



Cotton, Corn and Soybean Net Return Comparison Decision Aid

A Farm Planning/Decision Tool for Louisiana Growers

Michael A. Deliberto and Brian M. Hilbun
*Louisiana State University Agricultural Center
Department of Agricultural Economics & Agribusiness*

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 Returns Comparison - 1

Cotton Net Return Advantage Compared to Corn Net Returns									
Cotton Variable Costs =	\$749	per acre			Corn Price =	\$4.30 per bushel			
					Corn Variable Costs =	\$621 per acre			
Cotton Share Rent =	20%	crop share			Corn Expected Yield =	160 bushels per acre			
Cotton Cash Rent =	\$0	per acre			Corn Share Rent =	20% crop share			
					Corn Cash Rent =	\$0 per acre			
Cotton Yield (lbs/acre)									
Cotton Price (\$/lb)	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,350	1,400
\$0.65	-158	-132	-106	-80	-54	-28	-2	\$24	\$50
\$0.67	-142	-116	-89	-62	-35	-8	\$18	\$45	\$72
\$0.69	-126	-99	-71	-44	-16	\$12	\$39	\$67	\$94
\$0.71	-110	-82	-54	-25	\$3	\$32	\$60	\$88	\$117
\$0.73	-94	-65	-36	-7	\$22	\$52	\$81	\$110	\$139
\$0.75	-78	-48	-18	\$12	\$42	\$72	\$102	\$132	\$162
\$0.77	-62	-32	-1	\$30	\$61	\$92	\$122	\$153	\$184
\$0.79	-46	-15	\$17	\$48	\$80	\$112	\$143	\$175	\$206
\$0.81	-30	\$2	\$34	\$67	\$99	\$132	\$164	\$196	\$229
\$0.83	-14	\$19	\$52	\$85	\$118	\$152	\$185	\$218	\$251
\$0.85	\$2	\$36	\$70	\$104	\$138	\$172	\$206	\$240	\$274
\$0.87	\$18	\$52	\$87	\$122	\$157	\$192	\$226	\$261	\$296
\$0.89	\$34	\$69	\$105	\$140	\$176	\$212	\$247	\$283	\$318
\$0.91	\$50	\$86	\$122	\$159	\$195	\$232	\$268	\$304	\$341
\$0.93	\$66	\$103	\$140	\$177	\$214	\$252	\$289	\$326	\$363
\$0.95	\$82	\$120	\$158	\$196	\$234	\$272	\$310	\$348	\$386
<i>Values in table equal to cotton net returns minus corn net returns above variable costs</i>									

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 Returns Comparison - 2

Cotton Net Return Advantage Compared to Corn Net Returns									
Cotton Variable Costs =	\$749	per acre			Corn Variable Costs =	\$621	per acre		
Cotton Expected Yield =	1,050	pounds per acre			Corn Expected Yield =	160	bushels per acre		
Cotton Share Rent =	20%	crop share			Corn Share Rent =	20%	crop share		
Cotton Cash Rent =	\$0	per acre			Corn Cash Rent =	\$0	per acre		
Corn Price (\$/bu)									
Cotton Price (\$/lb)	\$3.80	\$4.05	\$4.30	\$4.55	\$4.80	\$5.05	\$5.30	\$5.55	\$5.80
\$0.65	-68	-100	-132	-164	-196	-228	-260	-292	-324
\$0.67	-52	-84	-116	-148	-180	-212	-244	-276	-308
\$0.69	-35	-67	-99	-131	-163	-195	-227	-259	-291
\$0.71	-18	-50	-82	-114	-146	-178	-210	-242	-274
\$0.73	-1	-33	-65	-97	-129	-161	-193	-225	-257
\$0.75	\$16	-16	-48	-80	-112	-144	-176	-208	-240
\$0.77	\$32	\$0	-32	-64	-96	-128	-160	-192	-224
\$0.79	\$49	\$17	-15	-47	-79	-111	-143	-175	-207
\$0.81	\$66	\$34	\$2	-30	-62	-94	-126	-158	-190
\$0.83	\$83	\$51	\$19	-13	-45	-77	-109	-141	-173
\$0.85	\$100	\$68	\$36	\$4	-28	-60	-92	-124	-156
\$0.87	\$116	\$84	\$52	\$20	-12	-44	-76	-108	-140
\$0.89	\$133	\$101	\$69	\$37	\$5	-27	-59	-91	-123
\$0.91	\$150	\$118	\$86	\$54	\$22	-10	-42	-74	-106
\$0.93	\$167	\$135	\$103	\$71	\$39	\$7	-25	-57	-89
\$0.95	\$184	\$152	\$120	\$88	\$56	\$24	-8	-40	-72
Values in table equal to cotton net returns minus corn net returns above variable costs									

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 Returns Comparison - 1

Cotton Net Return Advantage Compared to Soybean Net Returns											
Cotton Variable Costs =	\$749	per acre		Soybean Price =	\$10.10	per bushel		Soybean Variable Costs =	\$450	per acre	
Cotton Share Rent =	20%	crop share		Soybean Expected Yield =	50	bushels per acre		Soybean Share Rent =	20%	crop share	
Cotton Cash Rent =	\$0	per acre		Soybean Cash Rent =	\$0	per acre					
		Cotton Yield (lbs/acre)									
Cotton Price (\$/lb)		1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,350	1,400	
\$0.65	-183	-157	-131	-105	-79	-53	-27	-1	\$25	\$25	
\$0.67	-167	-140	-113	-87	-60	-33	-6	\$21	\$47	\$47	
\$0.69	-151	-123	-96	-68	-41	-13	\$15	\$42	\$70	\$70	
\$0.71	-135	-107	-78	-50	-21	\$7	\$35	\$64	\$92	\$92	
\$0.73	-119	-90	-61	-31	-2	\$27	\$56	\$85	\$115	\$115	
\$0.75	-103	-73	-43	-13	\$17	\$47	\$77	\$107	\$137	\$137	
\$0.77	-87	-56	-25	\$5	\$36	\$67	\$98	\$129	\$159	\$159	
\$0.79	-71	-39	-8	\$24	\$55	\$87	\$119	\$150	\$182	\$182	
\$0.81	-55	-23	\$10	\$42	\$75	\$107	\$139	\$172	\$204	\$204	
\$0.83	-39	-6	\$27	\$61	\$94	\$127	\$160	\$193	\$227	\$227	
\$0.85	-23	\$11	\$45	\$79	\$113	\$147	\$181	\$215	\$249	\$249	
\$0.87	-7	\$28	\$63	\$97	\$132	\$167	\$202	\$237	\$271	\$271	
\$0.89	\$9	\$45	\$80	\$116	\$151	\$187	\$223	\$258	\$294	\$294	
\$0.91	\$25	\$61	\$98	\$134	\$171	\$207	\$243	\$280	\$316	\$316	
\$0.93	\$41	\$78	\$115	\$153	\$190	\$227	\$264	\$301	\$339	\$339	
\$0.95	\$57	\$95	\$133	\$171	\$209	\$247	\$285	\$323	\$361	\$361	
	<i>Values in table equal to cotton net returns minus soybean net returns above variable costs</i>										

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 Returns Comparison - 2

Cotton Net Return Advantage Compared to Soybean Net Returns											
Cotton Variable Costs =	\$749				per acre	Soybean Variable Costs =	\$450				per acre
Cotton Expected Yield =	1,050				pounds per acre	Soybean Expected Yield =	50				bushels per acre
Cotton Share Rent =	20%				crop share	Soybean Share Rent =	20%				crop share
Cotton Cash Rent =	\$0				per acre	Soybean Cash Rent =	\$0				per acre
Soybean Price (\$/bu)											
Cotton Price (\$/lb)	\$9.85	\$10.10	\$10.35	\$10.60	\$10.85	\$11.10	\$11.35	\$11.60	\$11.85	\$12.10	
\$0.65	-147	-157	-167	-177	-187	-197	-207	-217	-227	-237	
\$0.67	-130	-140	-150	-160	-170	-180	-190	-200	-210	-220	
\$0.69	-113	-123	-133	-143	-153	-163	-173	-183	-193	-203	
\$0.71	-97	-107	-117	-127	-137	-147	-157	-167	-177	-187	
\$0.73	-80	-90	-100	-110	-120	-130	-140	-150	-160	-170	
\$0.75	-63	-73	-83	-93	-103	-113	-123	-133	-143	-153	
\$0.77	-46	-56	-66	-76	-86	-96	-106	-116	-126	-136	
\$0.79	-29	-39	-49	-59	-69	-79	-89	-99	-109	-119	
\$0.81	-13	-23	-33	-43	-53	-63	-73	-83	-93	-103	
\$0.83	\$4	-6	-16	-26	-36	-46	-56	-66	-76	-86	
\$0.85	\$21	\$11	\$1	-9	-19	-29	-39	-49	-59	-69	
\$0.87	\$38	\$28	\$18	\$8	-2	-12	-22	-32	-42	-52	
\$0.89	\$55	\$45	\$35	\$25	\$15	\$5	-5	-15	-25	-35	
\$0.91	\$71	\$61	\$51	\$41	\$31	\$21	\$11	\$1	-9	-19	
\$0.93	\$88	\$78	\$68	\$58	\$48	\$38	\$28	\$18	\$8	-2	
\$0.95	\$105	\$95	\$85	\$75	\$65	\$55	\$45	\$35	\$25	\$15	
Values in table equal to cotton net returns minus soybean net returns above variable costs											

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 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 Returns Comparison

Corn Net Return Advantage Compared to Soybean Net Returns										
Corn Variable Costs =	\$621	per acre						Soybean Variable Costs =	\$450	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
Soybean Price (\$/bu)										
Corn Price (\$/bu)	\$9.85	\$10.10	\$10.35	\$10.60	\$10.85	\$11.10	\$11.35	\$11.60	\$11.85	
\$3.75	-85	-95	-105	-115	-125	-135	-145	-155	-165	
\$4.00	-53	-63	-73	-83	-93	-103	-113	-123	-133	
\$4.25	-21	-31	-41	-51	-61	-71	-81	-91	-101	
\$4.50	\$11	\$1	-9	-19	-29	-39	-49	-59	-69	
\$4.75	\$43	\$33	\$23	\$13	\$3	-7	-17	-27	-37	
\$5.00	\$75	\$65	\$55	\$45	\$35	\$25	\$15	\$5	-5	
\$5.25	\$107	\$97	\$87	\$77	\$67	\$57	\$47	\$37	\$27	
\$5.50	\$139	\$129	\$119	\$109	\$99	\$89	\$79	\$69	\$59	
\$5.75	\$171	\$161	\$151	\$141	\$131	\$121	\$111	\$101	\$91	
\$6.00	\$203	\$193	\$183	\$173	\$163	\$153	\$143	\$133	\$123	
\$6.25	\$235	\$225	\$215	\$205	\$195	\$185	\$175	\$165	\$155	
\$6.50	\$267	\$257	\$247	\$237	\$227	\$217	\$207	\$197	\$187	
\$6.75	\$299	\$289	\$279	\$269	\$259	\$249	\$239	\$229	\$219	
\$7.00	\$331	\$321	\$311	\$301	\$291	\$281	\$271	\$261	\$251	
\$7.25	\$363	\$353	\$343	\$333	\$323	\$313	\$303	\$293	\$283	
\$7.50	\$395	\$385	\$375	\$365	\$355	\$345	\$335	\$325	\$315	
Values in table equal to corn net returns minus soybean net returns above variable costs										

Data to be Entered:

- 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.