

Hale/Swisher Crops Conference

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Cotton and Grain Sorghum Figures

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Question = If you assume price of cotton will be 71 cents, what does sorghum price need to be to switch to sorghum?

- Several ways to look at this situation.
- Today it means making a guess on several things, to determine what you should do.
- As time passes in the next few weeks, you will know more information to base your decision on..such as insurance prices and possibly additional contracts. Maybe you will have to consider T-Yields for the crop you do not have a good APH.
- More to it than just cotton and sorghum prices.

Question = If you assume price of cotton will be 71 cents, what does sorghum price need to be to switch to sorghum? (Irrigated)

- So we can go back to our algebra class and use it to solve this problem.
- Variables are Price(Cotton, Sorghum), Yield(Cotton, Sorghum) and Cost (Cotton, Sorghum). Also Seed Income for Cotton.
- What you want to know is:
- **What Sorghum Price makes Net Return for Sorghum = Net Return for Cotton**
- *Will use return above direct costs. Overhead costs are similar for both enterprises.

Your Equation?

- Net Returns Cotton = Net Returns Sorghum
- $NR_{Cotton} = (Price_{Cotton} \times Y_{cotton} + Seed\ Value) - Direct\ Cost$
- $NR_{Sorghum} = Price_{Sorghum} \times Y_{sorghum} - Direct\ Cost$
- What makes $NR_{Cotton} = NR_{Sorghum}$?
- At what Sorghum price do you make a switch?
- You have 7 Variables?
- Decide what you know the most about?
- Cost, Yields and then which price?

Solve for Price of Sorghum

Irrigated Cotton, Irrigated Sorghum

- Sorghum price = unknown.
- Assume we have better information about the other six.
- Cotton
 - Cotton Price \$0.71/lb
 - Cotton Yield 1,250 lbs/acre
 - Cotton Seed Value \$234/acre (\$260 per ton)
 - Direct Costs per acre \$707.31
- Sorghum
 - Sorghum Yield 55 cwt/acre
 - Direct Costs per acre \$344.17
 - Will solve our equation for price of Sorghum

Now our Algebra Problem. **Not rocket science.**
(Start with what we have in profitability budgets.)

$$(P_c \times Y_c + \text{Seed}) - \text{Cost}_c = P_s \times Y_s - \text{Cost}_s$$

$$(\$0.71 \times 1,250 + \$234) - \$707 = P_s \times 55 - \$344$$

So what price of Sorghum (P_s) makes the net returns for Sorghum the same as cotton..with these other numbers filled in?

So now just solve for P_s , Price of sorghum.

$$55P_s - 344 = 888 + 234 - 707$$

$$55P_s = 344 + 888 + 234 - 707$$

$$P_s = 759 / 55 = \$13.80$$

So now you know the answer!

- If you know that the price you will get for your 2013 cotton will be 71 cents with seed income of \$234/acre and you will make 1250 lbs and it will cost \$707 to produce and also that your sorghum yield will be 5,500 lbs and will cost \$340 to produce.....then you can easily calculate that if you sell your sorghum for \$13.80 or more per cwt, then you should be producing sorghum....unless you decide you need to consider a few other factors that might affect your decision.
- So the Algebra is the easy part!!
- There could be several other factors we have not considered.
- **Lots of Moving Parts!! That's the point I am trying to make.**

Other Combinations of Irrigated Sorghum and Irrigated Cotton
Prices that result in same Net Return
Calculated From South Plains Profitability Budgets
Find Budgets at: SouthPlainsProfit.tamu.edu

Cotton Price	Sorghum Price
\$0.55/Lb	\$10.16/Cwt
\$0.60/Lb	\$11.30/Cwt
\$0.65/Lb	\$12.44/Cwt
\$0.71/Lb	\$13.80/Cwt
\$0.75/Lb	\$14.71/Cwt
\$0.80/Lb	\$15.85/Cwt

See Handout

Current Markets

- December 2013 Cotton about \$0.82/Lb
At the money Put Sets floor about \$0.70/lb

December 2013 Corn about 5.65/Bu
Contracts at almost \$9.00/cwt

So market favors cotton..... now.

(With my yields, my costs, my cotton lint price and my cotton seed price.)

Not the final answer.

- Your yields and your costs will not likely be the same as I used. How about seed value? \$260 conservative?
- When it is a close call, you may decide to spread your risk with the diversification.
- And even if close to same returns, may be credit reasons involved.
- Your banker's preference.
- Or Insurance Guarantee likely to be a very important factor.
- Could be completely different price ratio in a month.
- Price you can lock in could be different than I used.

Other Irrigated Opportunities

- Corn, Sunflowers, Sesame, Guar, etc..
- Budgets available for starting point.

Profitability Spreadsheet (Handout)

- Cover Page—P.1
- Menu & Prices—P.2-3
- Irrigated Cotton and Sorghum Budgets P.3-5

SouthPlainsProfit.tamu.edu

Insurance Guarantee

- Insurance price determined in February for both cotton and sorghum.
- If December Futures for Cotton and Corn did not change between now and March 1, the insurance prices would be about \$0.80/lb for cotton and about \$10/Cwt for sorghum.
- Sorghum has good basis for Insurance Price.

Insurance Guarantee??*

- Irrigated

- Cotton APH $850 \times .80 \times .65 = \442

- Ratio of Guarantee/Preharvest Costs = $\$442/\$453 = .98$

- Sorghum using Hale County T-Yield 39.76 Cwt*

- $39.76 \times 10 \times .65 = \258.44

- Ratio of Guarantee/Preharvest Costs = $\$258/\$311 = .83$

Hale County Irrigated Sorghum T-Yield = 71 bushels

*Insurance prices will not be known until end of month. A 48 cwt APH will make Sorghum ratio equal 1.0.

Dryland Comparison

- Much the same for Net Return Question
- Additional Risk Factors may be more important for dryland T-yield better.
- Be very careful contracting dryland sorghum.
- Dryland T-Yield 26 bushels (13.52 cwt)
- Guarantee?

Cotton= $300 \times .80 \times .65 = \156 Ratio = $156/182 = .86$

Sorghum= $13.52 \times 10 \times .65 = \88 Ratio= $88/89 = .99$

Much to consider

- Profitability
- Risk (APH, T-Yields)
- Your projected yields and costs could be different than what I used.
- Your lender preferences.
- Available contracts.
- Prices during next few weeks.
- Disease problems need rotation.
- Giving you ideas as to how to address the problem.

iPhone/iPad App

- Cropcost
- Available from Apple App Store
- Search iPhone apps for Cropcost, Agrilife Extension
- Can calculate breakeven prices for cotton, sorghum, corn, wheat and peanuts.

Crop Cost

Main Menu



Add New Entry



Load Existing Entry



Contact Information

About 

Main Menu

Home Place

Save

Cotton (lbs):	1250.00
Seed:	\$70.00
Fertilizer:	\$90.00
Chemicals:	\$70.00
Irrigation Fuel:	\$105.00
Tractor Fuel:	\$22.00
Labor:	\$24.00
Crop Insurance:	\$30.00
Repairs:	\$32.00
Interest-operating:	\$12.00
Other:	\$1.00
Harvest:	\$80.00
Overhead:	\$200.00

Total: \$736.00**Variable Cost of Production: \$0.4288****Total Cost of Production: \$0.5888**

Cotton



Corn



Sorghum



Soybean



Peanut

Wheat

Agricultural Applications of Tablets and Smart Phones

- Workshop in Perryton – Call County Extension Office
- February 27
- 9:00 am – 4:00 pm
- Jay Yates and Jackie Smith
- Lab of iPads to learn basics
- Examine many useful apps
- Also discuss other platforms
- Registration Fee \$30
- Limited Registration
- See **SouthPlainsProfit.tamu** or call A&M Center
– 806-746-6101 ask for Viki

Download Spreadsheet

SouthPlainsProfit.tamu.edu

Crop Budgets

One excel file.

Sponsored by Texas Cotton State
Support Committee

Profitability Workshop

- Learn more about using the Profitability Spreadsheet.
- One Excel file with 30 budgets.
- March 19, 9:00 AM – 4:00 PM
- Demonstrate how to use the budgets for comparing different crop enterprises.
- Using breakeven prices in evaluating available marketing opportunities.
- Learn how to make it more accurately estimate your costs of production.
- Make sure you understand the basic skills in Excel that are required to get the most out of the spreadsheet.