BUDSYS : A New Tool for Farm Enterprise Analysis

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1. Introduction

Enterprise Budgeting is an efficient approach to help producers address potential production practices and returns on existing South Carolina commodities. This tool has been used by most extension services in the United States and has been successfully utilized by producers when production and marketing decision matters arise.

Why is it so important to take a look at the Clemson University extension budgets? First, they are developed for producers who are searching for alternative enterprises for their farm operation. Second, costs and returns are prepared and calculated based on reliable market and research information along with long-standing machinery cost techniques. Third, they are prepared by leading agricultural specialists in the state of South Carolina whose only interests are to introduce consistent production practices and reliable operating costs to the farmers.

Some enterprise budget generators have been used by most Extension Services across the country. Programming languages along with relational databases help support the development of enterprise budget generators. However, spreadsheets provide more flexibility for the user to incorporate new features into the budgets whereas database-based budget generators require the expertise of a programmer to make any arrangement requested by the user. It is also important to refer to the ability of interacting with other spreadsheet packages.

BUDSYS, a new enterprise budget system generator, has been developed to help extension agents, agricultural economists, and farmers in the United States create their own enterprise budgets. By using the concepts of spreadsheets, the users are expected to perform manual alterations and inclusions into the budgets. The key objective of giving people access to the budget generator is to encourage budget users across the state of South Carolina to develop their local budgets by using the same ideas, procedures, standards, input costs, and analysis as those that have been used by the Clemson University Department of Agricultural and Applied Economics. This MS-Excel ® budget generator can be downloaded onto any computer by using the Internet and accessing the following address: http://cherokee.agecon.clemson.edu/budgets/BudSys.htm.

2. Why Should Someone Use BUDSYS?

In today's world competitiveness, more farmers are concentrating their efforts in reducing production costs and looking for alternative enterprises than ever before. In the recent past, no one was able to utilize a computer program to help evaluate production alternatives for the farm business because such a program was not available to buy or download. Presently, more and more agricultural programs have been developed and given farmers valuable instruments for making smart decisions. BUDSYS is one more in that list. Someone may choose

to use a budget generator program if concerns about reducing production and marketing risk, increasing profitability, managing machinery resources, adopting new technology, controlling weed, comparing alternative crops and managing cash flow have flourished over the past years.

BUDSYS was developed using Microsoft Excel 2000®. It comes with a manual that intends to cover only the spreadsheet concepts that are necessary for the enterprise budgets to be generated and maintained. Any further questions about spreadsheet features, commands and installation must be made to an authorized support center. Some spreadsheet knowledge is required to operate the budget templates.

Why should someone use BUDSYS? First, because it helps farmers and agricultural specialists better analyze some concerns that were listed above. Second, it is free. Lots of financial packages are able to print an enterprise budget based on the user's current farm data. However, no financial package is able to predict the costs of a non-produced farm enterprise. BUDSYS incorporates 69 budget templates that will guide producers towards obtaining information on prospective, alternative, and desired farm enterprises. Also, it enables the user to know about the breakeven prices and yields as well as returns over a broad combination of prices and yields. Someone must use it to obtain information that applies to his or her farm enterprise.

Enterprise budget development involves such a number of techniques and formulas that it has become a specialized field in the agricultural economics arena. When using BUDSYS, it is not necessary to insert any additional formula or calculate any amount by hand or calculator. Everything has been set up for the user to type in his current or expected enterprise production costs and find out more about the enterprise financial returns. It is set to run.

3. BUDSYS Operating Characteristics

The general idea behind the budget generator is to have an exclusive file with the core database for users to access when preparing enterprise budgets. Therefore, a master file called "Chem00_C.xls" was created. In order to facilitate the operation of the budgets, all the budgets and the master file should be kept in the same directory. When the master file is open, the user will see seven functional worksheets. The description of each worksheet is presented below:

1. **Mach Costs** : contains machinery variable and fixed costs.
2. **Mach Info** : aggregates all the machinery specifications used for calculating the total variable and fixed costs in the Mach Costs worksheet.
3. **Seed** : contains all the seed, fertilizer and lime average costs, cost units, and budget units. It automatically converts quoted units into budget units.

4. **Chem Costs** : maintains prices of farm chemicals along with price units, budget units, product names and common names.
5. **Rates** : keeps all the rates and costs that are used for calculating some of the costs that are incorporated into the budgets.
6. **File Names** : describes the file names of all the enterprise budgets in the directory file along with the enterprise budget heading.
7. **Others** : contains tools to help the user print a sequence of budgets and to find and replace names in the budgets.

The most important feature of BUDSYS is the interactivity between the master file and each enterprise budget. The user can choose to have the equipment, seed, chemicals and rate worksheets updated in the master file only, and distributed to all the enterprise budgets, or have the enterprise budgets allocate their own costs and rates individually. For the first example, the master file serves as the central database of all the costs and rates. By clicking on the **Submit** button in the master file, a copy of a selected worksheet will be sent to all enterprise budgets listed in the worksheet named **File Names.** For the second example, the user updates the costs of an individual enterprise budget file without affecting the corresponding costs in the master file. So, it is up to the user whether to keep all the costs and rates uniformly or to allow distinct costs and rates across the budget templates.

Since individual budgets allocate the same costs as the master file costs when worksheets are submitted, it is important that worksheet names be consistently related. The flowchart illustrates the submitting process between the worksheets in the master file and an individual enterprise budget:

MASTER FILE		BUDGET TEMPLATE
Mach Costs	→	Machinery
Seed	→	Seed
Chem Costs	→	Chemicals
Rates	→	Rates
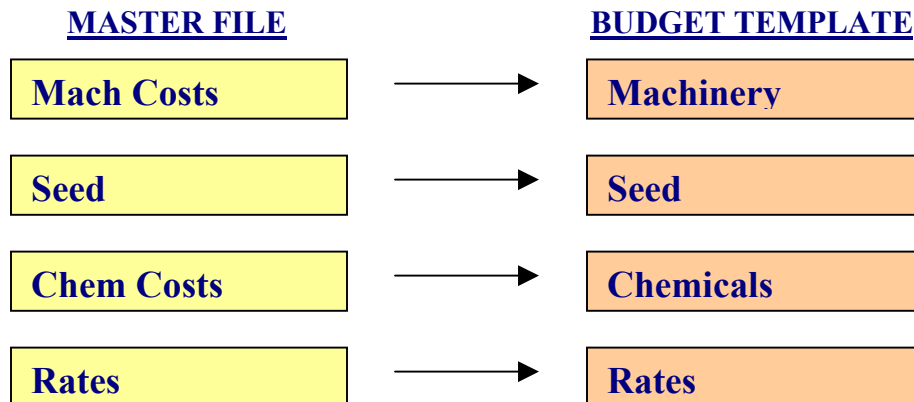
Subsequently, the information provided by the worksheet Mach Costs in the master file and by the worksheet Machinery in the budget is the same.

4. Budget Templates: How to Find and Use Them?

It is important that the prospective user be knowledgeable on spreadsheet functionality. BUDSYS is not a total-automated budget generator and it is not

meant to be that way. It is not possible to open a budget template out of the existing buttons neither at the main menu nor at the operating worksheets. A budget template is the starting point for the user to start creating his custom-made budget. If BUDSYS is installed by default, without being made any change during the installation process, all the budget templates and the master file must be located at the directory: "C:\Program Files\BudSys\." it is presented below the existing budget templates created by Clemson University Cooperative Extension Service for BUDSYS:

Agronomic Crops Enterprise Budgets

BARLEY52.XLS	BARLEY FOR GRAIN - 52 BUSHELS
CORN100.XLS	CORN FOR GRAIN - CONVENTIONAL TILLAGE - 100 BUSHELS
CORN100-NT.XLS	CORN FOR GRAIN - CONSERVATION TILLAGE - 100 BUSHELS
CORN160-IRR.XLS	CORN FOR GRAIN - IRRIGATED - 160 BUSHELS
CORN70.XLS	CORN FOR GRAIN - CONVENTIONAL TILLAGE - 70 BUSHELS
CORN70-NT.XLS	CORN FOR GRAIN - CONSERVATION TILLAGE - 70 BUSHELS
COTTON1000-IRR.XLS	COTTON - CONVENTIONAL TILLAGE, IRRIGATED - 1000 LBS
COTTON750.XLS	COTTON - CONVENTIONAL TILLAGE - 750 LBS
COTTON750-BT.XLS	BT COTTON - 750 LBS
COTTON750-RR.XLS	COTTON - ROUND-UP READY - 750 LBS
COTTON750-SK.XLS	COTTON - STACKED (ROUND-UP READY AND BT) - 750 LBS
OATS80.XLS	OATS FOR GRAIN - 80 BUSHELS
PEANUTS30.XLS	PEANUTS - 3000 LBS
PEANUTS40.XLS	PEANUTS - 4000 LBS
SBFULL35.XLS	SOYBEANS - FULL SEASON, CONVENTIONAL TILLAGE, 30" ROWS - 35 BUSHELS
SBFULL35-NTD.XLS	SOYBEANS - FULL SEASON, CONSERVATION TILLAGE, 7-10" ROWS - 35 BUSHELS
SBFULL35-RR.XLS	SOYBEANS - FULL SEASON, CONVENTIONAL TILLAGE (ROUND-UP READY), 30" ROWS - 35 BUSHELS
SBFULL35-RRNTD.XLS	SOYBEANS - FULL SEASON, CONSERVATION TILLAGE (ROUND-UP READY), 7-10" ROWS - 35 BUSHELS
SBWHT.XLS	SOYBEANS - FOLLOWING WHEAT, CONVENTIONAL TILLAGE, 30" ROWS - 35 & 65 BUSHELS
SBWHT-NTD.XLS	SOYBEANS - FOLLOWING WHEAT, CONSERVATION TILLAGE, 7-10" ROWS - 35 & 65 BUSHELS
SBWHT-RR.XLS	SOYBEANS - FOLLOWING WHEAT, CONVENTIONAL TILLAGE (ROUND-UP READY), 30" ROWS - 35 & 65 BUSHELS
SBWHT-RRNTD.XLS	SOYBEANS - FOLLOWING WHEAT, CONSERVATION TILLAGE (ROUND-UP READY), 7-10" ROWS - 35 & 65 BUSHE
TOBHAND.XLS	TOBACCO - MULTI-PASS, HAND HARVEST, BULK BARN - 2150 LBS
TOBMACH.XLS	TOBACCO - MULTI-PASS, MACHINE HARVEST, BULK BARN - 2150 LBS
WHEAT65.XLS	WHEAT FOR GRAIN - 65 BUSHELS

Forage Enterprise Budgets

BAHIAGRASS.XLS	BAHIAGRASS FOR GRAZING
BAHIAGRASS-ESTAB.XLS	BAHIAGRASS FOR GRAZING - ESTABLISHMENT
BERMUDAGRASS.XLS	HYBRID BERMUDAGRASS FOR HAY
BERMUDAGRASS-ESTAB.XLS	HYBRID BERMUDAGRASS FOR HAY - ESTABLISHMENT
BERMUDAGRASS-GRAZING.XLS	HYBRID BERMUDAGRASS FOR GRAZING
CORN-SILAGE.XLS	CORN FOR SILAGE
FESCUE.XLS	FESCUE FOR HAY
FESCUECL.XLS	FESCUE-CLOVER FOR GRAZING
FESCUECL-ESTAB.XLS	FESCUE-CLOVER FOR GRAZING - ESTABLISHMENT
FESCUE-ESTAB.XLS	FESCUE FOR HAY - ESTABLISHMENT
RYEGRASSBERMUDA-OVER.XLS	OVERSEEDING BERMUDAGRASS WITH RYE/RYEGRASS FOR GRAZING
SMALLGRAIN-GRAZING.XLS	SMALL GRAIN FOR WINTER GRAZING
SMALLGRAIN-HAY.XLS	SMALL GRAIN FOR HAY
SMALLGRAIN-SILAGE.XLS	SMALL GRAIN FOR SILAGE
SORGHUM-SILAGE.XLS	SORGHUM FOR SILAGE
SUMMERANNUALS.XLS	SUMMER ANNUALS FOR GRAZING

Livestock Enterprise Budgets

COWCALF-COASTAL-BERMUDA.XLS	COASTAL PLAIN COW-CALF OPERATION WITH COW ON BERMUDAGRASS HAY AND COTTON SEED
COWCALF-PIEDMONT-FESCUE.XLS	PIEDMONT COW-CALF OPERATION WITH COW ON FESCUE HAY AND COTTON SEED
STEERS-SUMMERING-MILLET.XLS	SUMMERING LIGHTWEIGHT STEERS ON MILLET PASTURE
STEERS-WINTERING-FESCUE.XLS	WINTERING LIGHTWEIGHT STEERS ON FESCUE PASTURE, HAY, SOYBEANS HULLS AND WHEAT
STEERS-WINTERING-OVERSEEDING.XLS	WINTERING LIGHTWEIGHT STEERS ON OVERSEEDED BERMUDAGRASS, CORN AND HAY
STEERS-WINTERING-SMALLGRAIN.XLS	WINTERING LIGHTWEIGHT STEERS ON SMALL GRAIN PASTURE, CORN AND HAY
GOAT.XLS	MEAT GOAT OPERATION

Vegetable Enterprise Budgets

BELLPEPPER-PLASTICIRR.XLS	BELL PEPPERS - ON PLASTIC - DRIP IRRIGATION
CABBAGE-FALLIRR.XLS	FALL CABBAGE - IRRIGATED
CABBAGE-SPRINGIRR.XLS	SPRING CABBAGE - IRRIGATED
CANTALOUPES-PLASTICIRR.XLS	CANTALOUPES - ON PLASTIC - DRIP IRRIGATION
COLLARDS-IRR.XLS	COLLARDS - IRRIGATED (HAND HARVEST)
CUCUMBER-FALLIRR.XLS	FALL CUCUMBER - FOR FRESH MARKET - IRRIGATED
CUCUMBER-SPRINGIRR.XLS	SPRING CUCUMBER - FOR FRESH MARKET - IRRIGATED
GREENONIONS-IRR.XLS	GREEN ONIONS - FRESH MARKET- IRRIGATED
GREENS-SPRINGIRR.XLS	GREENS - SPRING (HAND HARVEST) - IRRIGATED
LIMABEANS-IRR.XLS	LIMA BEANS - FOR FRESH MARKET (CONTRACT HARVEST) - IRRIGATED
OKRA-IRR.XLS	OKRA - FOR FRESH MARKET (CONTRACT HARVEST) - IRRIGATED
PICKLES-FALLIRR.XLS	FALL CUCUMBERS FOR PICKELS - IRRIGATED
PICKLES-SPRINGIRR.XLS	SPRING CUCUMBERS FOR PICKELS - IRRIGATED
SNAPBEANS-IRR.XLS	SNAP BEANS - FOR FRESH MARKET (CONTRACT HARVEST) - IRRIGATED
SOUTHERNPEAS.XLS	SOUTHERN PEAS - FOR FRESH MARKET (CONTRACT HARVEST) - IRRIGATED
SWEETCORN-FRESHIRR.XLS	SWEET CORN - FOR FRESH MARKET - IRRIGATED
SWEETCORN-LOCALIRR.XLS	SWEET CORN - FOR LOCAL OR ROADSIDE MARKET - IRRIGATED
SWEETPOTATOES-IRR.XLS	SWEET POTATOES - FOR FRESH MARKET - IRRIGATED
TOMATOES-PLASTICIRR.XLS	TOMATOES - ON PLASTIC - DRIP IRRIGATION
WATERMELONS-PLASTICIRR.XLS	WATERMELONS - ON PLASTIC - DRIP IRRIGATION
YELLOWSQUASH-IRR.XLS	YELLOW SQUASH - FOR FRESH MARKET - IRRIGATED

Opening a budget template is the same as opening a regular MS-Excel® file. At the menu bar the user should select **File.** After clicking on the left mouse button an option menu will come to view. Then, the option **Open** must be selected by clicking on it. The directory "C:\Program Files\BudSys\" must be found and the budget template name you are interested in must be selected. The name of the budget template is not a permanent name. Keeping the same file names is up to the user. The user might want to have the names changed to something closer to his understanding. It is a good idea to delete some of the files that will never be used.

As long as the enterprise budget template is loaded into the MS-Excel® windows, everything is already set up for the user to start working on his own enterprise budget by making all sorts of changes. Some tips for BUDSYS' users are listed here:

- Make changes on cells with blue-colored digits only.
- Don't change or add information into an individual enterprise budget if it is not planned to keep all your data set in the master file. On the contrary, never submit the master file worksheets to the enterprise budget that you have changed or added information to because you will lose that information.
- When submitting a worksheet from the master file, an error may occur. To fix it, make sure that the MS-Excel® is prompted at the directory recently created by the BUDSYS installer. Opening any budget template in the correct directory is enough to get it fixed. Close the budget template that was opened when trying to submit the worksheet again.

Also, the user can choose to pick the year as the directory name. The objective of changing the directory name is to allow the user to retrieve information of all the previous budgets when it is needed. For example, the name of the directory

for the Budgets 2000 could be "\Budgets\2000." For the next year's budgets all the files could be kept in the directory named "\Budgets\2001." So, a new directory for each year could be created. Suppose that the current files were stored in the directory "C:\Budgets\2000" and the new budgets 2001 were already planned to be created. In this case, the user would need to create a new directory called "C:\Budgets\2001" and copy all the files from the directory "C:\Budgets\2000" to the new directory "C:\Budgets\2001." The user must use the program **Microsoft Windows Explorer** to create new directories, also known as folders.

The MS-Excel® windows will look like this, when the **Corn-for-Grain – Conventional-Tillage-100-Bushels** budget template comes into sight:
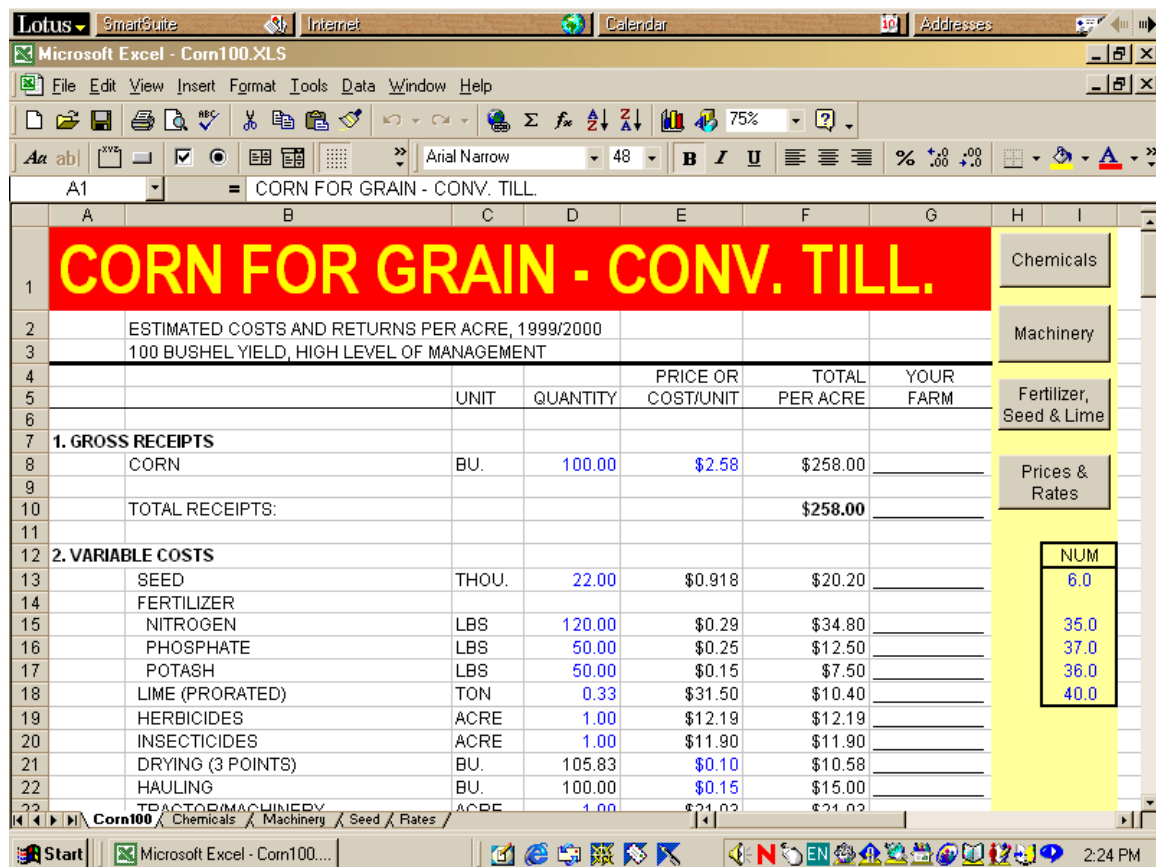
5. Using BUDSYS For Enterprise Analysis

Enterprise budget is a compelling instrument that aids farm production and marketing decisions. Operating capital needed per unit produced is captured from a budget and utilized by farmers for making economic decisions. Uncertainties surround any farm operation and sometimes make farmer's futures very unclear. Risk can be reduced in the production process by employing budgeting principles. BUDSYS can help reduce the production risk by providing

the needed operating capital for alternative enterprises and assessing the additional costs involved in changing an existing production practice to another. Some examples of enterprise analysis will be presented below:

Conventional tillage and Conservation tillage production: These two production systems can be compared on BUDSYS. Machinery cost calculation depends on as series of formulas and coefficients. However, BUDSYS makes it a rather "painless" process. The illustrations below compare Cotton Conventional Tillage to Cotton Conservation Tillage:

PER ACRE MACHINERY AND LABOR REQUIREMENTS FOR 750 LBS COTTON - CONV. TILLAGE							
MONTH	OPERATION	TIMES OVER	LABOR HOURS	MACHINE HOURS	VARIABLE COSTS	FIXED COSTS	EQUIP NUM
3	LIGHT DISKING W/ HERBICIDE	1.00	0.19	0.17	$2.76	$4.35	49
3	SUBSOILER-BEDDER 8-ROW	1.00	0.13	0.12	$3.02	$5.04	122
5	DO-ALL FIELD CONDITIONER 8-ROW	1.00	0.10	0.09	$1.33	$2.05	123
5	PLANTER W/ SPRAYER 8-ROW	1.00	0.13	0.12	$2.25	$5.31	121
5&6	CULTIVATOR W/ HERBICIDE 8-ROW	3.00	0.46	0.42	$4.86	$10.77	126
5	TRACTOR MTD SPRAYER	1.00	0.18	0.16	$0.84	$1.54	106
6,7&9	HIBOY	4.00	0.26	0.24	$5.32	$12.96	7
10	COTTON PICKER 4-ROW	1.00	0.42	0.38	$27.21	$35.16	6
10	COTTON MODULE BUILDER	1.00	0.12	0.11	$1.66	$2.20	116
10	BOLL BUGGY	1.00	0.37	0.34	$4.04	$6.36	124
11	ROTARY MOWER 7'	1.00	0.32	0.29	$1.74	$4.47	84
PER ACRE TOTALS FOR SELECTED OPERATIONS			2.68	2.44	$55.03	$90.21	
UNALLOCATED LABOR(HRS./AC.)			3.35				

Figure 1. Cotton Conventional Tillage, Machinery and Labor Table.

PER ACRE MACHINERY AND LABOR REQUIREMENTS FOR 750 LBS COTTON - CONS. TILLAGE							
MONTH	OPERATION	TIMES OVER	LABOR HOURS	MACHINE HOURS	VARIABLE COSTS	FIXED COSTS	EQUIP NUM
5	PLANTER NO-TILL 8-ROW	1.00	0.13	0.12	$3.26	$5.92	67
5&6	TRACTOR MTD SPRAYER	5.00	0.88	0.80	$4.20	$7.70	106
6,7&9	HIBOY	4.00	0.26	0.24	$5.32	$12.96	7
10	COTTON PICKER 4-ROW	1.00	0.42	0.38	$27.21	$35.16	6
10	COTTON MODULE BUILDER	1.00	0.12	0.11	$1.66	$2.20	116
10	BOLL BUGGY	1.00	0.37	0.34	$4.04	$6.36	124
11	ROTARY MOWER 7'	1.00	0.32	0.29	$1.74	$4.47	84
PER ACRE TOTALS FOR SELECTED OPERATIONS			2.50	2.28	$47.43	$74.77	
UNALLOCATED LABOR(HRS./AC.)			3.13				

Figure 2. Cotton Conservation Tillage, Machinery and Labor Table.

Not many changes took place when changing from Conventional to Conservation Tillage. First, Light Disking (49), Subsoiler-Bedder (122), Do-All Field Conditioner (123), and Cultivator (126) are no longer necessary on Conservation tillage system. Second, a Planter No-Till (67) was substituted for a Planter W/ Sprayer (121). The numbers at the right hand side of the table represent the machinery codes. So, the Planter No-Till is referred by its code 67.

The resulted amount of operating and fixed capital necessary to operate all farm machinery on Conservation Tillage is less than the amount required on Conventional Tillage. Based on the budget information, a farmer will harvest the same cotton and save $7.38 per pound by utilizing conservation tillage system. The machinery table itself answers many questions about costs, however the budget results take into account all the associated per-acre costs that have been used to provide the enterprise returns. The user should always refer to the budget itself to analyze all kinds of returns.

Chemical Weed Control Alternatives: It is common to hear about brand-new herbicides that are able to wipe the weed out for less cost compared to other brands. BUDSYS can be used to perform such a comparison without difficulty. By using the chemical table, the user should be able to find the less costly chemical application per acre on the selected commodity. The illustrations below suggest that the application of Gramoxone Extra for Corn Conservation Tillage be less costly than the application of Roundup Ultra:

CHEMICAL USE ASSUMPTIONS FOR 100 BUSHEL CORN NO-TILL						
	UNIT	QUANTITY	PRICE OR COST/UNIT	TOTAL PER ACRE	MONTH	NUM
HERBICIDES:						
glyphosate (Roundup Ultra)	QT	1.00	$8.09	$8.09	MAR	109
metolachlor+atrazine	QT	1.50	$8.13	$12.19	MAR	17
ametryn	LB	2.00	$5.58	$11.16	APR	139
INSECTICIDES:						
chlorpyrifos	LB	7.00	$1.70	$11.90	MAR	72
TOTAL:				$43.34		

Figure 3. Corn Conservation Tillage (Roundup Ultra), Chemical Table.

CHEMICAL USE ASSUMPTIONS FOR 100 BUSHEL CORN NO-TILL						
	UNIT	QUANTITY	PRICE OR COST/UNIT	TOTAL PER ACRE	MONTH	CHEM NUM
HERBICIDES:						
paraquat (Gramoxone Extra)	PT	2.00	$3.87	$7.74	MAR	59
metolachlor+atrazine	QT	1.50	$8.13	$12.19	MAR	17
ametryn	LB	2.00	$5.58	$11.16	APR	139
INSECTICIDES:						
chlorpyrifos	LB	7.00	$1.70	$11.90	MAR	72
TOTAL:				$42.99		

Figure 4. Corn Conservation Tillage (Gramoxone Extra), Chemical Table

For this example, it stands to reason that the farmer would be able to reduce $0.35 per acre on chemical costs by using paraquat. The numbers at the right hand side of the table represent the chemical codes. Therefore, Gramoxone Extra is referred by its code 59 and Roundup Ultra by 109. In order to get the new results, the user needs to type the new chemical code into the table and change the application rate only. The new figures will come into view automatically.

Changing Levels of Inputs and Quality: Higher quality of production inputs should bring about higher enterprise efficiency. In addition, extra income can be generated along with higher profits. BUDSYS uses spreadsheet technology to handle the changes on production inputs. Tasks such as inserting a new row, deleting an existing row, changing variables, and changing labels are very well performed by MS-Excel®. Other spreadsheet features can be used to manage a budget template. The more expert the user, the more features can be used and added to BUDSYS. The illustrations below suggest that raising steer calves in the winter on small grain pasture is more profitable than raising them on overseeded bermudagrass:

ASS

ESTIMATED COSTS AND RETURNS PER HEAD

BEGINNING WEIGHT (LBS):	450.00		NUMBER OF DAYS:	150 DAYS	
ENDING WEIGHT (LBS):	787.50		AVG. DAILY GAIN:	2.25 LBS	
ENDING WEIGHT W/ SHRINKAGE (LBS):	763.88		DEATH LOSS:	3.00 %	

	UNIT	QUANTITY	PRICE OR COST/UNIT	TOTAL PER HEAD	YOUR FARM
1. GROSS RECEIPTS					
STEER	LBS	787.50	$0.85	$669.38	_____
TOTAL RECEIPTS:				$669.38	_____
2. VARIABLE COSTS					
STEER CALF	LBS	450.00	$1.05	$472.50	_____
PROCUREMENT			$3.000		
ORDER BUYING	CWT	4.50	$0.30	$1.35	_____
HAULING	MILE	70.00	$1.80	$1.35	_____
TOTAL CALF-PURCHASE COSTS:				$475.20	_____
FEED					
RYE-BERMUDAGRASS PASTURE	ACRE	0.50	$65.14	$32.57	_____
HAY 11.5 LBS/DAY; 60 DAYS	TON	0.35	$75.00	$26.25	_____
CORN 7 LBS; 60 DAYS	BU	7.50	$3.25	$24.38	_____
COTTON SEED 3 LBS; 60 DAYS	CWT	1.80	$6.00	$10.80	_____
SALT & MINERALS	HEAD	1.00	$5.60	$5.60	_____
VETERINARY & MEDICATION	HEAD	1.00	$8.00	$8.00	_____
GROWTH PROMOTANT	HEAD	1.00	$3.00	$3.00	_____
FACILITIES & EQUIPMENT	HEAD	1.00	$2.41	$2.41	_____
MACHINERY	HEAD	1.00	$1.56	$1.56	_____
LABOR	HRS	3.00	$8.00	$24.00	_____
INTEREST ON OP. CAP.	DOL.	$294.89	9.0%	$26.54	_____
MARKETING					
SALES COMISSION	HEAD	1.00	$10.00	$10.00	_____
SHRINK	DOL.	$669.38	3.00%	$20.08	_____
TOTAL OPERATING COSTS:				$195.19	_____
TOTAL VARIABLE COSTS:				$670.39	_____
3. INCOME ABOVE VARIABLE COSTS:				**-$1.01**	_____

Figure 5. Wintering Lightweight Steers on Rye-Bermudagrass, Corn and Hay

STEERS ON SMALL GRAIN PASTURE

ESTIMATED COSTS AND RETURNS PER HEAD

BEGINNING WEIGHT (LBS):	450.00		NUMBER OF DAYS:	150 DAYS	
ENDING WEIGHT (LBS):	825.00		AVG. DAILY GAIN:	2.50 LBS	
ENDING WEIGHT W/ SHRINKAGE (LBS):	800.25		DEATH LOSS:	3.00 %	

	UNIT	QUANTITY	PRICE OR COST/UNIT	TOTAL PER HEAD	YOUR FARM
1. GROSS RECEIPTS					
STEER	LBS	825.00	$0.85	$701.25	_____
TOTAL RECEIPTS:				**$701.25**	_____
2. VARIABLE COSTS					
STEER CALF	LBS	450.00	$1.05	$472.50	_____
PROCUREMENT					
ORDER BUYING	CWT	4.50	$0.30	$1.35	_____
HAULING	MILE	70.00	$1.80	$1.35	_____
TOTAL CALF-PURCHASE COSTS:				**$475.20**	_____
FEED					
SMALL GRAIN PASTURE	ACRE	0.50	$52.57	$26.29	_____
HAY 11.5 LBS/DAY; 30 DAYS	TON	0.175	$75.00	$13.13	_____
CORN 3.5 LBS; 30 DAYS	BU	2.00	$3.25	$6.50	_____
SALT & MINERALS	HEAD	1.00	$1.50	$1.50	_____
VETERINARY & MEDICATION	HEAD	1.00	$8.00	$8.00	_____
GROWTH PROMOTANT	HEAD	1.00	$3.00	$3.00	_____
FACILITIES & EQUIPMENT	HEAD	1.00	$2.41	$2.41	_____
MACHINERY	HEAD	1.00	$1.56	$1.56	_____
LABOR	HRS	3.00	$8.00	$24.00	_____
INTEREST ON OP. CAP.	DOL.	$268.80	9.0%	$24.19	_____
MARKETING					
SALES COMISSION	HEAD	1.00	$10.00	$10.00	_____
SHRINK	DOL.	$701.25	3.0%	$21.04	_____
TOTAL OPERATING COSTS:				**$141.62**	_____
TOTAL VARIABLE COSTS:				**$616.82**	_____
3. INCOME ABOVE VARIABLE COSTS:				**$84.43**	_____

Figure 6. Wintering Lightweight Steers on Small Grain Pasture, Corn and Hay

Based on the budget results, a farmer will be better off raising his cattle on small grain pasture. The rates of weight gain implied on both budgets are not the same. By entering a different Average Daily Gain on the budget template, the user will notice a change in the Ending Weight. Steers on small grain pasture will gain 2.5 lbs per day compared to 2.25 lbs on overseeded bermudagrass. In this case, a higher feed efficiency will bring about a higher income for the operation.

Operating costs will also differ due to different feed combination of hay, corn, salt, minerals, cotton seed, and pasture. To achieve the feed efficiency desired, the user must select the appropriate production inputs and calculate the appropriate quantities. The pasture cost is associated with the operating cost on the forage budget template. Therefore, it is necessary that a connection (link) be established between the steer budget template and the forage budget template.

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6. Conclusion

BUDSYS has been developed by the Department of Agricultural and Applied Economics, Clemson University, and is based on the Oklahoma State University Enterprise Budget Generator and Auburn University Enterprise Budgets. It has been planned to work as a small system in which users can manage all the information necessary to create and maintain enterprise budgets. Livestock budgets differ slightly from crop budgets since it is not required to have the chemical and seed tables updated from the master file. In order to make this report beneficial to any kind of reader, a summary of the budget categories and major terms are presented as follow:

Your Farm	The column "YOUR FARM" was exclusively designed for inclusion of data based on farm records to reflect current conditions.
Prices	Prices received for the various crops are estimates made a year in advance based on outlook projections and projected government program payments as applied to South Carolina.
Variable Costs	These are incurred only if production takes place for that analyzed enterprise. Most of the costs involved in this section are dependent on yield level and the size of the farm operation. Some of the costs are: seed, fertilizer, pasture, chemicals, machine operation and maintenance, labor, interest on operating capital, and irrigation.
Fixed Costs	These costs are incurred regardless of whether production occurs. Fixed costs include: depreciation, taxes, insurance, and interest on machinery investment and irrigation system. These costs are considered to be "fixed" because they generally remain the same within a production period and do not vary with output.
Other Costs	A general farm overhead cost of 8 percent of total variable costs is also included. This is a "catch-all" cost that includes telephone, utilities and contingencies. Additional land is used in case the farmer requires to rent extra land to produce the projected number of acres and/or animals. Land rent is also listed as a reminder that there is an "opportunity charge" associated with the use of the land.
Income Above Variable Costs (IAVC)	The total variable costs are subtracted from the gross receipts. This figure indicates the income above operating cost and is normally used to determine the number of acres and/or animals of each enterprise to farm.
Net Returns to Risk and Management	This is the normal stopping point in the construction of these budgets. Purchased inputs and owned resources have paid their share. This figure is sometimes referred to as profit; however, it is more correct to call it a return above all resource costs except management.

Cost Per Unit of Production	Breakeven prices and breakeven yields are shown on all budgets where they are possible. This table will help analyze the responsiveness of yields (quantities, weights, percent crop) and prices using IAVC (Total Variable Costs) and Net Returns (Total Costs) as comparative units.
Net Returns Above Variable Costs at Different Yields and Prices	This table allows the producer to gain a better understanding about potential returns when prices and yields (quantities, weights, percent crop) are adjusted higher or lower than the assumed figures. This information will help the producer to evaluate the risk involved in producing each enterprise.

Breakeven analysis and potential returns for different prices and quantities are important mechanisms for helping farm managers make better decisions under uncertainty. The use of BUDSYS can be extended to other economic analysis by creating new formulas into the budget templates. It is up to the user to implement new features into BUDSYS.