USDA Southern SARE

Final Report

Economics Team Information

The purpose of Objective 3 of the analysis was to examine economic feasibility of primocane fruiting blackberries. In order to assess the profitability of our partnering farms, robust data were needed regarding production practices and yields. To that end, the economic team developed a data collection sheet in order to gather the data needed. All producers were provided the sheet and given some training on how to complete it. However, due to circumstances beyond our control (primarily weather related but also the transition of one farm from one owner to another), we were unable to collect all of the data needed from all farms across the full time period. As a result, we were not able to conduct the analysis as planned. Drawing conclusions from the partial data would not only be methodologically incorrect, it would be irresponsible.

Evidence of this possibility arose about half way through the project, so we turned our efforts on providing economically relevant education, training students and improving our Interactive Sustainable Blackberry Budget to increase knowledge and skill sets of interested producers such that they could conduct their own analyses in the future. Each effort is described briefly below.

Blogs

The economics team developed 7 blogs English, 2017a-2017f, 2018) for the project, most of which centered around a variety of marketing strategies including 1) Introduction to Marketing Series Blog, 2) Farm Gate Sales and Agritourism, 3) Farmers Markets, 4) Groceries and Supermarkets, 5) internet Marketing (2 blogs), and 6) Interactive Budgets. These blogs were posted on the project website as well as forwarded to interested producers if requested.

Interactive Sustainable Blackberry Budget

As mentioned, the proposed research included use of our existing interactive Sustainable Blackberry Budget. However, in year one, we realized that the budget was in need of an overhaul, as some of the practices and all of the prices in the tool were outdated. Further, we found incompatibilities between some of our code and newer versions of Microsoft Excel. Therefore, with the help of farmer focus group input, much of our effort was directed towards extensive revisions to the budget (figure 1) . A summary of those revisions follows.

Figure 1: Interactive Sustainable Blackberry Budget Homepage

Default Data

On the User Input Page (Figure 20 Version 4.0 (the latest version) comes with preloaded example data[1] related to yields, production practices, irrigation cost, trellis cost and marketing prices related to direct marketing and wholesale. These data have been updated based on information collected in Arkansas. The uniqueness of this tool is that any/all of these default data can be replaced with data relevant to the users farm. The default values provide only a guide for those wanting to conduct broad estimates for their farm. Primary farm data will be needed to conduct estimates for any specific farm.

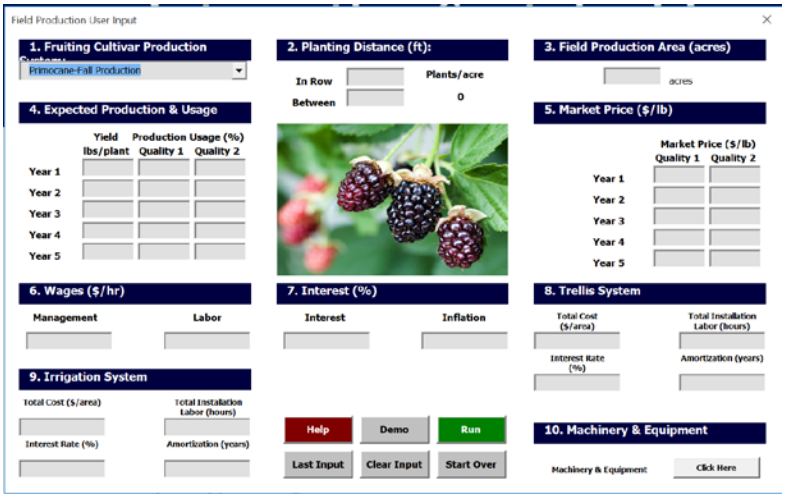

Figure 2. User Input Page

[1] Figures shown here do not include those data as they are under peer review by researchers at another university.

In horticultural systems, most of the heavy machinery is rented for small farms. This tool allows the user to specify what equipment is used and whether that machinery is rented or owned. If it is owned, the tool will also calculate depreciation (behind the scenes) and add that cost to the farm.
While machinery costs were taken from Arkansas dealerships, depreciation information was calculated using information provided by ASAE (2011) Agricultural Machinery Management Data. Amortization schedules related to the trellis and irrigation systems were also updated. These values can be reviewed in the results menu and adjusted to fit the farm situation.

Estimation Results and Changing the Default Production Practice Information

Once the budget is run using the basic user input, users can now view results in five ways. The *Estimated Budget* tab shows annual production costs and revenues from soil prep year to establishment year through five years of production. Users can now go in and edit any or all of the information listed in each of those production years. Important to note, the pesticide information was updated to include all of the organic products used to treat SWD in Arkansas.

The *Budget Summary* (Figure 2) uses the yielded fruit that is destined for direct and processed markets, and using the prices received for fruits in those markets summarizes annual and cumulative net returns. Color coding is used to show in what years the operations cumulative returns are negative (red) and positive (green). This gives insights into how many years it takes for an operation to break even.

Production Costs, Returns and Net Returns

Production System:	Field - Floricane-Spring/Summer Production						
Production Year	Total Yield Production (lb/area)			Costs/Returns ($/area)			
	Fresh Fruit	Processed Fruit	Total Yield	Gross Returns*	Total Costs*	Net Returns*	Cumulative Net Returns*
Soil Preparation	0	0	0	0	1,918	-1,918	-1,918
Establishment	0	0	0	0	11,843	-11,843	-13,760
Production Year 1	4,905	545	5,450	21,486	14,765	6,721	-7,040
Production Year 2	6,131	681	6,813	26,177	16,706	9,470	2,431
Production Year 3	8,584	954	9,538	35,718	20,151	15,567	17,998
Production Year 4	9,810	1,090	10,900	39,787	21,520	18,267	36,265
Production Year 5	9,810	1,090	10,900	38,778	21,019	17,759	54,024
Totals **	39,240	4,360	43,600	161,946	107,922	54,024	

* Present Values
** Net Present Values

Figure 2. Example of the Budget Summary Screen

The *Graphics Summary* and *Percentage by Categories* present the same costs and revenues information in two different ways, graphically and with percentages.

The *Economic Analyses* tab leads to three types of further economic analysis that can be utilized by the producer: breakeven analysis, sensitivity analysis and risk analysis. While these three sub-tools were available in previous versions they were updated with better code to make the calculations happen quicker and more accurately. These tools were tested on a focus group of producers twice in the last

year. Many in the test group were beginning farmers and saw great value in these options, but were still trying to understand their own farm data. They believe these special analyses tools will be utilized primarily by farmers who have been in the business three or more years. With good data provided by the farmer, these tools are expected to be useful in long term farm financial planning.

Version 4 is currently under peer review with experts at other universities. Once those reviews are complete, and any requested changes are made, the budget will be loaded onto a University of Arkansas website (currently under development).

North American Raspberry and Blackberry Association (NARBA) collaboration

One unexpected benefit of the benefit grant was a new partnership with the North American Raspberry and Blackberry Association (NARBA). The economics team contacted NARBA seeking permission to receive summary results of their 2018 pricing survey. Instead, we partnered with NARBA to develop, deliver and analyze the results of their spring 2018 survey. In part due to our assistance, participation in the survey grew by 40% compared to participation in 2016. Approximately 80% of the growers were blackberry growers and prices were recorded for Pick Your Own, Farmer's Markets, Farm Stand, Small Wholesale and Large Wholesale markets. Data collected for those markets in NARBA's defined Southeast (Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, Tennessee) and Southwest (Arizona, Arkansas, Louisiana, New Mexico, Oklahoma, Texas) were used Arizona, Arkansas, Louisiana, New Mexico, Oklahoma, in part to inform prices used for those markets.

Student Training

In addition to the co-PI and the research associate, over the course of the project, three different bachelor's students (from horticultural or agribusiness disciplines) and two master's students (from agricultural economics) participated in the project, working on the initial data collection sheets and primarily on the interactive budget. The undergraduate students researched production practices, production costs, yields of different varieties and expected market prices. Bringing together this multidisciplinary undergraduate team helped students understand that sustainable agricultural production requires expertise across a variety of disciplines: economics, horticulture, entomology, plant pathology and more. As a result, one student adjusted her committee membership for her honors research to include expertise across campus that could contribute to her work. This was an unexpected, but important result of the project, training students to work well in multidisciplinary teams to address real world agricultural issues.

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