

SRSFC Sponsored Blackberry County Extension Agent Training

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Enterprise Budgets

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EXCEL Program: *Cost of Producing, Harvesting and Marketing Blackberries in the Southeastern United States*

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A. Protected Cells

1. Protected Cells

- i. Each worksheet is password protected
- ii. Users cannot change any value, formula or text in any Protected Cell.
 - a. Prevents user from corrupting the budget program
 - b. Enhances the security of the budget program

2. Unprotected Cells

- i. Unprotected Cells are highlighted in light blue
- ii. Values in the “blue cells” are values that the user can either accept or replace with their own estimates.
- iii. Any change made to any “blue cell” will automatically cause the cost estimates in the budget to change.

B. Budget Handout Section (First 10 EXCEL Worksheets – purple tabs)

These worksheets were developed to aid specialists and agents prepare blackberry budget handouts to support their Extension meetings and programs.

1. *HO Cover* Worksheet

- i. General information about the budget
- ii. Lists typical caveats, e.g.
 - a. Budgets are only guides
 - b. Every grower should develop their own budget/cost estimates
 - c. Develop a market first, etc
- iii. Spray schedule
 - a. Mention of product names does not constitute a guarantee or warranty
 - b. SRSFC web site for the spray schedule
- iv. Contents of Budget Handout (if all of the worksheets are printed)

2. *HO Assumptions* Worksheet

- i. Presents the values of “key” factors, e.g. yields, blackberry prices, fuel and labor costs, etc., which were used to develop the budget.

- ii. Allows the user to quickly change these “key” input values to either reflect current market conditions or local situations.
- iii. These “key” values were selected because the values change frequently, e.g. fuel prices; vary from region to region, e.g. labor costs and blackberry prices; or vary from grower to grower, e.g. yield and cull rates.
- iv. These values are also the factors growers typically ask about when a new budget is presented to them.
- v. Users also have the option of making more detailed changes to the budget by inputting their own estimates into the Equipment, Materials, Labor and Production Cost worksheets in the Budget Program Section.
- vi. The user can also record the date the budget was updated and either who updated the budget or the grower for whom the budget was developed.

3. *HO Prep Worksheet*

- i. Presents monthly equipment, material, and labor cost estimates by operation for those activities associated with preparing the site for planting.
- ii. More detailed input and cost information is presented in the Prep Worksheet in the Budget Program Section.

4. *HO Year 1 Worksheet*

- i. Presents monthly equipment, material, and labor cost estimates by operation for the first year of production when the blackberries are planted.
- ii. More detailed input and cost information is presented in the Year 1 Worksheet in the Budget Program Section.

5. *HO Year 2 Worksheet*

- i. Presents monthly equipment, material, and labor cost estimates by operation for the second year of production when blackberries are first harvested.
- ii. The marketable yield is shown in both pounds and number of flats at the top of the worksheet. These values are also updated automatically when the total yield and percentage of marketable berries are changed in the HO Assumptions worksheet.
- iii. More detailed input and cost information is presented in the Year 2 Worksheet in the Budget Program Section.

6. *HO Year 3 Worksheet*

- i. Presents monthly equipment, material, and labor cost estimates by operation for the third through tenth year of production assuming a full harvest in each year.
- ii. The marketable yield is shown in both pounds and number of flats at the top of the worksheet.
- iii. More detailed input and cost information is presented in the Year 3 Worksheet in the Budget Program Section.

7. *HO Summary Worksheet*

- i. Summarizes the monthly and annual equipment, material, and labor cost estimates.
- ii. Total monthly cost estimates typically used for monthly cash flow estimates.
- iii. Has a column for growers to write in their own cost estimates.

8. *HO Labor Worksheet*

- i. Summarizes the monthly labor requirements needed for blackberry production.
- ii. These labor estimates do not include harvest labor because it was assumed that the pickers would be paid on a piece-rate basis.
- iii. Has a column for growers to write in their own cost estimates.

9. *HO Returns Worksheet*

- i. Presents several sensitivity analyses.
 - a. Estimated returns per acre for varying yields and wholesale prices **per flat**
 - b. Estimated returns per acre for varying yields and wholesale prices **per pound**
 - c. Estimated costs, gross revenues and net returns for varying yields and wholesale prices **per flat**
 - d. Estimated costs, gross revenues and net returns for varying yields and wholesale prices **per pound**
- ii. The degree of variation in yields and prices can be changed in the Sensitivity Analysis Worksheet in the Budget Program Section.

10. *HO Invest Worksheet*

- i. Presents an investment analysis for the 10 year production cycle.
 - a. Total accumulated cash flow over the 10 year period
 - b. Payback period
 - c. Net present value
- ii. Adjustments:
 - a. Check the payback period, i.e. the year in which the accumulated cash flow changes from a negative number to a positive number. If the changes made in the budget result in a change in the payback year, enter the new year in the “blue cell”.
 - b. The discount rate factors can be changed in the Investment Analysis Worksheet in the Budget Program Section.
- iii. Footnotes:
 - a. Footnote 2: Lists the equipment purchased in the second year and how the costs were allocated in the budget.
 - b. Footnote 3: Lists the refrigeration equipment purchased in the third year and how the costs were allocated in the budget.

C. Budget Program Section (Second 10 EXCEL Worksheets – yellow tabs)

1. *Machinery Worksheet*

- i. Users can change the purchase price of the equipment as well as the estimated years the equipment will be owned and the total number of hours (or the total number of miles) it will be used annually.
- ii. Users can make the same changes for the cooling and sorting rooms.

Note: The cooling costs are based on the costs of the “used” cooling unit.
- iii. Users can change the estimated electricity costs (\$/hour) needed to operate the cooling and sorting rooms.

- iv. The estimated costs per hour are summarized in the last columns of the worksheet:
 - a. Fixed cost/hour: Column R
 - b. Variable cost/hour: column S
 - c. Total cost/ hour: Column T
- v. Total Ownership, or Fixed, Costs are based solely on insurance and taxes and does not include depreciation. This is because the investment analysis is based on the projected cash flow of the blackberry operation and depreciation is not a cash cost. In this situation, the equipment was assumed to be purchased in the year it is first needed and sold at its salvage value at the end of its useful life.

2. *Materials Worksheet*

- i. Lists inputs, application or usage rates, costs/unit, costs/acre and costs/10 acres
- ii. The following changes can be made in this worksheet:
 - a. Chemicals: Application rates and cost/unit
 - b. V Trellis: The number of units (rate) needed per acre and the price per unit
 - c. General Items: The number of units (rate) needed per acre and the price per unit
 - d. Food Safety: The costs of field sanitation units and a third party GAP Certification
 - Note:** These cost estimates are for the entire 10 acres.
 - e. Packing Materials: The cost of labels for the 8 oz clamshells and 5 gallon cull buckets, if needed
 - f. Annual Administrative & Seasonal Costs:
 - 1) Real estate taxes
 - 2) Management fees
 - 3) Land rent
 - 4) Operating capital
 - 5) Utilities, legal, accounting
 - 6) Miscellaneous (Any overhead costs not included previously.)

3. *Labor Worksheet*

- i. When developing budgets many people (economists, specialists, agents and growers) have ignored the “true” costs of labor. That is, they estimate labor costs by only using an average wage rate while ignoring the required payroll expenses and fringe benefits and do not adjust the wage rate for paid holidays, vacation, or sick leave.
- ii. This budget program gives the user the option of either simply using the wage rate or estimating the “true” labor costs for both the owner/supervisor and a typical employee.
- iii. The following changes can be made to this worksheet:
 - a. Average number of hours worked per week and the total number of weeks worked per year.
 - b. The employer’s share of OASDI (Old Age, Survivors, and Disability Insurance) and HI (Health Insurance), State and Federal Unemployment Insurance and Workman’s Compensation. If the user elects to not include these costs they can enter 0.0% in the appropriate “blue” cell.

- c. Fringe Benefits: Enter the annual dollar amount for any fringe benefits the employers provides the employee. Additional space is included for any benefits not listed on this form.
- d. Labor Cost adjustment for any time paid for that but not worked – enter the number of days the employee receives per year for holidays, vacation and sick leave.
- iv. The value shown in cell I 53 is used to estimate the owner’s labor costs while the value in cell I 107 is used to estimate the employee labor costs.

4. *Prep Worksheet – (Site Preparation)*

- i. This worksheet presents a detailed report of the monthly:
 - a. Equipment use and costs by operation
 - b. Materials used and costs by operation
 - c. Labor requirements and costs by operation
 - d. Total costs by operation
- ii. The following changes can be made in this worksheet:
 - a. Hours of equipment and machinery use by operation.
 - b. Hours of labor required for manual labor tasks.
 - 1) All estimates of the amount of time both machinery and labor is needed for each operation, should be inputted as either whole hours or a fraction of an hour. For example, 30 minutes is inputted as 0.5 hours, 45 minutes is inputted as 0.75 hours, and 1 hour and 15 minutes is inputted as 1.25 hours.
 - 2) The hours of labor required for operations using machinery are estimated by multiplying the hours the equipment is used times a gear-up-factor of 1.2. The gear-up-factor is used to account for the additional time needed to prepare the equipment for operation, driving to the field, etc.

5. *Year 1 Worksheet – (Planting Year)*

- i. Presents the same information as in the *Prep Worksheet*.
- ii. The same changes can be made as in the *Prep Worksheet* **plus**
 - a. Any interest paid on equipment purchases

6. *Year 2 Worksheet – (First Harvest)*

- i. Presents the same information as in the *Year 1 Worksheet*.
- ii. The same changes can be made as in the *Year 1 Worksheet* **plus**
 - a. The total hours the cooling and sorting rooms are used in June, July and August
 - b. The number of miles the refrigerated truck is driven in June, July and August.
- iii. Estimates of the Total Production and Harvest Costs are presented at the bottom of the worksheet.

7. *Year 3 Worksheet – (Full Harvest; Years 3 through 10)*

- i. Presents the same information as in the *Year 2 Worksheet*.
- ii. The same changes can be made as in the *Year 2 Worksheet*
- iii. Estimates of the Total Production Costs and Harvest Costs are presented at the bottom of the worksheet.

8. *Summary Costs Worksheet*

- i. Summarizes the monthly and annual equipment, material, and labor cost estimates.
- ii. The additional annual cost estimate in column F is a check to ensure the program is functioning correctly.
- iii. Summarizes the monthly labor requirements needed for blackberry production.

9. *Sensitivity Analysis Worksheet*

- i. The user can evaluate the net effects of varying the base yield and wholesale price in this worksheet by
 - a. Changing the percentage increase and decrease from the base yield cell E 11.
 - b. Changing the percentage increase and decrease from the base wholesale price in cell E 28.
- ii. Equipment, material and labor costs as well as gross revenues and net returns estimates are presented for each yield and price combination.

10. *Investment Analysis Worksheet*

- i. Presents the projected Annual Cash Flow, Annual Net Cash Flow, Accumulated Net Cash Flow and Net Present Value for the blackberry operation in both dollars per pound and dollars per flat.
- ii. The user can change the discount rate used to calculate the net present value over the 10 year production cycle by inputting the discount rate factors that correspond to the selected interest rate in column N.

Net Present Value

Any potential owner of the blackberry operation wants some minimum rate of return on his/her investment. Net present value (NPV) is the present value of a time series of cash flows and is a standard method for using the time value of money to appraise long-term projects.

The rate used to discount future cash flows to their present values is a critical decision. The method used in this program to select the discount rate is to determine the rate which the capital needed for the project could return if it was invested in an alternative venture that is relatively risk free. If, for example, the potential owner could invest his/her money elsewhere and earn 6 percent, use this discount rate to calculate the NPV. The owner can now make a direct comparison between the alternative investment and the blackberry operation.

“Decision rules”:

1. If the $NPV > 0$, then accept the project, i.e. plant blackberries
2. If the $NPV < 0$; then reject the project. i.e. don't plant blackberries
3. If the $NPV = 0$; then planting blackberries would neither add or lose value for the farm so the potential owner would be indifferent between the blackberry operation and the alternative venture

Caution: The procedures used in this budget program do not allow the user to evaluate the effects of a depressed market or crop failure in one or more of the production years. Either event would have a negative impact on the Accumulated Net Cash Flow and NPV. Therefore the user should take these risky scenarios into account when making this investment decision.

Table of Discount Rate Factors

Year	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751
4	0.961	0.924	0.888	0.855	0.823	0.792	0.763	0.735	0.708	0.683
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621
6	0.942	0.888	0.837	0.790	0.746	0.705	0.666	0.630	0.596	0.564
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386