



Cotton, Corn and Soybean Net Return Comparison Decision Aid

A Farm Planning/Decision Tool for Louisiana Growers

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The Cotton, Corn and Soybean Net Return Comparison Decision Aid is a spreadsheet-based decision tool developed to assist row crop producers in Louisiana in making production decisions based on expected net return comparisons between production of cotton, corn and soybeans, using alternative expectations related to variable production costs, expected crop yields and expected crop market prices. The decision tool contains five Excel worksheets which compares net returns above variable production costs for three alternative sets of crop production choices: (1) cotton versus corn, (2) cotton versus soybeans, and (3) corn versus soybeans.

Net returns above variable production costs are the appropriate values to use in making production decision comparisons among crops in the short run period of one crop year. For a given crop production year, fixed production expenses, including primarily equipment depreciation and interest, would not change as a result of which crops are produced in that year. Variable production costs are defined as those production expenses which would change based upon which crops are planted for production in that year. Land rent, if applicable, would also be included as a production cost in the net return calculation, due to the fact the many of the cropland leases are on a crop share basis and would change in value based upon the level of crop yield and market price. Therefore, net returns above variable production costs and land rent charges are calculated and the differences between these values gives an estimate of the net return advantage of one crop over the other at assumed levels of cost, yield and price.

Information required to be entered by the user for each crop includes: (a) variable production cost per acre, (b) expected crop yield per acre, and (c) crop share rent percentage or cash rent payment per acre. Data values which can be entered/changed by the user are in blue text. In addition, the user can change the range of cotton prices, cotton yields, corn prices and soybean prices evaluated by changing the first value (highlighted in blue) listed for each crop in the worksheet. The worksheet calculates net returns above variable costs and land rent for each crop and shows the difference between the two net returns in the table. Therefore, the values shown in the table can be interpreted as the advantage in net returns per acre for one crop (whose market prices are listed along the left side of the table) compared to the other crop (whose market prices are listed along the top of the table). For the range of market price combinations for which the crop on the left has a net return advantage over the other crop, those cell values with positive net return differences will be shaded in yellow. As values for variable cost, yield and rent are changed, the corresponding net return differences and highlighted cells with a net return advantage will change accordingly.

Worksheet 1 – Cotton versus Corn Net Return Comparison - 1

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
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Cell values in blue for costs, yield, rent and price can be changed by the user. 2/20/17

Values in the table represent the difference between cotton net returns and corn net returns above variable cost and rent.

Positive values highlighted in yellow indicate that cotton has a net return advantage over corn at that price, yield and cost level.

Cotton Net Return Advantage Compared to Corn Net Returns

Cotton Variable Costs = \$475 per acre

Cotton Share Rent = 20% crop share

Cotton Cash Rent = \$0 per acre

Corn Price = \$3.40 per bushel

Corn Variable Costs = \$407 per acre

Corn Expected Yield = 160 bushels per acre

Corn Share Rent = 20% crop share

Corn Cash Rent = \$0 per acre

Cotton Price (\$/lb)		Cotton Yield (lbs/acre)							
	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300
\$0.50	-143	-123	-103	-83	-63	-43	-23	-3	\$17
\$0.52	-129	-108	-87	-66	-46	-25	-4	\$17	\$38
\$0.54	-114	-93	-71	-50	-28	-6	\$15	\$37	\$58
\$0.56	-100	-78	-55	-33	-10	\$12	\$34	\$57	\$79
\$0.58	-86	-62	-39	-16	\$7	\$30	\$54	\$77	\$100
\$0.60	-71	-47	-23	\$1	\$25	\$49	\$73	\$97	\$121
\$0.62	-57	-32	-7	\$18	\$42	\$67	\$92	\$117	\$142
\$0.64	-42	-17	\$9	\$34	\$60	\$86	\$111	\$137	\$162
\$0.66	-28	-2	\$25	\$51	\$78	\$104	\$130	\$157	\$183
\$0.68	-14	\$14	\$41	\$68	\$95	\$122	\$150	\$177	\$204
\$0.70	\$1	\$29	\$57	\$85	\$113	\$141	\$169	\$197	\$225
\$0.72	\$15	\$44	\$73	\$102	\$130	\$159	\$188	\$217	\$246
\$0.74	\$30	\$59	\$89	\$118	\$148	\$178	\$207	\$237	\$266
\$0.76	\$44	\$74	\$105	\$135	\$166	\$196	\$226	\$257	\$287
\$0.78	\$58	\$90	\$121	\$152	\$183	\$214	\$246	\$277	\$308
\$0.80	\$73	\$105	\$137	\$169	\$201	\$233	\$265	\$297	\$329

Values in table equal to cotton net returns minus corn net returns above variable costs

Developed by Michael Salassi and Michael Deliberto

Department of Agricultural Economics and Agribusiness

Louisiana State University Agricultural Center

Data to be Entered:

- | | |
|----------|---|
| Cell F8 | Cotton variable cost, in dollars per acre |
| Cell F10 | Cotton share rent, in percent of crop share (if owned or cash rented, enter zero) |
| Cell F11 | Cotton cash rent, in dollars per acre (if owned or share rented, enter zero) |
| Cell L7 | Corn price, in dollars per bushel |
| Cell L8 | Corn variable cost, in dollars per acre |
| Cell L9 | Corn expected yield, in bushels per acre |
| Cell L10 | Corn share rent, in percent of crop share (if owned or cash rented, enter zero) |
| Cell L11 | Corn cash rent, in dollars per acre (if owned or share rented, enter zero) |
| Cell D18 | Minimum range of cotton price, in dollars per pound of lint |
| Cell E17 | Minimum range of cotton yield, in pounds of lint per acre |

Worksheet 2 – Cotton versus Corn Net Return Comparison - 2

2/20/17

Cell values in blue for costs, yield, rent and price can be changed by the user.

Values in the table represent the difference between cotton net returns and corn net returns above variable cost and rent.

Positive values highlighted in yellow indicate that cotton has a net return advantage over corn at that price, yield and cost level.

Cotton Net Return Advantage Compared to Corn Net Returns

Cotton Variable Costs = \$475 per acre

Cotton Expected Yield = 1,000 pounds per acre

Cotton Share Rent = 20% crop share

Cotton Cash Rent = \$0 per acre

Corn Variable Costs = \$407 per acre

Corn Expected Yield = 160 bushels per acre

Corn Share Rent = 20% crop share

Corn Cash Rent = \$0 per acre

Corn Price (\$/bu)

Cotton Price (\$/lb)

	\$3.20	\$3.45	\$3.70	\$3.95	\$4.20	\$4.45	\$4.70	\$4.95	\$5.20
\$0.55	-38	-70	-102	-134	-166	-198	-230	-262	-294
\$0.57	-22	-54	-86	-118	-150	-182	-214	-246	-278
\$0.59	-6	-38	-70	-102	-134	-166	-198	-230	-262
\$0.61	\$10	-22	-54	-86	-118	-150	-182	-214	-246
\$0.63	\$26	-6	-38	-70	-102	-134	-166	-198	-230
\$0.65	\$42	\$10	-22	-54	-86	-118	-150	-182	-214
\$0.67	\$58	\$26	-6	-38	-70	-102	-134	-166	-198
\$0.69	\$74	\$42	\$10	-22	-54	-86	-118	-150	-182
\$0.71	\$90	\$58	\$26	-6	-38	-70	-102	-134	-166
\$0.73	\$106	\$74	\$42	\$10	-22	-54	-86	-118	-150
\$0.75	\$122	\$90	\$58	\$26	-6	-38	-70	-102	-134
\$0.77	\$138	\$106	\$74	\$42	\$10	-22	-54	-86	-118
\$0.79	\$154	\$122	\$90	\$58	\$26	-6	-38	-70	-102
\$0.81	\$170	\$138	\$106	\$74	\$42	\$10	-22	-54	-86
\$0.83	\$186	\$154	\$122	\$90	\$58	\$26	-6	-38	-70
\$0.85	\$202	\$170	\$138	\$106	\$74	\$42	\$10	-22	-54

Values in table equal to cotton net returns minus corn net returns above variable costs

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Data to be Entered:

Cell F8	Cotton variable cost, in dollars per acre
Cell F9	Cotton expected yield, in pounds of lint per acre
Cell F10	Cotton share rent, in percent of crop share (if owned or cash rented, enter zero)
Cell F11	Cotton cash rent, in dollars per acre (if owned or share rented, enter zero)
Cell L8	Corn variable cost, in dollars per acre
Cell L9	Corn expected yield, in bushels per acre
Cell L10	Corn share rent, in percent of crop share (if owned or cash rented, enter zero)
Cell L11	Corn cash rent, in dollars per acre (if owned or share rented, enter zero)
Cell D18	Minimum range of cotton price, in dollars per pound of lint
Cell E17	Minimum range of corn price, in dollars per bushel

Worksheet 3 – Cotton versus Soybean Net Return Comparison - 1

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Data to be Entered:

- Cell F8 Cotton variable cost, in dollars per acre
- Cell F10 Cotton share rent, in percent of crop share (if owned or cash rented, enter zero)
- Cell F11 Cotton cash rent, in dollars per acre (if owned or share rented, enter zero)
- Cell L7 Soybean price, in dollars per bushel
- Cell L8 Soybean variable cost, in dollars per acre
- Cell L9 Soybean expected yield, in bushels per acre
- Cell L10 Soybean share rent, in percent of crop share (if owned or cash rented, enter zero)
- Cell L11 Soybean cash rent, in dollars per acre (if owned or share rented, enter zero)
- Cell D18 Minimum range of cotton price, in dollars per pound of lint
- Cell E17 Minimum range of cotton yield, in pounds of lint per acre

Worksheet 4 – Cotton versus Soybean Net Return Comparison - 2

Cell values in blue for costs, yield, rent and price can be changed by the user.

2/20/17

Values in the table represent the difference between cotton net returns and soybean net returns above variable cost and rent.

Positive values highlighted in yellow indicate that cotton has a net return advantage over soybeans at that price, yield and cost level.

Cotton Net Return Advantage Compared to Soybean Net Returns

Cotton Variable Costs = \$475 per acre
Cotton Expected Yield = 1,000 pounds per acre
Cotton Share Rent = 20% crop share
Cotton Cash Rent = \$0 per acre

Soybean Variable Costs = \$305 per acre
Soybean Expected Yield = 50 bushels per acre
Soybean Share Rent = 20% crop share
Soybean Cash Rent = \$0 per acre

Soybean Price (\$/bu)

Cotton Price (\$/lb)

	\$9.00	\$9.25	\$9.50	\$9.75	\$10.00	\$10.25	\$10.50	\$10.75	\$11.00
\$0.55	-90	-100	-110	-120	-130	-140	-150	-160	-170
\$0.57	-74	-84	-94	-104	-114	-124	-134	-144	-154
\$0.59	-58	-68	-78	-88	-98	-108	-118	-128	-138
\$0.61	-42	-52	-62	-72	-82	-92	-102	-112	-122
\$0.63	-26	-36	-46	-56	-66	-76	-86	-96	-106
\$0.65	-10	-20	-30	-40	-50	-60	-70	-80	-90
\$0.67	\$6	-4	-14	-24	-34	-44	-54	-64	-74
\$0.69	\$22	\$12	\$2	-8	-18	-28	-38	-48	-58
\$0.71	\$38	\$28	\$18	\$8	-2	-12	-22	-32	-42
\$0.73	\$54	\$44	\$34	\$24	\$14	\$4	-6	-16	-26
\$0.75	\$70	\$60	\$50	\$40	\$30	\$20	\$10	\$0	-10
\$0.77	\$86	\$76	\$66	\$56	\$46	\$36	\$26	\$16	\$6
\$0.79	\$102	\$92	\$82	\$72	\$62	\$52	\$42	\$32	\$22
\$0.81	\$118	\$108	\$98	\$88	\$78	\$68	\$58	\$48	\$38
\$0.83	\$134	\$124	\$114	\$104	\$94	\$84	\$74	\$64	\$54
\$0.85	\$150	\$140	\$130	\$120	\$110	\$100	\$90	\$80	\$70

Values in table equal to cotton net returns minus soybean net returns above variable costs

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Data to be Entered:

- | | |
|----------|--|
| Cell F8 | Cotton variable cost, in dollars per acre |
| Cell F9 | Cotton expected yield, in pounds of lints per acre |
| Cell F10 | Cotton share rent, in percent of crop share (if owned or cash rented, enter zero) |
| Cell F11 | Cotton cash rent, in dollars per acre (if owned or share rented, enter zero) |
| Cell L8 | Soybean variable cost, in dollars per acre |
| Cell L9 | Soybean expected yield, in bushels per acre |
| Cell L10 | Soybean share rent, in percent of crop share (if owned or cash rented, enter zero) |
| Cell L11 | Soybean cash rent, in dollars per acre (if owned or share rented, enter zero) |
| Cell D18 | Minimum range of cotton price, in dollars per pound of lint |
| Cell E17 | Minimum range of soybean price, in dollars per bushel |

Worksheet 5 – Corn versus Soybean Net Return Comparison

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Cell values in blue for costs, yield, rent and price can be changed by the user. 2/20/17

Values in the table represent the difference between corn net returns and soybean net returns above variable cost and rent.

Positive values highlighted in yellow indicate that corn has a net return advantage over soybeans at that price, yield and cost level.

Corn Net Return Advantage Compared to Soybean Net Returns

Corn Variable Costs =	\$407 per acre	Soybean Variable Costs =	\$305 per acre
Corn Expected Yield =	160 bushels per acre	Soybean Expected Yield =	50 bushels per acre
Corn Share Rent =	20% crop share	Soybean Share Rent =	20% crop share
Corn Cash Rent =	\$0 per acre	Soybean Cash Rent =	\$0 per acre

Corn Price (\$/bu)	Soybean Price (\$/bu)								
	\$8.80	\$9.05	\$9.30	\$9.55	\$9.80	\$10.05	\$10.30	\$10.55	\$10.80
\$3.00	-70	-80	-90	-100	-110	-120	-130	-140	-150
\$3.25	-38	-48	-58	-68	-78	-88	-98	-108	-118
\$3.50	-6	-16	-26	-36	-46	-56	-66	-76	-86
\$3.75	\$26	\$16	\$6	-4	-14	-24	-34	-44	-54
\$4.00	\$58	\$48	\$38	\$28	\$18	\$8	-2	-12	-22
\$4.25	\$90	\$80	\$70	\$60	\$50	\$40	\$30	\$20	\$10
\$4.50	\$122	\$112	\$102	\$92	\$82	\$72	\$62	\$52	\$42
\$4.75	\$154	\$144	\$134	\$124	\$114	\$104	\$94	\$84	\$74
\$5.00	\$186	\$176	\$166	\$156	\$146	\$136	\$126	\$116	\$106
\$5.25	\$218	\$208	\$198	\$188	\$178	\$168	\$158	\$148	\$138
\$5.50	\$250	\$240	\$230	\$220	\$210	\$200	\$190	\$180	\$170
\$5.75	\$282	\$272	\$262	\$252	\$242	\$232	\$222	\$212	\$202
\$6.00	\$314	\$304	\$294	\$284	\$274	\$264	\$254	\$244	\$234
\$6.25	\$346	\$336	\$326	\$316	\$306	\$296	\$286	\$276	\$266
\$6.50	\$378	\$368	\$358	\$348	\$338	\$328	\$318	\$308	\$298
\$6.75	\$410	\$400	\$390	\$380	\$370	\$360	\$350	\$340	\$330

Values in table equal to corn net returns minus soybean net returns above variable costs

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Data to be Entered:

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|----------|--|
| Cell F8 | Corn variable cost, in dollars per acre |
| Cell F9 | Corn expected yield, in pounds of lint per acre |
| Cell F10 | Corn share rent, in percent of crop share (if owned or cash rented, enter zero) |
| Cell F11 | Corn cash rent, in dollars per acre (if owned or share rented, enter zero) |
| Cell L8 | Soybean variable cost, in dollars per acre |
| Cell L9 | Soybean expected yield, in bushels per acre |
| Cell L10 | Soybean share rent, in percent of crop share (if owned or cash rented, enter zero) |
| Cell L11 | Soybean cash rent, in dollars per acre (if owned or share rented, enter zero) |
| Cell D18 | Minimum range of corn price, in dollars per bushel |
| Cell E17 | Minimum range of soybean price, in dollars per bushel |



Michael A. Deliberto can be contacted in the Department of Agricultural Economics and Agribusiness at (225) 578-7267 or by emailing mdeliberto@agcenter.lsu.edu.