March 2013

INTRODUCTION AND USE GUIDELINES
2013 GEORGIA COTTON COSTS AND RETURN BUDGET ESTIMATES

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Annual enterprise budget estimates are intended as a general guide for planning and decision making. Estimates are prepared in cooperation with, and input from, the UGA Extension Cotton Team, County Extension Agents, and seed and chemical industry representatives. While great care is taken to prepare these estimates as close to "typical Georgia farm" situations as possible, there can be great variability in yield and costs among individual farms.

Seed

Seed use is determined based on row spacing and seed "drop rate" or the number of seed per foot of row. We assume 36-inch row spacing and 2 to 3 seed per foot for conventional tillage cotton and 2 ½ to 3 seed per foot for conservation tillage (strip-till) production.

Row spacing and seed per foot determines the number of seed planted per acre. Cost per acre is calculated based on the cost of seed per bag, the number of seed per bag, and the number of seed planted per acre. For varieties used by Georgia producers, Monsanto/Deltapine is 250K seed per bag, Dow/Phytogen is 230K per bag, and Bayer CropScience/Fibermax and Stoneville is 220K per bag. The average of all 3 would be 233,333 seeds per bag and the cost per bag assumed in the budgets is the average of all 3 including technology fees and seed treatment for thrips control.

Price and Yield

A yield of 750 pounds per acre is assumed for non-irrigated production and 1,200 pounds per acre for irrigated production. While some farms and some locations may achieve higher or lower than this, these yields (750 and 1,200) are thought to be realistic and achievable yield goals for most producers.

A budgeted "planning price" of 83.5 cents per pound is assumed. This price is the expected season average price for cotton based on good risk-management marketing decisions and World supply/demand conditions at the time the budgets were prepared. During the marketing and growing season, pricing opportunities may be higher or lower than this but this is the expected average.

Land Rent

We do not include land rent directly in the budgets. Rent can vary widely based on many factors including location, soil productivity, expected income, and competition in the area. We do, however, include land rent as a factor in the "sensitivity analysis" discussed later.

Crop Insurance

Over 90% of Georgia's cotton acreage planted is insured. The estimated premium shown in the budget is an average of Yield Coverage (APH) and Revenue Coverage (CRC) at the 65 to 70% coverage level for 5 to 6 representative cotton counties. Some counties and farms may be higher or lower than the estimate shown based on individual history.

Fertilizers

Soil pH and fertility varies from farm to farm or even field to field. We assume a medium to medium-high soil test and fertilizer (P and K) use based on UGA Extension recommendations. Nitrogen use is

based on the yield goal in the budget but will also vary by soil type. Fertilizer prices shown are based on a survey of dealers as of November 2012 through March 2013.

Weed Control

We assume a herbicide program that is managing for control of glyphosate-resistant Palmer Amaranth (pig weed). This is an expensive regime. In the budget, cost estimates are shown by time of application (burn-down, PPI, PRE, POST, DIRECT, etc.). While materials used and time of application may vary from situation to situation, when summing up for the entire year, the total cost for the season may not vary more than 10% from the estimate shown. Where applicable, we estimate costs assuming the Monsanto rebate program on the use of glyphosate and residual herbicides.

Insect Control

We assume a seed treatment for thrips control and this is included in the cost of seed. Therefore, we assume no in-furrow or foliar application is made for thrips. We are assuming B2 or W seed technology so we also assume no spray treatments will be needed for caterpillar pests. We do, however, budget 2 sprays for control of stinkbugs. While this will be adequate in most situations, it may not be for all.

Irrigation

On budgets for irrigated production, the number of applications shown is considered to be typical for a normal year without prolonged periods of drought. The cost per application assumes 1" applications and is the average of electric and diesel systems. The cost per application is variable cost only—fuel and/or electricity for pumping water and moving the pivot, labor, and repairs and maintenance on the motor, pump, and pivot.

Machinery and Equipment and Labor

Fuel, repairs, and labor depend on type and size of machinery and equipment used and the production practices followed. We assume the farmer owns all of his/her equipment and utilizes no custom hire. Space is provided, however, to enter the cost of custom spray applications and custom harvest, if applicable. A list of machinery and equipment used and field operations performed is shown on the second page of the budget. This can be modified using the spreadsheet version of the budget. Based on the production practices followed and acres/hour for each job (on page 2 of each budget), fuel and lube, repairs, and labor cost per acre are calculated.

Page 2 of each budget shows the estimated annual repair and maintenance cost for each item of machinery and equipment. Repairs and maintenance typically average about 2 ½ to 3% of new cost but can be lower earlier in the life of the item and higher as the item ages. A share of the annual repair cost is prorated to the cotton crop based on use of the item in cotton.

Page 2 of each budget estimates the per-job and total machinery field time (time of operation per acre). Labor time required is always more than machine time due to travel, setup and take down, and materials (seed, chemicals, etc.) handling, etc. This additional labor requirement is accounted for by the LT/MT factor (the ratio of total labor time to actual in-field machine operation time) shown on page 1 of the budget. An LT/MT of 1.55, for example, would mean that for every hour in the field just over another ½ hour is spent on other tasks related to machine time including travel, inputs handling, equipment adjustment, down time, etc.

Interest

Inputs (variable costs) are purchased with cash, on account with the input supply dealer, or with funds provided by a bank operating loan. We assume an operating loan is used to purchase inputs at an

annual rate of 6.5% for 6 months. The interest rate is shown in the budget and the number of months as a % of the year is shown (6/12 = .50).

Ginning and Warehousing

The costs assumed for ginning and warehousing are shown. Ginning is budgeted at 8.5 cents per pound but can typically vary from 8 cents to 9 cents. Warehouse charges include 30 days storage, receiving, and load-out for a total of $10.50 per bale. An average bale weight of 498 lbs is assumed. Other costs include classing and state and national cotton organization fees.

These costs including ginning total 11.94 cents per pound-- $89.55 per acre (for 750-lb non-irrigated production) and $143.28 per acre (for 1,200-lb irrigated production). This cost is then reduced/adjusted by the value of cottonseed. The amount of cottonseed is determined by the "gin turn-out" or T/O. A T/O of 38% is assumed. Adjusting for trash and moisture, this equates to approximately 1.3 to 1.4 lbs of seed per pound of lint yield.

Cottonseed is valued at $200 per ton. This equates to approximately $103 per acre on non-irrigated production (750-lb lint yield and approx. 1,020-lb cottonseed yield) and $164 per acre on irrigated production (1,200-lb lint yield and approx. 1,640-lb cottonseed yield). This value of cottonseed is deducted from the costs of ginning, warehousing, etc. to arrive at a net cost per acre.

At $200 per ton for cottonseed, the cotton farmer is actually receiving back a rebate of approximately $21 per acre for irrigated production and $13 per acre for non-irrigated.

Net Return Above Variable Cost

The Net Return Above Variable Cost is an estimate of income per acre remaining to pay all other expenses including all fixed costs, overhead, and debt servicing. It is the income to reward machinery and equipment, irrigation (if applicable), overhead and miscellaneous expenses, land, and the farm owner/operators labor and management.

Fixed Costs

Annual fixed costs include depreciation, interest, and insurance on machinery and equipment and irrigation if applicable. Annual fixed costs are a function of (1) the number of years the item is used and (2) its dollar value at the end of that use. These costs are expressed (estimated) as a percentage of the new price of the item. These costs are then prorated to the cotton enterprise based on the percentage of total annual use in cotton.

For example, if an item will be used 10 years and be worth 25% of its original value at the end of 10 years, and if the rate of interest is 6.5% and insurance is .5% ($5 per $1,000 of new value), the annual fixed costs are estimated as:

Depreciation = (1 - .25) / 10 = .075 = 7.5%
Interest and Insurance = (1 + .25) /2 x .07 = .0438 = 4.38%
Total = 11.88%

If the new purchase price of the item were $90,000, the annual fixed cost would be estimated at $10,692 ($90,000 x 11.88%). If the item were used 60% of the time in cotton, the fixed cost to cotton would be $6,415. If there are 900 acres of cotton, this would be $7.13 per acre.

Sensitivity Analysis

Page 2 of the budget shows the Net Return Above Variable Cost at varying prices and yields. Price and yield shown are varied higher and lower than the budget price and yield. The Net Return is shown at

varying amounts of land rent. This allows the user to see the ability to pay land rent and all other variable costs depending on changes and risk in price and yield.

Spreadsheet Budgets and Crop Comparison Tool (CCT)

In addition to the print version in PDF format, the budgets are also available in Microsoft Excel spreadsheet format. This allows users to change data and customize income, costs, and returns more closely to their specific farm situation. In Excel format, only the white cells can be changed. All other cells are protected.

The cotton budgets in Excel contain a "Weed Control Cost Calculator". This allows the user to build, calculate the cost per acre, and compare up to 3 weed control regimes side-by-side. Any one of the programs can then be "copy and paste" into the desired cotton budget.

Another valuable decision-aid is the Crop Comparison Tool (CCT). This is available in both PDF and Excel format. The CCT allows users to compare income, costs, and net returns of competing crops side-by-side. The CCT also contains detailed price and yield sensitivity analysis.

On the Web

The cotton budgets, other budgets, and the Crop Comparison Tool can be found on the web at:

http://www.ces.uga.edu/Agriculture/agecon/agecon.html

Click on "Printed Budgets" or "Computer Spreadsheet Budgets" then "Budgets in Microsoft Excel".

The cotton budgets can also be found on the UGA Cotton web page at:

http://www.ugacotton.com