00	—	
	Refrigeration—8'-by-8'-by-9' unit	—	—	—	—	—	682.00	682.00	electricity	30 days	1.19	35.70	35.70	717.70	—	—	—	
	Marketing	—	—	—	—	—	—	—	—	4,500 qt	0.20	900.00	900.00	900.00	—	—	—	
	Totals	298.40	—	2,118.50	—	—	82.93	—	1,091.80	—	—	—	748.47	3,849.90	4,941.70	4,058.30		

Table 20. Third fruiting year for establishing one acre of thornless semi-erect blackberries, Kentucky, 2000.

Operation	Labor			Machinery and Equipment						Materials							
	Labor (Hr)	Wage Rate	Cost per Acre	Equipment	Hours or Acres of Use	Unit Variable Cost	Total Variable Cost	Fixed Unit Cost	Total Fixed Cost	Item	Quantity/ Unit	Cost per Unit	Cost per Acre	Total Variable Cost	Total Cost	Total Economic Revenue	
Feb. nitrogen	0.25	\$10.00	\$2.50	fertilizer	1	\$1.53	\$1.53	\$2.78	\$2.78	amm. nitrate	300.0 lb	\$0.09	\$27.00	\$31.03	\$33.81	—	
Mar. pruning	30.00	7.00	210.00	pruner	20	0.25	5.00	0.50	10.00	—	—	—	—	215.00	225.00	—	
brush removal	0.60	7.00	4.20	—	—	—	—	—	—	—	—	—	—	4.20	4.20	—	
herbicide	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Princep 90DF liquid lime	3.00 lb	2.09	6.27	12.56	14.48	—	
Apr. anthracnose spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	sulfur Benlate	20.00 gal	3.20	64.00	70.30	72.21	—	
anthracnose spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	50WP	0.75 lb	18.30	13.73	20.02	21.93	—	
mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	6.42	11.31	—	
orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—	
anthracnose, rosette spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Benlate 50WP	0.75 lb	18.30	13.73	20.02	21.93	—	
orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—	
anthracnose, rosette spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Benlate	—	—	—	—	6.42	11.31	—
orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—	
mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	6.42	11.31	—	
hoeing	8.00	7.00	56.00	—	—	—	—	—	—	—	—	—	—	56.00	56.00	—	
June orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—	
mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	6.42	11.31	—	
hoeing	8.00	7.00	56.00	—	—	—	—	—	—	—	—	—	—	56.00	56.00	—	
irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	114.00	114.00	—	—	—	—	15.50	129.50	—	
July insecticide	4.00	10.00	40.00	sprayer	4	1.30	5.19	1.91	7.65	Malathion	6.00 pt	3.43	20.60	65.79	73.43	—	
—	—	—	—	—	—	—	—	—	—	Sevin	4.00 lb	3.70	14.80	14.80	14.80	—	
irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	114.00	114.00	—	—	—	—	15.50	129.50	—	
Aug. mowing	0.60	7.00	4.20	mower	1	2.22	2.22	4.89	4.89	—	—	—	—	6.42	11.31	—	
orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—	
irrigation	0.05	10.00	0.50	irrigation	1	15.00	15.00	114.00	114.00	—	—	—	—	15.50	129.50	—	
Sept. orange rust spray	0.50	10.00	5.00	sprayer	1	1.30	1.30	1.91	1.91	Nova 40W	5.00 oz	0.24	1.22	7.52	9.43	—	
Nov. fertilize cover	0.30	7.00	2.10	spreader	1	0.84	0.84	1.90	1.90	nitrogen	20.00 lb	0.30	6.00	8.94	10.84	—	
Interest on variable costs (½ year)	—	—	—	—	—	—	—	—	—	—	—	—	32.04	32.04	32.04	—	
HARVESTING																	
Total quantity harvested = 6,000 qt @ \$2.00/qt	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	\$12,000.00	
Packaging—plastic clamshell containers with pad	—	—	—	—	—	—	—	—	—	containers	6,000 clamshells	0.11	660.00	660.00	660.00	—	
Picking	265.00	7.00	1,855.00	—	—	—	—	—	—	—	—	—	—	1,855.00	1,855.00	—	
Refrigeration—8' by 8' by 9' unit	—	—	—	—	—	—	682.00	682.00	electricity	30 days	1.19	35.70	35.70	717.70	—	—	
Marketing	—	—	—	—	—	—	—	—	—	6,000 qt	0.20	1,200.00	1,200.00	1,200.00	1,200.00	—	
Totals	324.20	—	2,299.10	—	—	80.71	—	1,086.91	—	—	—	2,114.89	4,494.70	5,581.61	6,418.39		

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