

## BACKGROUND

In 2013, the three leading causes of death in the United States were heart disease, cancer, and chronic lower respiratory diseases (Kochanek et al., 2014). Numerous research studies support the role of blackberries in helping to reduce the risk of these diseases (Manganaris et al., 2014; Seeram 2010; Seeram 2008; Seeram et al., 2006). Blackberries' health benefits have stimulated domestic consumption and, consequently, an increase in production in the US (Safley, Boldea, and Fernandez, 2006). However, production of blackberries requires a high initial investment and a delay of three years in returns after planting. Therefore, an assessment of the economic feasibility of the production system is an important consideration before undertaking this new enterprise.

The goal of this poster is to introduce an interactive tool that allows existing or potential blackberry producers to evaluate cost, returns, and conduct breakeven, sensitivity and risk analyses for four different production systems (e.g., floriculture or primocane high tunnel production, as well as floriculture or primocane field production).

This tool was developed in Microsoft Excel using VBA interfaces for simplified data entry. The user-friendly interfaces allows for generation of tabular and graphical information that highlights estimated costs and returns. The tool is flexible enough to assess the changes to cost, revenue and risk as expected costs, revenue prices and/or yields change using the tool's default data or information entered by the user.

## BASIC SETTINGS

This application is both easy to use and highly customizable. This tool employs standard Windows graphical elements so that anyone familiar with the Windows environment should find it easy to navigate. A budget can be generated in one of the following ways:

- 1) using default production practice and cost values built into the tool,
- 2) entering practices and costs from a current or potential operation, or
- 3) combining both methods.

# Interactive Sustainable Blackberry Budget

Start

The Interactive Sustainable Blackberry Budget is a Microsoft Excel spreadsheet template that calculates costs and expected net returns for field or high tunnel production systems. The economic models provide a framework for current or potential producers to build a base scenario and then analyze that scenario with respect to different market prices or changes to production and management systems. Sensitivity and risk analyses functionality is included with users able to incorporate best case, most likely, and worst case yields and prices. Expected profitability can be calculated using the producer's own production system and expected selling prices. A key part of the tool is its ability to calculate and display information in tabular and graphical forms. Please click "Start" to continue.



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Figure 1: Main Menu Screen

## USER INTERFACE

A screen like the one shown in Figure 1 will display the "Main Menu". By clicking on the "User Input" the user can select between two production systems: "Field" or "High Tunnel" as shown in Figure 2.

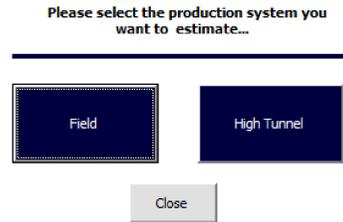


Figure 2: Production System Selection Screen

If "high tunnel production" is chosen, a screen will display nine questions. The user can choose between Floriculture spring/summer production or Primocane fall production. The user can also use the program defaults (Demo) or customized the input values (Figure 3).

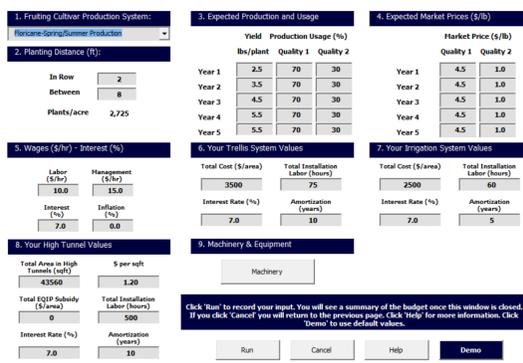


Figure 3: Initial Input Screen

After running the model, the tool will show a screen with a snapshot of the budget (Figure 4). From here, it is easy to navigate across seven different years (e.g., soil preparation, planting, and five production years) to modify or to enter new information. In addition, the user can return to the main menu, edit any input, navigate to any year of production, obtain help, access the economic tools or go to the summary page.



Figure 4: Graphical Representation of the Results

## ECONOMIC ANALYSIS

The tool can be used for two economic purposes. The first is to estimate blackberry production budgets. Any change to an activity will automatically re-estimate the total cost, gross revenues and net returns for the whole operation. The second is to evaluate cost, returns and conduct breakeven, sensitivity and risk analyses. A click of a button will generate tabular and graphical information that highlights estimated costs and returns (Figures 5 and 6).

Expected Values					
Average Fresh Market Price (\$/lb)	Average Processed Market Price (\$/lb)	Fresh Market Yield (lb/area/yr)	Processed Market Yield (lb/area/yr)	Total Revenues (\$/area/yr)	Cumulative Total Costs (\$/area/yr)
4.50	1.00	41,011	17,576	150,984	134,814

Breakeven Yield Analysis					
Total Costs of Production (\$/area)	Fresh Market Production (\$/area)	Breakeven Fresh Yield (lb/area)	Processed Market Production (\$/area)	Breakeven Processed Yield (lb/area)	Breakeven Processed Yield (lb/area)
134,814	184,551	27,354	134,814	17,576	11,721

Figure 5: Example of a Breakeven Analysis

Total Cost/Year	Buildup	Planting	Year 1	Year 2	Year 3	Year 4	Year 5
Total Costs	\$ (1,070)	\$ (22,054)	\$ (20,366)	\$ (21,647)	\$ (23,063)	\$ (24,072)	\$ (22,542)
New Total Costs	\$ (963)	\$ (19,849)	\$ (18,329)	\$ (19,483)	\$ (20,757)	\$ (21,665)	\$ (20,287)

The probability of obtaining a value equal or greater than \$10,000 during the life of the operation is 97.0%.

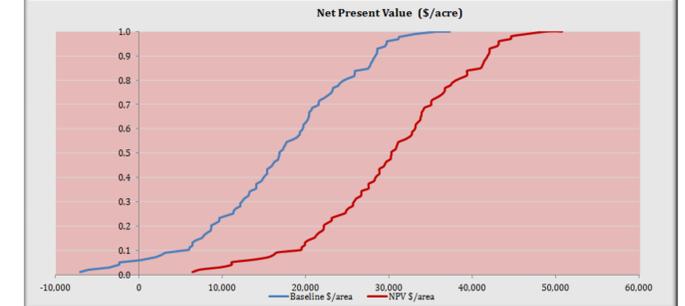


Figure 6: Example of a Risk Analysis

This tool is useful because it allows blackberry producers to estimate operating costs, fixed costs, total costs and expected total returns by modifying production practices or production systems, cost or return values. Estimating total costs per year, breakeven, sensitivity and risk analyses for yields and prices can assist blackberry producers to make better production, management and marketing decisions when comparing production costs and revenues of different production systems.

## ACKNOWLEDGEMENTS

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## CONTACT US

You can download a free copy of this application on the CARS (Center for Agricultural and Rural Sustainability) website. [http://cars.uark.edu/Specialty-Crop-Production-and-Marketing/fruit\\_budget.aspx](http://cars.uark.edu/Specialty-Crop-Production-and-Marketing/fruit_budget.aspx) or contact us at [cars@uark.edu](mailto:cars@uark.edu)

