Overview of Farm Management Issues

2021 Row Crop Short Course December 8, 2021

> Brian Mills Agricultural Economist Mississippi State University





Outline

Mississippi Crop Production in 2021

Cost of Production Estimates for 2022

• Crop Returns Comparison



Mississippi Acreage

Table 1. Change in Crop Acreage from 2020 to 2021

Crop	2020 Acres	2021 Acres	Change
Corn	498,851	710,199	211,348
Upland Cotton	522,525	440,065	-82,460
Long Grain Rice	164,206	100,862	-63,344
Soybeans	2,077,049	2,204,635	127,587





Mississippi Land Values

 USDA NASS reported average land value for Mississippi of \$2,860/ac for 2021

• Increase of 1.4% compared to 2020

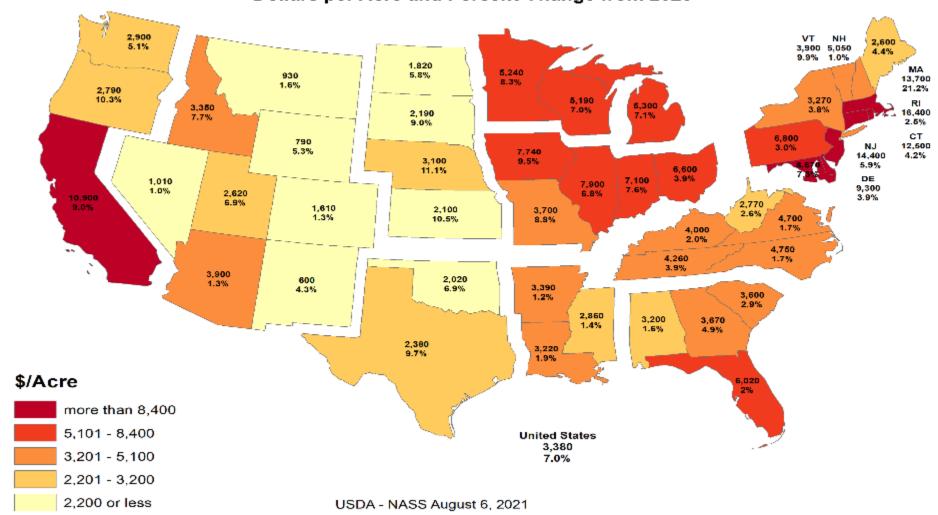
• U.S. average of \$3,380/ac and 7.0% increase from 2020



Land Values

2021 Farm Real Estate Value by State

Dollars per Acre and Percent Change from 2020



Mississippi Cash Rent

Table 2. Average Cash Rent for Mississippi in 2020 and 2021

			020 0010 2021
Land Type	2020	2021	% Change
Irrigated	\$143.78	\$148.94	4%
Non-Irrigated	\$60.40	\$61.67	2%



Mississippi Flood Damages 2021

• Significant flooding in June

 FSA collected data on acres that were damaged, destroyed, or prevented from planting

 MSU Extension estimated crop damages based on reported acres



Mississippi Flood Damages 2021

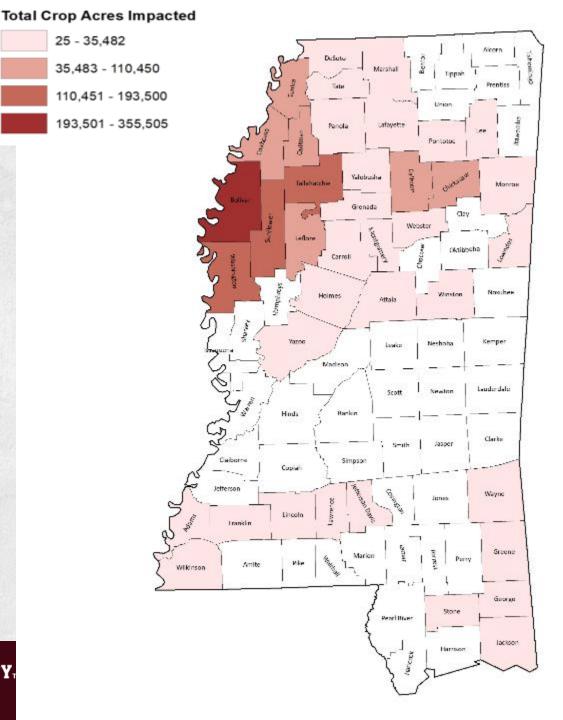
Table 3. Crop Acres Impacted and Damages from Adverse Weather in Mississippi in 2021

Crop	Acres Impacted	Estimated Damages
Corn	241,023	\$160,997,576
Cotton	117,055	\$72,991,131
Rice	69,107	\$37,797,161
Soybeans	1,017,547	\$569,039,148
Other	49,058	\$28,764,501
Total	1,493,789	\$869,589,517



Total Acres Impacted

- 39 counties and 31 different crops impacted
- 725,5615 damaged acres
- 695,380 destroyed acres
 - Row crops mostly replanted to soybeans



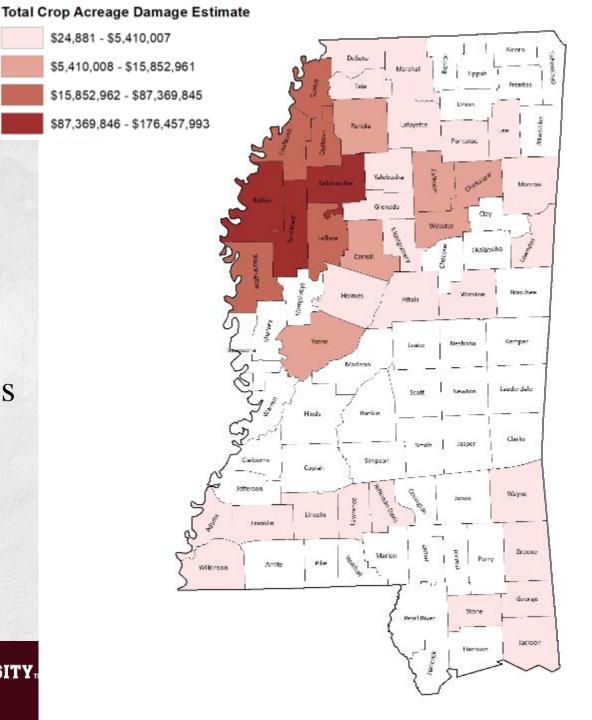
Total Crop Damages

Bolivar County had highest estimated damages with \$176,457,993

 Does not include acres damaged but not reported to FSA

input costs





MSU Cost of Production Estimates – 2022 Crop Year

 MSU produces yearly Enterprise and Planning budgets using MSU Budget Generator

• Survey Mississippi companies to determine costs of herbicide, pesticide, fertilizer, equipment, etc

 Multidisciplinary team develops budgets based on common production practices/recommendations



MSU Cost of Production Estimates Changes from Previous Year

- Some recommendation changes from previous year
- Input costs were up significantly from previous year
- Costs will vary for each producer
- Available at agecon.msstate.edu



Corn Input Costs

Table 4. Corn Input Costs for 2022 \$/ac

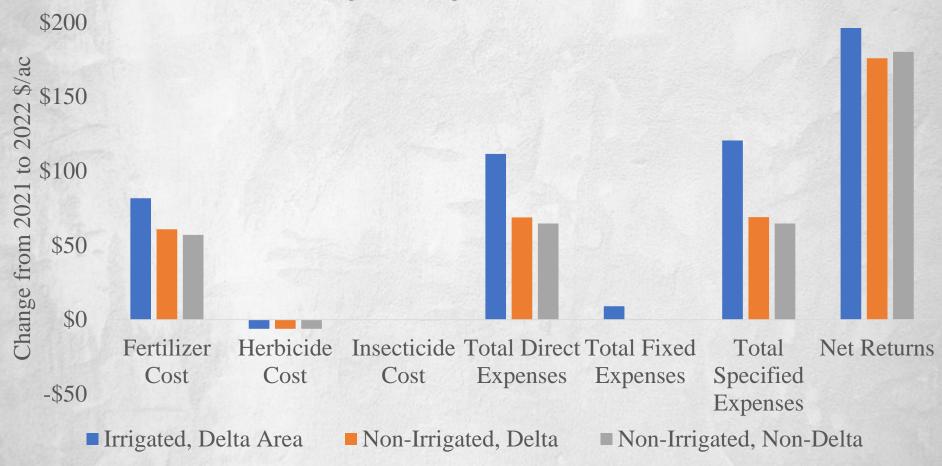
	Irrigated,	Irrigated,	Non-Irrigated,	Non-Irrigated,
Cost	Delta Area	Non-Delta	Delta	Non-Delta
Fertilizer Cost	\$262.10	\$197.39	\$205.56	\$197.39
Herbicide Cost	\$49.38	\$49.38	\$49.38	\$49.38
Insecticide Cost	\$4.92	\$7.13	\$4.92	\$7.13
Total Direct Expenses	\$676.01	\$567.00	\$522.65	\$516.45
Total Fixed Expenses	\$115.31	\$119.33	\$48.09	\$50.52
Total Specified				
Expenses	\$791.32	\$686.33	\$570.74	\$566.97
Net Returns	\$346.08	\$451.08	\$308.16	\$311.93
Expected Break-Even				
Price	\$3.60	\$3.12	\$3.36	\$3.34





Corn Input Costs

Corn Budget Changes from 2021 to 2022







Cotton Input Costs

Table 6. Cotton Input Costs for 2022 \$/ac

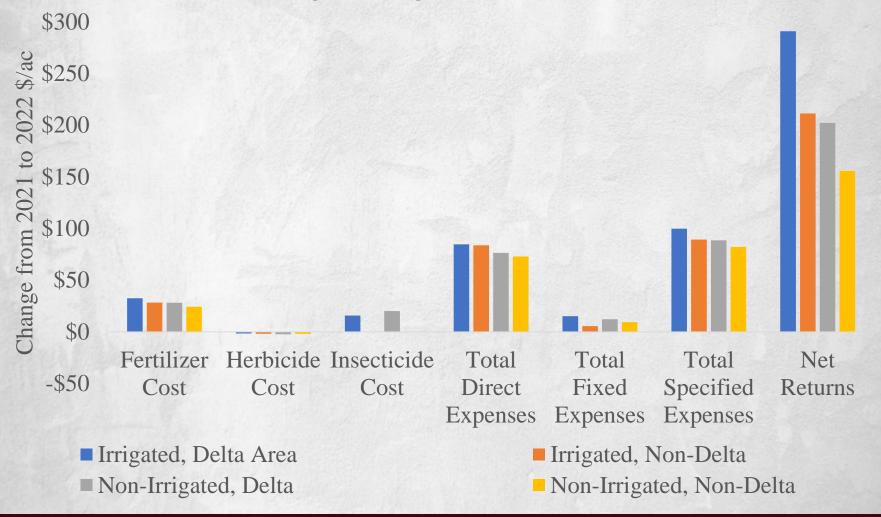
			Non-	Non-
	Irrigated,	Irrigated,	Irrigated,	Irrigated,
Cost	Delta Area	Non-Delta	Delta	Non-Delta
Fertilizer Cost	\$111.60	\$100.21	\$102.56	\$89.15
Herbicide Cost	\$89.24	\$76.12	\$88.46	\$76.12
Insecticide Cost	\$91.10	\$56.47	\$83.92	\$48.97
Total Specified Expenses	\$1,030.97	\$941.81	\$850.83	\$773.72
Net Returns	\$406.87	\$256.39	\$192.01	\$174.86





Cotton Input Costs

Cotton Budget Changes from 2021 to 2022







Rice Input Costs

Table 8. Rice Input Costs for 2022 \$/ac

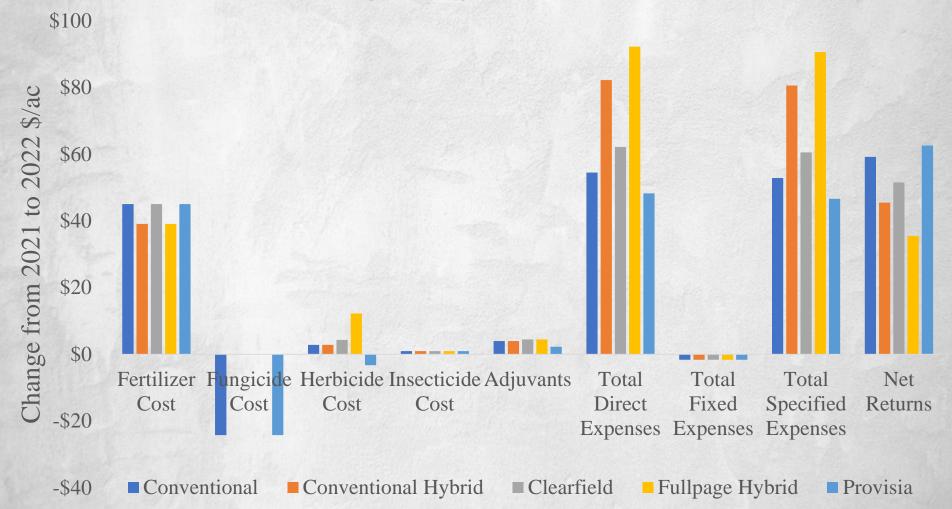
		Conventional		Fullpage	
Change in	Conventional	Hybrid	Clearfield	Hybrid	Provisia
Fertilizer Cost	\$152.10	\$133.33	\$152.10	\$133.33	\$152.10
Fungicide Cost	\$25.10	\$0.00	\$0.00	\$0.00	\$25.10
Herbicide Cost	\$142.37	\$142.37	\$133.97	\$156.50	\$101.26
Insecticide Cost	\$8.22	\$8.22	\$8.22	\$8.22	\$8.22
Adjuvants	\$12.49	\$12.16	\$20.72	\$20.39	\$17.37
Total Specified					
Expenses	\$899.19	\$964.56	\$951.93	\$1,011.02	\$929.57
Net Returns	\$28.81	\$79.44	-\$23.93	\$32.98	-\$24.77
Break-Even Price	\$5.62	\$5.36	\$5.95	\$5.62	\$5.96





Rice Input Costs

Rice Budget Changes from 2021 to 2022







Soybean Input Costs

Table 10. Soybean Input Costs for 2022 \$/ac

Cost	Irrigated, Delta Area	Irrigated, Non-Delta	Non-Irrigated, Delta	Non-Irrigated, Non-Delta
Fertilizer Cost	\$59.12	\$59.12	\$59.12	\$44.62
Herbicide Cost	\$86.12	\$53.22	\$95.09	\$85.20
Insecticide Cost	\$14.44	\$35.62	\$14.44	\$4.52
Total Specified Expenses	\$531.90	\$465.91	\$417.61	\$363.87
Net Returns Expected Break-Even Price	\$172.10 \$9.43	\$157.09 \$9.32	\$105.71 \$9.94	\$153.23 \$8.80





Soybean Input Costs

Soybean Budget Changes from 2021 to 2022



■ Irrigated, Delta Area
■ Irrigated, Non-Delta
■ Non-Irrigated, Delta
■ Non-Irrigated, Non-Delta





Crop Returns Comparison

Net Returns Comparison Tool available on agecon.msstate.edu

 Allows for comparison of returns between any corn, cotton, rice, or soybean budgets

Can edit costs to match farm's situation



Net Returns Comparison Calculator

Mississippi State University Extension Service Developed by Brian Mills and Will Maples, Department of Agricultural Economics



Crop	Budget																
	1. Corn, stal	e seedbed, l	BtRR, 1	l6-r	ow 30",	, 220) bu yie	eld go	oal -								
Corn	Furrow Irrigated, 13 ac-in., Delta Area																
					-	iffa	ranca i	n Da	turne P	latu.	een Ca	rn a	nd Sov	hea	ne \$/=		
bu/ac						/IIIE	i ence i	II NE					iiu 30	, DEa	ه رد دا ا		
220									COI	11 110	eius buj	uc					
					205		210		215		220		225		230		235
\$/bu			45	Ś		Ś		Ś		Ś		Ś		Ś		_	410
\$5.17		/ας						· ·									349
		pa		-				-				-		-			288
5		elds		-		•				-		•		•			227
		, <u>Y</u> ;				-		-				•		-			166
		sea.	70	\$		•			6			\$	56	\$	81	\$	105
Crop	Budget	Soyl	75	\$	(104)	Ś			(55)	Ś	(30)	Ś	(5)	\$	20	\$	44
	2. Soybeans,	full-season								23	(/		1				
Soybeans	Furrow irriga	ted, 9 ac-in	., Delta	a Are	ea								1				
											An	y val	lue in v	vhite	, Crop	1 ha	s
bu/ac																	ny
60																	
											100	ver re	etuiris	шап	Crop 2	<u></u>	
\$/bu																	
\$12.46																	
5																	
	Corn bu/ac 220 \$/bu \$5.17 Crop Soybeans bu/ac 60 \$/bu \$12.46	Lorn, stal Furrow Irrigation bu/ac 220 \$/bu \$5.17 Crop Budget 2. Soybeans, Furrow irrigation bu/ac 60 \$/bu \$12.46	1. Corn, stale seedbed, I Furrow Irrigated, 13 ac-i bu/ac 220 \$/bu \$5.17 5 Crop Budget 2. Soybeans, full-season Furrow irrigated, 9 ac-in. bu/ac 60 \$/bu \$12.46	1. Corn, stale seedbed, BtRR, 1 Furrow Irrigated, 13 ac-in., Del bu/ac 220 \$/bu \$5.17 5 60 65 70 Crop Budget 2. Soybeans, full-season, Enlist Soybeans bu/ac 60 \$/bu \$12.46	1. Corn, stale seedbed, BtRR, 16-rd Furrow Irrigated, 13 ac-in., Delta A bu/ac \$\frac{220}{\\$\frac{5}{3}\}\] \$\frac{5}{3}\] \$\frac{70}{3}\] \$\frac{5}{3}\] \$\frac{5}{3}\] \$\frac{5}{3}\] \$\frac{70}{3}\] \$\frac{5}{3}\] \$\frac{70}{3}\] \$\frac{5}{3}\] \$\frac{7}{3}\] \$\frac{5}{3}\] \$\frac{5}{3}	1. Corn, stale seedbed, BtRR, 16-row 30". Furrow Irrigated, 13 ac-in., Delta Area bu/ac 220 \$/bu \$5.17 \$205 45 \$ 262 50 \$ 201 55 \$ 140 5 \$ 60 \$ 79 65 \$ 18 70 \$ (43) Crop Budget 2. Soybeans, full-season, Enlist E3, stale so Furrow irrigated, 9 ac-in., Delta Area bu/ac \$/bu \$12.46	1. Corn, stale seedbed, BtRR, 16-row 30", 220 Diffe	1. Corn, stale seedbed, BtRR, 16-row 30", 220 bu yie Furrow Irrigated, 13 ac-in., Delta Area Difference is	1. Corn, stale seedbed, BtRR, 16-row 30", 220 bu yield go Furrow Irrigated, 13 ac-in., Delta Area Difference in Re	1. Corn, stale seedbed, BtRR, 16-row 30", 220 bu yield goal - Furrow Irrigated, 13 ac-in., Delta Area Difference in Returns E Cor	1. Corn, stale seedbed, BtRR, 16-row 30", 220 bu yield goal - Furrow Irrigated, 13 ac-in., Delta Area Difference in Returns Betw	1. Corn, stale seedbed, BtRR, 16-row 30", 220 bu yield goal - Furrow Irrigated, 13 ac-in., Delta Area Difference in Returns Between Co Corn Yields buy 205 210 215 220 \$ 50 \$ 201 \$ 215 220 \$ 50 \$ 201 \$ 226 \$ 287 \$ 311 \$ 336 \$ 50 \$ 201 \$ 226 \$ 250 \$ 275 \$ 55 \$ 140 \$ 165 \$ 189 \$ 214 \$ 5 \$ 65 \$ 18 \$ 43 \$ 67 \$ 92 \$ 65 \$ 18 \$ 43 \$ 67 \$ 92 \$ 70 \$ (43) \$ (18) \$ 6 \$ 31 Crop Budget \$ 75 \$ (104) \$ (79) \$ (55) \$ (30) 2. Soybeans, full-season, Enlist E3, stale seedbed, 16R 30", Soybeans Furrow irrigated, 9 ac-in., Delta Area An hig val low	1. Corn, stale seedbed, BtRR, 16-row 30", 220 bu yield goal - Furrow Irrigated, 13 ac-in., Delta Area Difference in Returns Between Corn at Corn Yields bu/ac	1. Corn, stale seedbed, BtRR, 16-row 30", 220 bu yield goal - Furrow Irrigated, 13 ac-in., Delta Area Difference in Returns Between Corn and Soy Corn Yields bu/ac 220 \$\frac{20}{205} \frac{210}{210} \frac{215}{210} \frac{220}{225} \frac{220}{225} \frac{25}{200} \frac{25}{250} \frac{25}{200} \frac{25}{250} \frac{25}{200} \frac{25}{250} \frac{25}{200} \frac{200}{200} \frac{25}{200} \frac{200} \frac{25}{200} \frac{25}{200}	1. Corn, stale seedbed, BtRR, 16-row 30", 220 bu yield goal - Furrow Irrigated, 13 ac-in., Delta Area Difference in Returns Between Corn and Soybea Corn Yields bu/ac 220 \$\frac{20}{205} \frac{210}{210} \frac{215}{215} \frac{220}{220} \frac{225}{225}\$ \$\frac{45}{5} \frac{5}{262} \frac{5}{287} \frac{5}{311} \frac{5}{336} \frac{5}{361} \frac{5}{5} \frac{5}{5} \frac{140}{5} \frac{5}{5} \frac{5}{5} \frac{140}{5} \frac{5}{5} \frac{5}{5} \frac{140}{5} \frac{5}{5} \frac{5}{5} \frac{5}{5} \frac{140}{5} \frac{5}{5} \frac{5}{5} \frac{5}{5} \frac{5}{5} \frac{5}{5} \frac{5}{5} \frac{140}{5} \frac{5}{5} \fra	1. Corn, stale seedbed, BtRR, 16-row 30", 220 bu yield goal- Furrow Irrigated, 13 ac-in., Delta Area Difference in Returns Between Corn and Soybeans \$/a Corn Yields bu/ac	1. Corn, stale seedbed, BtRR, 16-row 30", 220 bu yield goal - Furrow Irrigated, 13 ac-in., Delta Area Difference in Returns Between Corn and Soybeans \$/ac





Net Returns Comparison Calculator

Mississippi State University Extension Service

Developed by Brian Mills and Will Maples, Department of Agricultural Economics



															•			
Crop 1																		
	Crop	Budget																
		6. Conventiona	l hybrid	straight	lev	ee rice	, Flo	od irrig	ate	d, 27								
Choose crop and budget	Rice	ac-in., Delta Are	ea															
						ı	Diffe	erence i	n Re	eturns (Betv	veen Ri	ce a	ınd Soy	bea	ns \$/ac		
	bu/ac				Rice Yields bu/ac													
Expected Yield	180																	
						165		170		175		180		185		190		195
	\$/bu		U	45	\$	(24)	\$	2	\$	27	\$	52	\$	77	\$	103	\$	128
Expected Price	\$5.80		bu/ac	50	\$	(84)	\$	(59)	\$	(34)	\$	(9)	\$	17	\$	42	\$	67
			ls b	55	\$	(145)	\$	(120)	\$	(95)	\$	(70)	\$	(44)	\$	(19)	\$	6
Rice Yield Increment	5		Soybean Yields	60	\$	(206)	\$	(181)	\$	(156)	\$	(131)	\$	(105)	\$	(80)	\$	(55)
	3		- 2	65	\$	(267)	\$	(242)	\$	(217)	\$	(192)	\$	(166)	\$	(141)	\$	(116)
			ped	70	\$	(328)	\$	(303)	\$	(278)	\$	(253)	\$	(227)	\$	(202)	\$	(177)
Crop 2			_ So	75	\$	(389)	Ś	(364)	Ś	(339)	Ś	(313)	Ś	(288)	Ś	(263)	Ś	(238)
	Crop	Budget			Ť	(303)	· ·	(55.)	Ψ	(555)		(525)		(200)		(200)		(233)
		2. Soybeans, ful	I-season	, Enlist	E3,	stale se	eedl	oed, 16F	R 30	, ii				1				
Choose crop and budget	Soybeans	Furrow irrigated	l, 9 ac-in	., Delta	Are	ea										8 18	48	
												An	y val	lue in w	hite	e, Crop	1 ha	s
	bu/ac															n Crop 2		ıy
Expected Yield	60															Crop 1 ha Crop 2		
												low	erro	eturns t	Han	Clop 2		
	\$/bu																	
Expected Price	\$12.46																	
Soybean Yield Increment	5																	





Net Returns Comparison Calculator

Mississippi State University Extension Service
Developed by Brian Mills and Will Maples, Department of Agricultural Economics



Crop 1																		
	Crop	Budget																
		1. Corn, stale	. Corn, stale seedbed, BtRR, 16-row 30", 220 bu yield goal -															
Choose crop and budget	Corn	Furrow Irrigate	d, 13 ac	-in., Delt	a Aı	rea												
			ed)				Dif	ference	in F	Returns	Bet	ween (orn an	d C	ottor	1 \$/ac		
	bu/ac		nse							Cor	n Yi	elds bu/	/ac					
Expected Yield	220		Cottonseed)															
						190		200		210		220	2	230		240		250
	\$/bu		(Lint	3495	\$	(225)	\$	(176)	\$	(126)	\$	(77)	\$ (28)	\$	22	\$	71
Expected Price	\$5.17		s (L	3505	\$	(230)	\$	(181)	\$	(131)	\$	(82)	\$ (32)	\$	17	\$	66
			eld	3515	\$	(235)	\$	(185)	\$	(136)	\$	(87)	\$ (37)	\$	12	\$	62
Corn Yield Increment	10		- Z	3525	\$	(240)	\$	(190)	\$	(141)	\$	(91)	\$ (42)	\$	7	\$	57
			tto	3535	\$	(244)	\$	(195)	\$	(146)	\$	(96)	\$ (47)	\$	3	\$	52
Crop 2			edcotton Yields	3545	\$	(249)	\$	(200)	\$	(150)	\$	(101)	\$ (52)	\$	(2)	\$	47
Clop 2	Crop	Budget	See —	3555	\$	(254)	\$	(205)	\$	(155)	\$	(106)	\$ (56)	\$	(7)	\$	42
	Сгор	2. Cotton, 12R	-38" soli	d conse	rvat	ion tilla	age.	furrow						•				
Choose crop and budget	Cotton	irrigated, B3XF		•				rarrow						1				
choose crop and sauger	Cotton	irrigatea, boxi	variety,	10.5 40	,	Delta 71	ı cu					An	y value	in	white	Cron	1 bac	
	Lint lbs/ac	Cottonseed lbs	/ac										y varue her reti					
Expected Yield	1500		,							2025		val	ue that	is re	ed, C	rop 1 h	as	
												lov	ver retu	rns	than	Crop 2	2.	
	Lint \$/lb	Cottonseed \$/lb																
Expected Price	\$0.85									0.11								
-																		
Cotton Yield Increment	5																	





Summary

 Flooding had a large impact on Mississippi in 2021

 Input prices are up significantly from last year but higher prices could lead to higher returns

 Important to determine which crop is going to be the best for your situation



Questions?

Brian Mills

<u>b.mills@msstate.edu</u>

662-686-3238

