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Economic impact of higher fertilizer prices on AFPC's representative crop farms

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Agricultural and Food Policy Center
Texas A&M University

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Economic Impact of Higher Fertilizer Prices on AFPC's Representative Crop Farms



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Economic Impact of Higher Fertilizer Prices on AFPC's Representative Crop Farms

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Introduction

This report analyzes the economic impacts of higher fertilizer prices on the Agricultural and Food Policy Center's (AFPC's) 64 representative crop farms. The analysis was requested by U.S. Representative Julia Letlow from the 5th District of Louisiana. The results are presented relative to the August 2021 FAPRI Baseline analysis. Additional detail is presented for the Louisiana representative grain farm that is located in her Congressional district.

Background

According to USDA, fertilizer use by U.S. producers peaked in 1981 at 23.7 million tons.¹ Since that time, fertilizer use has experienced annual volatility with no persistent trend. Of the three primary types of commercial fertilizer – nitrogen, phosphorus, and potassium (NPK) – nitrogen accounts for more than 50 percent of total use by weight. Recent fertilizer price increases across all three primary nutrients have caused significant concern among producers. For the 2022 crop, producers are experiencing sticker shock as well as product shortages (Figure 1).

¹ <https://www.ers.usda.gov/data-products/fertilizer-use-and-price/summary-of-findings/>

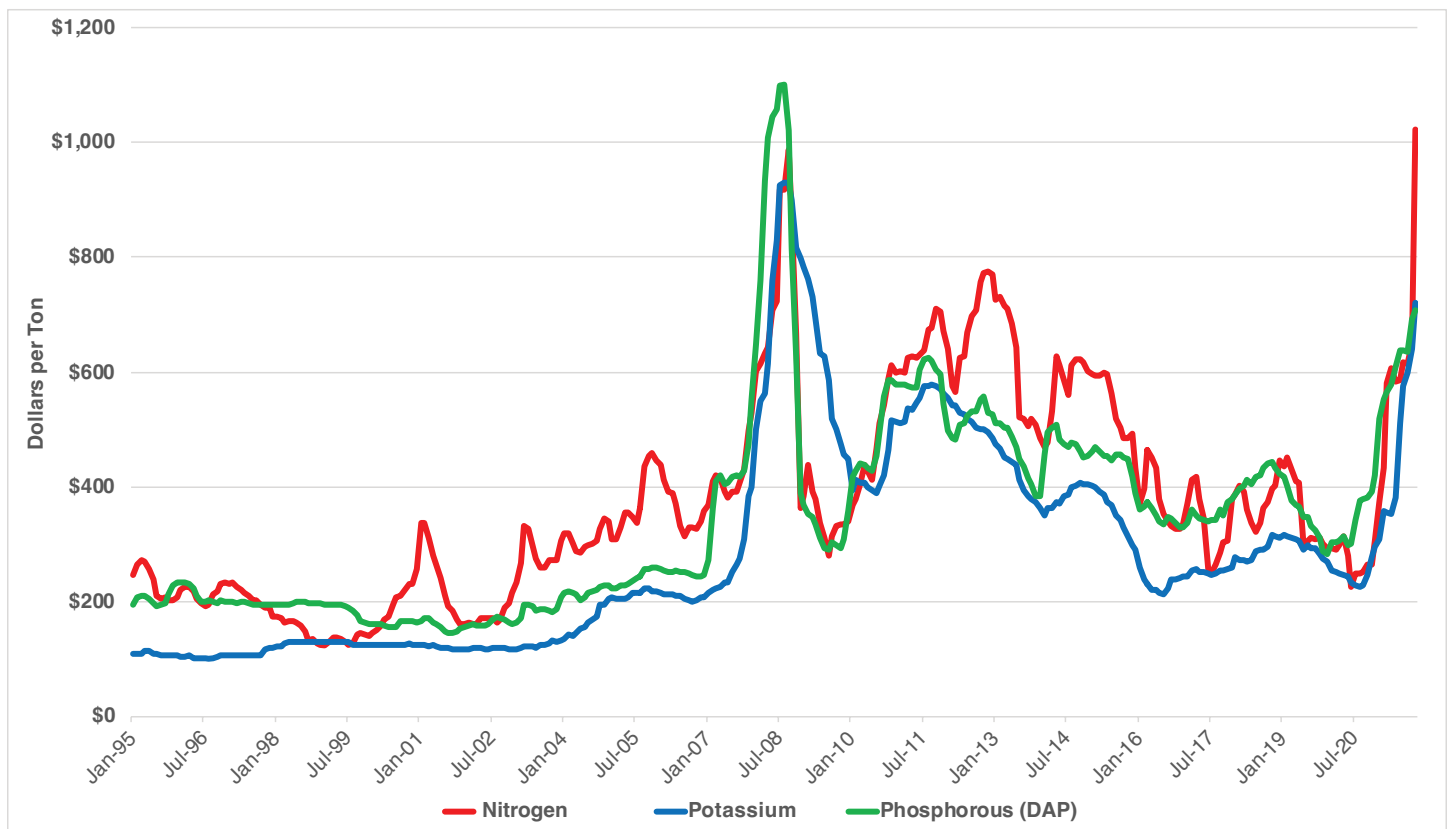


Figure 1: Monthly Average Fertilizer Nutrient Prices, January 1995 to October 2021.

Source: Compiled from DTN spot market price data for the last trading day of each month. The markets include New Orleans, Corn Belt, Southern Plains, South Central, Southeast and Florida. The phosphorous price is specifically for diammonium phosphate (DAP).

Table 1: FAPRI August 2021 Baseline Update Crop Prices, 2019-2026.

Crop Prices	2019	2020	2021	2022	2023	2024	2025	2026
Corn (\$/bu.)	3.56	4.40	5.34	4.55	4.45	4.37	4.26	4.18
Wheat (\$/bu.)	4.58	5.05	6.31	5.67	5.79	5.64	5.61	5.55
Upland Cotton Lint (\$/lb.)	0.5960	0.6650	0.7902	0.7133	0.7203	0.7273	0.7280	0.7287
Sorghum (\$/bu.)	3.34	5.00	5.88	5.01	4.93	4.85	4.73	4.66
Soybeans (\$/bu.)	8.57	10.90	13.18	12.01	11.75	11.42	11.22	11.09
Barley (\$/bu.)	4.69	4.75	5.66	5.29	5.06	4.89	4.82	4.76
Oats (\$/bu.)	2.82	2.77	3.52	3.39	3.30	3.22	3.19	3.17
All Rice (\$/cwt.)	13.60	13.90	14.26	14.43	14.46	14.46	14.47	14.68
Soybean Meal (\$/ton)	285.67	376.75	357.76	319.84	316.11	308.58	304.42	299.87
All Hay (\$/ton)	163.00	159.00	182.73	170.45	163.05	160.43	158.40	157.48
Peanuts (\$/ton)	410.00	420.00	413.64	417.00	412.06	406.57	403.37	402.44

Source: Food and Agricultural Policy Research Institute (FAPRI) at the University of Missouri-Columbia.

Table 2: FAPRI August 2021 Baseline Update Assumed Rates of Change in Input Prices and Annual Changes in Land Values, 2020-2026.

	2020	2021	2022	2023	2024	2025	2026
Annual Rate of Change for Input Prices Paid							
Seed Prices (%)	-2.24	-0.24	3.30	3.32	2.45	1.75	1.27
Nitrogen Fertilizer Prices (%)	-3.22	17.29	9.94	-1.21	-3.33	-1.63	-0.97
Potash and Phos. Fertilizer Prices (%)	-0.79	25.96	13.61	-1.48	-2.25	-1.99	-1.32
Herbicide Prices (%)	-2.55	-3.13	2.92	1.37	1.54	1.58	1.64
Insecticide Prices (%)	-6.05	-0.15	2.60	1.68	1.85	1.90	1.93
Fuel and Lube Prices (%)	-15.63	2.00	13.87	-0.18	0.64	1.06	1.20
Machinery Prices (%)	-0.81	4.72	6.00	-3.18	0.37	0.89	1.17
Wages (%)	2.63	4.88	3.90	3.64	3.26	3.08	2.99
Supplies (%)	1.65	7.50	0.54	1.73	1.89	2.09	2.10
Repairs (%)	1.57	5.62	1.12	2.10	2.31	2.52	2.55
Services (%)	-0.17	3.51	5.70	1.01	2.16	2.13	2.14
Taxes (%)	0.68	2.10	2.67	6.26	5.68	1.57	1.48
PPI Items (%)	-1.96	5.81	4.78	0.01	0.99	1.07	0.98
PPI Total (%)	-1.64	5.41	4.53	0.69	1.48	1.38	1.30
Annual Change in Consumer Price Index (%)	1.25	3.66	2.41	2.07	2.09	2.12	2.15
Annual Rate of Change for U.S. Land Prices (%)	0.00	6.96	5.60	-1.87	-2.06	-0.60	-0.27

Source: Food and Agricultural Policy Research Institute (FAPRI) at the University of Missouri-Columbia.

Projected commodity prices, policy variables, and input inflation rates are from the Food and Agricultural Policy Research Institute (FAPRI) August 2021 Baseline (Tables 1 and 2). Each representative farm is simulated using the FarmESP model assuming FAPRI's projected prices and annual inflation rates through 2022 for the Baseline Scenario. AFPC's representative farms are all assumed to be full-time, commercial-scale family operations. As indicated in Table 1, most commodities are expected to continue to see better than average prices over the next year.

Model Modifications

The inflation rates for fertilizer nutrient prices obtained from FAPRI in Table 2 were evaluated and determined to be quite low relative to current market conditions. Spot market data obtained from DTN was evalu-

Table 3: Fertilizer Nutrient Inflation from the FAPRI Baseline and High Fertilizer Scenario for 2022.

Nutrient	FAPRI August Baseline 2022	High Fertilizer Scenario 2022
Nitrogen (AA)	9.94%	55.43%
Potash and Phosphorous	13.61%	50.84%

ated and the cost indices for both fertilizer categories in Table 2 were adjusted for the higher prices experienced thus far in 2021 that are assumed for 2022. The FarmESP model assumes all fertilizer used for the 2022 crop is purchased in 2022 rather than some in the Fall of 2021 and the rest during 2022.

Scenarios Analyzed

The following 2 scenarios were analyzed for each of the 64 representative crop farms:

- **Baseline Scenario.** Each farm is analyzed assuming FAPRI November Baseline commodity prices and inflation rates (Tables 1 and 2).
- **High Fertilizer Scenario.** Same as the Baseline Scenario with fertilizer nutrient inflation for 2022 from Table 3.

Results

In the results tables that follow, the first two letters of a farm name reflect the state abbreviation followed by letters (in many cases) describing geographic location and type of farm (e.g., G for feedgrain, W for wheat, etc.). Some locations have both a moderate and large-sized farm, while others have only one farm size of that type in the region. The number in a farm's name indicates the total acres on the farm. Appendix A provides an overview of the characteristics of AFPC's representative farms. Appendix B provides the names of producers, land grant faculty, and industry leaders who cooperated in the panel interview process to develop the representative farms. Additional information about the representative farms can be found in AFPC Working Paper 21-1 by Outlaw et al., March 2021. The breakdown of the 64 crop farms by type is as follows:

- Feedgrain: 25
- Wheat: 11
- Cotton: 13
- Rice: 15

Tables 4-7 contain the simulation results for each of the representative crop farms. The primary economic variable being evaluated is ending cash at the end of 2022 under the Baseline Scenario and the High Fertilizer Scenario labeled Alternative. As would be expected with only fertilizer costs increasing, the difference in ending cash is negative for all farms. That difference averages \$94,000 for the feedgrain farms, \$68,000 for the

Table 4: Representative Feedgrain Farm Results.

Farm	Planted Area	Ending Cash	Ending Cash	Ending Cash	NPK Costs	NPK Costs	NPK Costs	NPK Costs
	--Acres--	Base	Alternative	Difference	Base	Alternative	Difference	Difference
		--1,000--	--1,000--	--1,000--	--1,000--	--1,000--	--1,000--	--\$/Acre--
IAG1350	1,350	-266.6	-313.6	-47	169	231	62	45.73
IAG3400	3,400	513.4	416.9	-97	367	500	133	39.11
NEG2400	2,400	1401.4	1309.9	-92	341	469	128	53.22
NEG4500	4,300	690.5	533.4	-157	547	748	201	46.83
NDG3000	3,000	687.7	630.1	-58	227	310	82	27.49
NDG9000	9,000	4112.1	3938.8	-173	674	913	240	26.62
ING1000	1,050	249.9	226.1	-24	106	143	38	35.98
ING3500	3,500	1148.2	1049.3	-99	412	560	148	42.23
OHG700	700	194.7	182.9	-12	46	63	17	24.27
OHG1500	1,500	942.8	902.1	-41	170	231	61	40.73
MOCG2300	2,300	983.6	946.7	-37	160	219	59	25.63
MOCG4200	4,200	2548.9	2479.7	-69	296	408	111	26.49
MONG2300	2,300	521.8	481.8	-40	180	244	65	28.20
LANG2500	2,500	485.6	402.1	-84	278	383	105	42.13
TNG2500	2,875	568.9	462.5	-106	387	524	138	47.85
TNG5000	5,500	2207.5	1981.4	-226	880	1,196	316	57.47
NCSP2000	2,000	-252.5	-344.5	-92	309	422	113	56.51
NCC2030	1,600	787.4	763	-24	107	146	39	24.58
SCC2000	2,000	264.9	168.2	-97	336	461	124	62.15
SCG3500	3,500	1198.9	1036.8	-162	615	841	225	64.37
TXNP3450	3,192	1669.5	1575.9	-94	342	475	134	41.84
TXNP10880	10,180	6942.9	6592.9	-350	1,270	1,740	471	46.23
TXPG2500	2,500	818.4	743.3	-75	222	308	85	34.13
TXHG3000	3,000	377	303.2	-74	216	298	82	27.27
TXWGI600	1,600	2.4	-29.3	-32	91	125	35	21.73
Average	3,178	1,152	1,058	-94	350	478	128	39.55

Table 5: Representative Wheat Farm Results.

Farm	Planted Area	Ending Cash	Ending Cash	Ending Cash	NPK Costs	NPK Costs	NPK Costs	NPK Costs
	--Acres--	Base	Alternative	Difference	Base	Alternative	Difference	Difference
		--1,000--	--1,000--	--1,000--	--1,000--	--1,000--	--1,000--	--\$/Acre--
WAW2800	2,640	591.1	530.3	-61	216	299	83	31.62
WAW10000	8,500	1836	1642.7	-193	652	898	246	29.00
WAAW5500	2,600	-312.7	-348.7	-36	101	141	40	15.33
ORW4500	2,250	-63.9	-79.9	-16	50	70	20	8.68
MTW9500	5,301	1025.7	949.6	-76	320	438	119	22.41
KSCW2000	2,600	760.8	737.3	-24	104	143	40	15.23
KSCW5300	7,327	2213.6	2137.8	-76	311	427	117	15.92
KSNW4000	3,000	87.7	36.8	-51	177	243	66	21.94
KSNW8000	7,600	2613.5	2471.5	-142	595	818	223	29.37
COW3000	1,688	63.5	51.3	-12	46	65	18	10.69
COW6000	4,000	-767.9	-827.8	-60	165	229	63	15.87
Average	4,319	732	664	-68	249	343	94	19.64

Table 6: Representative Cotton Farm Results.

Farm	Planted Area	Ending Cash	Ending Cash	Ending Cash	NPK Costs	NPK Costs	NPK Costs	NPK Costs
	--Acres--	Base	Alternative	Difference	Base	Alternative	Difference	Difference
		--1,000--	--1,000--	--1,000--	--1,000--	--1,000--	--1,000--	--\$/Acre--
TXSP4500	4,500	643.4	574.9	-69	208	287	79	17.62
TXEC5000	5,000	1325.1	1287.5	-38	124	171	47	9.41
TXRP3000	3,000	-272	-292.3	-20	62	85	23	7.74
TXMC2500	2,410	497	426.4	-71	212	292	81	33.42
TXCB4000	4,000	759.9	677.1	-83	245	339	94	23.48
TXCB10000	10,000	3430.2	3256	-174	551	764	214	21.37
TXVC5500	5,100	2387.4	2285.7	-102	337	471	134	26.27
ARNC5000	5,000	3229.1	3120.5	-109	441	607	166	33.23
TNC3000	3,000	1958.4	1873	-85	336	460	124	41.20
TNC4000	4,100	1405.3	1274.8	-131	452	617	165	40.12
ALC3500	4,375	2773.2	2691.1	-82	358	490	131	30.04
GAC2500	2,500	1388.2	1275.7	-113	440	600	160	63.83
NCNP1600	1,600	-206.3	-260.6	-54	174	236	62	38.63
Average	4,199	1,486	1,399	-87	303	417	114	29.72

Table 7: Representative Rice Farm Results.

Farm	Planted Area	Ending Cash	Ending Cash	Ending Cash	NPK Costs	NPK Costs	NPK Costs	NPK Costs
	--Acres--	Base	Alternative	Difference	Base	Alternative	Difference	Difference
		--1,000--	--1,000--	--1,000--	--1,000--	--1,000--	--1,000--	--\$/Acre--
CARI200	1,200	782.7	737.8	-45	194	267	73	60.70
CAR3000	3,000	24.4	-224.5	-249	723	999	276	91.96
CABR800	800	252.1	196.4	-56	165	229	64	79.94
CACR800	800	-456.2	-525.7	-70	197	272	75	93.84
TXRI500	600	-241.7	-282.7	-41	118	164	45	75.73
TXR3000	1,500	375.1	288.1	-87	272	376	105	69.74
TXBR1800	600	218.3	172	-46	142	199	57	94.31
TXER2500	2,500	728.8	609.3	-120	422	583	161	64.28
LASR2000	1,200	89.6	16.3	-73	246	337	91	76.10
ARMR6500	6,500	2836	2628.4	-208	819	1,113	295	45.34
ARSR3240	3,240	1136.8	1030.3	-107	411	560	149	45.88
ARWR2500	2,500	-63	-128.1	-65	253	345	92	36.90
ARHR4000	4,240	136.7	6.6	-130	456	626	170	40.13
MSDR5000	5,000	2156.9	2108.3	-49	193	267	74	14.86
MOBR4000	4,000	673.9	540.7	-133	449	613	163	40.84
Average	2,512	577	478	-98	337	463	126	62.04

wheat farms, \$87,000 for the cotton farms and \$98,000 for the rice farms. These numbers differ by farm for a number of reasons, including the amount and type of products used and number of acres planted.

Nutrient (NPK) Costs for the farm are also evaluated for the Baseline Scenario and High Fertilizer Scenario (Alternative). Across all farm types, the increase under the Alternative varies from a low of \$94,000 for the wheat farms to \$128,000 for the feedgrain farms. This result provides an indication of the increased amount of

Table 8: LANG2500 Feedgrain Farm Results.

Crop	Planted Area	Base N	Base PK	Alternative N	Alternative PK	Expected Yield	Base Fertilizer Expenses	Alternative Fertilizer Expenses	Fertilizer Expense Change
	--Acres--	--\$--	--\$--	--\$--	--\$--	--Units/Acre--	--\$/Yield Unit--	--\$/Yield Unit--	--\$/Yield Unit--
Irrigated Corn (bu)	750	77,987	47,577	110,253	63,165	175	0.9567	1.3213	0.36
Irrigated Soybeans (bu)	656.2	0	25,808	0	34,264	55	0.7151	0.9494	0.23
Non-irrigated Soybeans (bu)	218.8	0	4,858	0	6,450	30	0.7401	0.9826	0.24
Long Grain Rice (lbs)	500	59,990	18,178	84,810	24,134	7,000	0.0223	0.0311	0.0088
Irrigated Cotton (lbs)	281.2	20,997	11,595	29,684	15,394	1,100	0.1054	0.1457	0.0404
Non-irrigated Cotton (lbs)	93.8	7,004	3,868	9,902	5,135	900	0.1288	0.1781	0.0493

financing that is currently needed to plant the 2022 crops. The last column of each table contains the increase in cost per acre due to the higher fertilizer costs. As expected, the wheat farms have the lowest increase at \$19.64 per acre due to lower application rates. Wheat is followed by the cotton farms at \$29.72 per acre, the feedgrain farms at \$39.55 per acre and finally the rice farms at \$62.04 per acre.

Results for the North Louisiana Feedgrain Farm (LANG2500)

This diversified farm is categorized as a feedgrain farm in our database because the majority of income tends to come from corn and soybeans (1,625 acres); however, the farm also has significant rice (500) and cotton (375) acreage. Looking at the farm as a whole in Table 4, the farm has an \$84,000 lower ending cash balance in 2022 due to the higher fertilizer costs. Across all acres, fertilizer costs are \$42.13 per acre higher for the High Fertilizer Scenario relative to the Baseline Scenario.

Table 8 highlights the differences in individual nutrient costs for the Baseline Scenario and Higher Fertilizer Scenario (Alternative) for each of the crops planted. The change in fertilizer expense between the two scenarios is summarized by dollars per yield unit to provide some context regarding the impact relative to commodity prices. For example, irrigated corn would need an additional \$0.36 per bushel to be as well off as under the baseline scenario. The other crops range from \$0.23 and \$0.24 per bushel for irrigated and non-irrigated soybeans, respectively, to \$0.0088 per pound (or \$0.88 per hundredweight) for long-grain rice, to \$0.0404 and \$0.0493 per pound for irrigated and non-irrigated cotton, respectively.

Discussion

AFPC was asked about actions Congress or the Administration could take to help alleviate some of the concerns raised in this report. In response, we offer two key observations.

First, the farm safety net is designed primarily to address price and yield risk or a combination of the two (i.e. revenue volatility). It is not designed to account for reductions in net farm income due to increased costs of production. In other words, the farm safety net does little to provide assistance to producers in the circumstances they are currently facing. While there may be other factors at play in the case of rising fertilizer costs, COVID-induced supply chain disruptions are certainly partly to blame. Regardless of the factors driving the increase in costs, the reality on the ground – as highlighted clearly in this report – is that producers are facing the prospect of a huge increase in costs going into the 2022 Spring planting season.

Second, whether through the Coronavirus Food Assistance Program (CFAP) or the Pandemic Assistance for Producers initiative, Congress and the Administration have a solid roadmap for addressing COVID-related strains in the farm economy. The situation currently facing producers would certainly seem to fit that mold.

Summary and Conclusions

As the nation struggles to recover from the COVID-19 pandemic, a number of supply chain disruptions continue to wreak havoc on agricultural input markets, both in terms of availability and cost of inputs. In the case of fertilizer, prices have exploded over the past year. Under FAPRI's August 2021 baseline outlook, nitrogen prices were expected to increase about 10% in 2022. Based on current spot market prices, it appears as though fertilizer prices will increase in excess of 80% for the 2022 planting season (relative to 2021).

The purpose of this report was to analyze the impact that increased fertilizer prices would have on AFPC's 64 representative farms. The report found that the largest whole-farm impact would fall on AFPC's feedgrain farms at an average of \$128,000 per farm and the largest per-acre impact would fall on AFPC's rice farms at \$62.04 per acre. Given the farm safety net is not designed to address rapidly rising costs of production, there are growing concerns in the countryside about the need for additional assistance.

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Appendix A

Representative Farm Characteristics

2020 CHARACTERISTICS OF PANEL FARMS PRODUCING FEED GRAINS AND OILSEEDS

- IAG1350** IAG1350 is a 1,350-acre northwestern Iowa (Webster County) grain farm. The farm is moderate sized for the region and plants 810 acres of corn and 540 acres of soybeans annually. Sixty-one percent of this farm's 2020 receipts come from corn production.
- IAG3400** This 3,400-acre large-sized grain farm is located in northwestern Iowa (Webster County). It plants 2,040 acres of corn and 1,360 acres of soybeans each year, realizing 61 percent of receipts from corn production.
- NEG2400** South-central Nebraska (Dawson County) is home to this 2,400-acre grain farm. This farm plants 1,600 acres to corn and 800 acres to soybeans. The farm splits its corn acres evenly between yellow and white food-grade corn. Sixty-six percent of gross receipts are derived from corn sales.
- NEG4500** This is a 4,500-acre grain farm located in south-central Nebraska (Dawson County). This operation plants 3,000 acres of corn and 1,000 acres of soybeans each year. Remaining acres are planted to alfalfa. A portion (25 percent) of the corn acreage is food-grade corn. In 2020, 69 percent of total receipts were generated from corn production.
- NDG3000** NDG3000 is a 3,000-acre, moderate-sized, south central North Dakota (Barnes County) grain farm that plants 500 acres of wheat, 1,000 acres of corn, and 1,500 acres of soybeans. One hundred acres are enrolled in the Conservation Reserve Program. The farm generated 36 percent of 2020 receipts from soybean sales and 42 percent from corn sales.
- NDG9000** This is an 9,000-acre, large-sized grain farm in south central North Dakota (Barnes County) that grows 4,500 acres of soybeans, 2,500 acres of corn, 1,250 acres of wheat, and 500 acres of barley annually. The remaining acreage is enrolled in the Conservation Reserve Program. Soybean and corn sales accounted for 75 percent of 2020 receipts.
- ING1000** Shelby County, Indiana, is home to this 1,000-acre moderate-sized feedgrain farm. This farm annually plants 475 acres of corn, 525 acres of soybeans, and 50 acres of wheat that is double cropped with soybeans. Due to this farm's proximity to Indianapolis, land development pressures will likely constrain further expansion of this operation. Forty-seven percent of 2020 receipts came from corn sales.
- ING3500** ING3500 is a large-sized grain farm located in east central Indiana (Shelby County). This farm plants 1,750 acres to corn and 1,750 acres to soybeans each year. In 2020, 53 percent of gross receipts were generated by corn sales.
- OHG700** This is a 700 acre, moderate sized grain farm in north western Ohio (Henry County). This farm planted 105 acres of corn and 280 acres of soybeans in 2020. Because of the wet spring there were 315 acres that were not planted and was taken as preventive planting insurance. Normally would be 350 acres each of corn and soybeans. Twenty-nine percent of 2020 receipts were generated by corn sales.
- OHG1500** This is a 1,500 acre, large-sized grain farm in north western Ohio (Henry County). This farm planted 202 acres of corn, 304 acres of soybeans, and 150 acres of wheat in 2020. Because of the wet spring there were 844 acres that were not planted and was taken as preventive planting insurance. Normally would be 675 acres each of corn and soybeans plus the 150 acres of wheat. Thirty-six percent of 2020 receipts were generated by corn sales.

Appendix Table A1. Characteristics of Panel Farms Producing Feed Grains.

	IAG1350	IAG3400	NEG2400	NEG4500	NDG3000	NDG9000	ING1000	ING3500	OHG700	OHG1500
County	Webster	Webster	Dawson	Dawson	Barnes	Barnes	Shelby	Shelby	Henry	Henry
Total Cropland	1,350.00	3,400.00	2,400.00	4,500.00	3,000.00	9,000.00	1,000.00	3,500.00	700.00	1,500.00
Acres Owned	250.00	850.00	600.00	2,150.00	720.00	4,000.00	350.00	1,225.00	350.00	375.00
Acres Leased	1,100.00	2,550.00	1,800.00	2,350.00	2,280.00	5,000.00	650.00	2,275.00	350.00	1,125.00
Assets (\$1000)										
Total	3,333.00	10,626.00	6,433.00	19,239.00	4,274.00	21,435.00	3,803.00	12,035.00	3,337.00	4,273.00
Real Estate	2,650.00	8,500.00	4,231.00	15,273.00	3,011.00	15,114.00	3,195.00	10,276.00	2,927.00	2,927.00
Machinery	683.00	2,126.00	1,615.00	3,881.00	942.00	4,362.00	554.00	1,379.00	345.00	940.00
Other & Livestock	0.00	0.00	587.00	86.00	321.00	1,960.00	54.00	380.00	64.00	405.00
Debt/Asset Ratios										
Total	0.27	0.19	0.17	0.18	0.14	0.17	0.18	0.18	0.18	0.17
Intermediate	0.11	0.20	0.24	0.19	0.07	0.26	0.24	0.24	0.11	0.16
Long Run	0.17	0.17	0.17	0.17	0.17	0.17	0.18	0.18	0.19	0.19
2020 Gross Receipts (\$1,000)*										
Total	1,006.90	2,212.80	2,750.10	4,705.50	1,578.90	4,917.30	776.10	2,907.80	295.50	514.00
Corn	616.10	1,340.90	1,808.20	3,233.30	663.60	1,716.00	365.90	1,534.60	84.70	187.00
	0.61	0.61	0.66	0.69	0.42	0.35	0.47	0.53	0.29	0.36
Wheat	0.00	0.00	0.00	0.00	172.20	524.60	18.10	0.00	2.40	89.10
	0.00	0.00	0.00	0.00	0.11	0.11	0.02	0.00	0.01	0.17
Soybeans	269.40	597.00	672.10	754.70	575.30	1,949.30	309.10	1,089.80	173.00	181.50
	0.27	0.27	0.24	0.16	0.36	0.40	0.40	0.38	0.59	0.35
Barley	0.00	0.00	0.00	0.00	0.00	212.10	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00
Hay	0.00	0.00	0.00	274.70	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00
Other	121.40	274.90	269.80	442.80	167.80	515.20	82.90	283.50	35.40	56.40
	0.12	0.12	0.10	0.09	0.11	0.11	0.11	0.10	0.12	0.11
2020 Planted Acres**										
Total	1,350.00	3,400.00	2,400.00	4,300.00	3,100.00	9,000.00	1,050.00	3,500.00	385.00	656.20
Corn	810.00	2,040.00	1,600.00	3,000.00	1,000.00	2,500.00	475.00	1,750.00	105.00	202.50
	0.60	0.60	0.67	0.70	0.32	0.28	0.45	0.50	0.27	0.31
Wheat	0.00	0.00	0.00	0.00	500.00	1,250.00	50.00	0.00	0.00	150.00
	0.00	0.00	0.00	0.00	0.16	0.14	0.05	0.00	0.00	0.23
Soybeans	540.00	1,360.00	800.00	1,000.00	1,500.00	4,500.00	525.00	1,750.00	280.00	303.80
	0.40	0.40	0.33	0.23	0.48	0.50	0.50	0.50	0.73	0.46
Barley	0.00	0.00	0.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00
Hay	0.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00
CRP	0.00	0.00	0.00	0.00	100.00	250.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.00

*Receipts for 2020 are included to indicate the relative importance of each enterprise to the farm. Percents indicate the percentage of the total receipts accounted for by the livestock categories and the crops.

**Acres for 2020 are included to indicate the relative importance of each enterprise to the farm. Total planted acreage may exceed total cropland available due to double cropping. Percents indicate the percentage of total planted acreage accounted for by the crop.

2020 PANEL FARMS PRODUCING FEED GRAINS AND OILSEEDS

- MOCG2300** MOCG2300 is a 2,300-acre grain farm located in central Missouri (Carroll County) and plants 1,150 acres of corn and 1,150 acres of soybeans annually. This farm is located in the Missouri River bottom, an area with a large concentration of livestock production. This farm generated 54 percent of its total revenue from corn and 36 percent from soybeans during 2020.
- MOCG4200** This is a 4,200-acre central Missouri (Carroll County) grain farm with 2,310 acres of corn and 1,890 acres of soybeans. This farm is located in the Missouri River bottom, an area with a large concentration of livestock production. Corn sales accounted for 61 percent of farm receipts and soybeans accounted for 30 percent in 2020.
- MONG2300** MONG2300 is a 2,300-acre diversified northwest Missouri grain farm centered in Nodaway County. MONG2300 plants 1,125 acres of corn, 1,125 acres of soybeans, and 50 acres of hay annually. The farm also has a 300-head cow-calf herd. Proximity to the Missouri River increases marketing options for area grain farmers due to easily accessible river grain terminals. In 2020, 48 percent of the farm's total receipts were from corn, 40 percent from soybeans, and 10 percent from cattle sales.
- LANG2500** This is a 2,500-acre northeast Louisiana (Madison Parish) diversified grain farm. This farm harvests 500 acres of rice, 875 acres of soybeans, 375 acres of cotton, and 750 acres of corn. For 2020, 49 percent of farm receipts came from corn and soybean sales.
- TNG2500** This is a 2,500-acre, moderate-sized grain farm in West Tennessee (Gibson County). Annually, this farm plants 1,025 acres of corn, 1,475 acres of soybeans, and 375 acres of wheat (planted before soybeans) in a region of Tennessee recognized for the high level of implementation of conservation practices by farmers. For 2020, 41 percent of farm receipts were from sales of corn and 41 percent from soybeans.
- TNG5000** West Tennessee (Gibson County) is home to this 5,000-acre, large-sized grain farm. Farmers in this part of Tennessee are known for their early and continued adoption of conservation practices, including no-till farming. TNG5000 plants 2,500 acres of corn, 500 acres of wheat, 2,500 acres of soybeans (500 of which are double-cropped after wheat). The farm generated 52 percent of its 2020 gross receipts from sales of corn and 33 percent from soybeans.
- NCSP2000** A 2,000-acre diversified farm located in southern North Carolina (Bladen County). NCSP2000 plants 400 acres of peanuts, 1,100 acres of corn, and 500 acres of soybeans. Sixty-three percent of receipts for this farm came from corn and soybean sales in 2020; thirty percent of receipts came from peanut sales.
- NCC2030** This is a 2,000-acre grain farm located on the upper coastal plain of North Carolina (Wayne County). NCC2030 plants 400 acres of corn, 200 acres of wheat, and 1,000 acres of soybeans annually. Corn accounted for 25 percent of this farm's 2020 receipts, while soybeans accounted for 34 percent.
- SCC2000** SCC2000 is a moderate-sized, 2,000-acre grain farm in South Carolina (Orangeburg County) consisting of 800 acres of corn, 550 acres of cotton, 250 acres of peanuts, and 400 acres of soybeans. Forty-one percent of the farm's receipts were from corn sales during 2020.
- SCG3500** A 3,500-acre, large-sized South Carolina (Clarendon County) grain farm with 1,800 acres of corn, 750 acres of cotton, 600 acres of peanuts, and 350 acres of soybeans. The farm generated 47 percent of 2020 receipts from corn sales and 4 percent from soybean sales.

Appendix Table A2. Characteristics of Panel Farms Producing Feed Grains.

	MOCG2300	MOCG4200	MONG2300	LANG2500	TNG2500	TNG5000	NCSP2000	NCC2030	SCC2000	SCG3500
County	Carroll	Carroll	Nodaway	Madison	Gibson	Gibson	Bladen	Wayne	Clarendon	Clarendon
Total Cropland	2,300.00	4,200.00	2,300.00	2,500.00	2,500.00	5,000.00	2,000.00	2,000.00	2,000.00	3,500.00
Acres Owned	1,380.00	1,800.00	1,610.00	500.00	625.00	1,375.00	700.00	225.00	550.00	1,400.00
Acres Leased	920.00	2,400.00	690.00	2,000.00	1,875.00	3,625.00	1,300.00	1,775.00	1,450.00	2,100.00
Assets (\$1000)										
Total	12,432.00	18,091.00	12,950.00	3,929.00	5,395.00	12,016.00	5,074.00	2,560.00	3,487.00	7,700.00
Real Estate	10,755.00	14,943.00	11,792.00	2,158.00	3,803.00	8,539.00	3,474.00	1,445.00	2,274.00	5,099.00
Machinery	1,246.00	1,920.00	978.00	1,595.00	1,429.00	2,442.00	1,599.00	863.00	1,122.00	2,061.00
Other & Livestock	432.00	1,227.00	180.00	176.00	163.00	1,035.00	2.00	253.00	90.00	540.00
Debt/Asset Ratios										
Total	0.17	0.16	0.16	0.18	0.19	0.15	0.25	0.15	0.16	0.16
Intermediate	0.21	0.11	0.23	0.21	0.28	0.21	0.20	0.33	0.11	0.14
Long Run	0.18	0.18	0.16	0.17	0.16	0.16	0.18	0.07	0.18	0.18
2020 Gross Receipts (\$1,000)*										
Total	1,681.80	3,039.10	1,855.80	2,191.90	1,781.50	3,877.80	1,764.20	1,357.00	1,690.70	3,574.40
Corn	914.40	1,841.60	892.40	638.20	735.70	2,003.00	876.90	333.60	694.20	1,676.30
	0.54	0.61	0.48	0.29	0.41	0.52	0.50	0.25	0.41	0.47
Wheat	0.00	0.00	0.00	0.00	136.70	214.40	0.00	81.40	5.50	15.50
	0.00	0.00	0.00	0.00	0.08	0.06	0.00	0.06	0.00	0.00
Soybeans	603.30	900.70	743.10	443.40	728.50	1,262.30	228.20	457.60	148.00	157.20
	0.36	0.30	0.40	0.20	0.41	0.33	0.13	0.34	0.09	0.04
Cotton	0.00	0.00	0.00	316.60	0.00	0.00	0.00	0.00	401.70	634.50
	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.24	0.18
Peanuts	0.00	0.00	0.00	0.00	0.00	0.00	535.10	0.00	232.90	685.70
	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.14	0.19
Rice	0.00	0.00	0.00	469.50	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Hay	0.00	0.00	31.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other	164.10	296.80	189.30	324.20	180.60	398.10	124.00	484.40	208.40	405.30
	0.10	0.10	0.10	0.15	0.10	0.10	0.07	0.36	0.12	0.11
2020 Planted Acres**										
Total	2,300.00	4,200.00	2,750.00	2,500.00	2,875.00	5,500.00	2,000.00	1,600.00	2,000.00	3,500.00
Corn	1,150.00	2,310.00	1,125.00	750.00	1,025.00	2,500.00	1,100.00	400.00	800.00	1,800.00
	0.50	0.55	0.41	0.30	0.36	0.46	0.55	0.25	0.40	0.51
Wheat	0.00	0.00	0.00	0.00	375.00	500.00	0.00	200.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.13	0.09	0.00	0.13	0.00	0.00
Soybeans	1,150.00	1,890.00	1,125.00	875.00	1,475.00	2,500.00	500.00	1,000.00	400.00	350.00
	0.50	0.45	0.41	0.35	0.51	0.46	0.25	0.63	0.20	0.10
Cotton	0.00	0.00	0.00	375.00	0.00	0.00	0.00	0.00	550.00	750.00
	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.28	0.21
Peanuts	0.00	0.00	0.00	0.00	0.00	0.00	400.00	0.00	250.00	600.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.13	0.17
Rice	0.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00
Hay	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CRP	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pasture	0.00	0.00	430.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00

*Receipts for 2020 are included to indicate the relative importance of each enterprise to the farm. Percents indicate the percentage of the total receipts accounted for by the livestock categories and the crops.

**Acreages for 2020 are included to indicate the relative importance of each enterprise to the farm. Total planted acreage may exceed total cropland available due to double cropping. Percents indicate the percentage of total planted acreage accounted for by the crop.

2020 PANEL FARMS PRODUCING FEED GRAINS AND OILSEEDS

- TXNP3450** This is a 3,450-acre diversified grain farm located on the northern High Plains of Texas (Moore County). This farm plants 1206 acres of cotton, 1,294 acres of irrigated corn, 260 acres of irrigated sorghum for seed production, and 432 acres of irrigated wheat annually. Forty-seven percent of total receipts are generated from corn sales.
- TXNP10880** TXNP10880 is a large-sized diversified grain farm located in the Texas Panhandle (Moore County). This farm annually plants 4,454 acres of cotton (3,962 irrigated/492 dryland); 3,962 acres of irrigated corn; 1,272 acres of grain sorghum (530 irrigated for seed production/492 dryland/250 irrigated for commercial use); and 492 acres of dryland winter wheat. Forty percent of 2020 cash receipts were derived from corn sales.
- TXPG2500** The Texas Panhandle is home to this 2,500-acre farm (Deaf Smith County). Annually, wheat is planted on 534 acres (350 irrigated and 184 dryland), 1,000 acres planted to irrigated corn, 783 acres are planted to cotton (600 irrigated and 183 dryland), and grain sorghum is planted on 183 dryland acres. Fifty-four percent of 2020 cash receipts were generated by corn sales.
- TXHG3000** This 3,000-acre grain farm is located on the Blackland Prairie of Texas (Hill County). On this farm, 2,000 acres of corn, 500 acres of cotton, and 500 acres of wheat are planted annually. Grain sales accounted for 67 percent of 2020 receipts with cotton accounting for nineteen percent of sales. Forty beef cows live on 300 acres of improved pasture and contribute approximately two percent of total receipts.
- TXWG1600** This 1,600-acre farm is located on the Blackland Prairie of Texas (Williamson County). TXWG1600 plants 800 acres of corn, 300 acres of sorghum, 400 acres of cotton, and 100 acres of winter wheat annually. Additionally, this farm has a 40-head beef cow herd that is pastured on rented ground that cannot be farmed. Grain sales accounted for 55 percent of 2020 receipts with cotton accounting for 28 percent of sales.

Appendix Table A3. Characteristics of Panel Farms Producing Feed Grains.

	TXNP3450	TXNP10880	TXPG2500	TXHG3000	TXWG1600
County	Moore	Moore	Deaf Smith	Hill	Williamson
Total Cropland	3,450.00	10,880.00	2,500.00	3,000.00	1,600.00
Acres Owned	2,588.00	4,160.00	1,875.00	450.00	150.00
Acres Leased	862.00	6,720.00	625.00	2,550.00	1,450.00
Assets (\$1000)					
Total	8,573.00	21,181.00	6,122.00	2,571.00	1,886.00
Real Estate	6,452.00	12,091.00	3,735.00	1,208.00	1,299.00
Machinery	1,315.00	5,207.00	1,939.00	1,144.00	498.00
Other & Livestock	806.00	3,883.00	448.00	220.00	89.00
Debt/Asset Ratios					
Total	0.14	0.14	0.18	0.19	0.18
Intermediate	0.18	0.20	0.24	0.25	0.18
Long Run	0.15	0.15	0.17	0.18	0.17
2020 Gross Receipts (\$1,000)*					
Total	3,223.80	10,273.00	2,309.00	1,376.80	737.90
Corn	1,509.50	4,091.00	1,250.10	750.40	276.30
	0.47	0.40	0.54	0.55	0.37
Wheat	140.60	113.50	147.10	114.60	27.80
	0.04	0.01	0.06	0.08	0.04
Cotton	1,026.50	3,835.90	546.70	254.60	206.10
	0.32	0.37	0.24	0.19	0.28
Grain Sorghum	186.10	1,084.00	28.50	51.80	103.90
	0.06	0.11	0.01	0.04	0.14
Cattle	0.00	0.00	0.00	25.50	0.00
	0.00	0.00	0.00	0.02	0.00
Other	361.20	1,148.70	336.50	179.90	123.80
	0.11	0.11	0.15	0.13	0.17
2020 Planted Acres**					
Total	3,192.00	10,180.00	2,500.00	3,300.00	1,600.00
Corn	1,294.00	3,962.00	1,000.00	2,000.00	800.00
	0.41	0.39	0.40	0.61	0.50
Wheat	432.00	492.00	534.00	500.00	100.00
	0.14	0.05	0.21	0.15	0.06
Cotton	1,206.00	4,454.00	783.00	500.00	400.00
	0.38	0.44	0.31	0.15	0.25
Grain Sorghum	260.00	1,272.00	183.00	0.00	300.00
	0.08	0.13	0.07	0.00	0.19
Pasture	0.00	0.00	0.00	300.00	0.00
	0.00	0.00	0.00	0.09	0.00

*Receipts for 2020 are included to indicate the relative importance of each enterprise to the farm. Percents indicate the percentage of the total receipts accounted for by the livestock categories and the crops.

**Acreages for 2020 are included to indicate the relative importance of each enterprise to the farm. Total planted acreage may exceed total cropland available due to double cropping. Percents indicate the percentage of total planted acreage accounted for by the crop.

2020 CHARACTERISTICS OF PANEL FARMS PRODUCING WHEAT

- WAW2800** This is a 2,800-acre moderate-sized grain farm in the Palouse of southeastern Washington (Whitman County). It plants 1,840 acres of wheat and 800 acres of dry peas. Disease concerns dictate rotating a minimum acreage of peas to maintain wheat yields. This farm generated 63 percent of 2020 receipts from wheat.
- WAW10000** A 10,000-acre, large-sized grain farm in the Palouse of southeastern Washington (Whitman County). Annually, this farm allocates 5,800 acres to wheat and 2,700 acres to dry peas. Diseases that inhibit wheat yield dictate the rotation of a minimum acreage of peas. Wheat sales accounted for 61 percent of 2020 receipts.
- WAAW5500** South-central Washington (Adams County) is home to this 5,500-acre, large-sized wheat farm. Annually, this farm plants 2,600 acres of wheat in a wheat-fallow rotation. Additionally, 300 acres are enrolled in CRP. In 2020, 91 percent of the farm's income came from wheat.
- ORW4500** ORW4500 is a 4,500-acre large-sized grain farm located in northeastern Oregon (Morrow County). This farm plants 2,250 acres annually in a wheat-fallow rotation. Eighty-six percent of this farm's 2020 total receipts came from wheat sales.
- MTW8000** North-central Montana (Chouteau County) is home to this 9,500-acre farm on which 3,500 acres of wheat (1,920 acres of winter wheat, 1,344 acres of spring wheat, and 544 acres of Durham), 590 acres of barley, and 1200 acres of dry peas are planted each year. MTW8000 uses no-till production practices. In 2020, 50 percent of receipts came from wheat.
- KSCW2000** South central Kansas (Sumner County) is home to this 2,000-acre, moderate-sized grain farm. KSCW2000 plants 800 acres of winter wheat, 1,100 acres of soybeans, 200 acres of cotton, and 500 acres of corn each year. For 2020, 19 percent of gross receipts came from wheat.
- KSCW5300** A 5,300-acre, large-sized grain farm in south central Kansas (Sumner County) that plants 2,385 acres of winter wheat, 1,590 acres of corn, and 3,352 acres of soybeans. Twenty-two percent of this farm's 2020 total receipts were generated from sales of winter wheat.
- KSNW4000** This is a 4,000-acre, moderate-sized northwest Kansas (Thomas County) grain farm. This farm plants 1,200 acres of winter wheat (wheat-fallow rotation), 1,200 acres of corn, and 600 acres of sorghum. This farm generated 26 percent of 2020 receipts from wheat and 62 percent of its receipts from feed grains.
- KSNW8000** KSNW8000 is a 8,000-acre, large-sized northwest Kansas (Thomas County) grain farm that annually plants 1,200 acres of winter wheat, 5,470 acres of corn, 800 acres of sorghum, and 130 acres of soybeans. The farm generated 8 percent of receipts from wheat and 79 percent from feed grains during 2020.
- COW3000** A 3,000-acre northeast Colorado (Washington County), moderate-sized farm that plants 1,012 acres of winter wheat and 675 acres of corn each year. COW3000 has adopted minimum tillage practices on most of its acres. This farm generated 54 percent of its receipts from wheat and 35 percent from corn.
- COW6000** A 6,000-acre, large-sized northeast Colorado (Washington County) wheat farm. It plants 2,000 acres of wheat, 1,000 acres of millet, and 1,000 acres of corn. During 2020, 50 percent of gross receipts came from wheat sales and 24 percent came from corn sales.

Appendix Table A4. Characteristics of Panel Farms Producing Wheat.

	WAW2800	WAW10000	WAAW5500	ORW4500	MTW9500	KSCW2000	KSCW5300	KSNW4000	KSNW8000	COW3000	COW6000
County	Whitman	Whitman	Adams	Morrow	Chouteau	Sumner	Sumner	Thomas	Thomas	Washington	Washington
Total Cropland	2,800.00	10,000.00	5,500.00	4,500.00	9,500.00	2,000.00	5,300.00	4,000.00	8,000.00	3,000.00	6,000.00
Acres Owned	800.00	2,500.00	2,500.00	2,000.00	5,000.00	700.00	1,325.00	600.00	2,100.00	2,100.00	3,000.00
Acres Leased	2,000.00	7,500.00	3,000.00	2,500.00	4,500.00	1,300.00	3,975.00	3,400.00	5,900.00	900.00	3,000.00
Assets (\$1000)											
Total	3,352.00	11,380.00	2,396.00	1,945.00	9,201.00	2,901.00	6,611.00	4,315.00	9,280.00	4,443.00	6,855.00
Real Estate	2,526.00	7,810.00	1,788.00	1,407.00	6,527.00	2,000.00	4,032.00	3,233.00	6,066.00	4,128.00	5,536.00
Machinery	500.00	2,490.00	601.00	516.00	2,027.00	538.00	1,506.00	1,083.00	2,172.00	282.00	1,319.00
Other & Livestock	326.00	1,081.00	8.00	22.00	647.00	363.00	1,073.00	0.00	1,041.00	33.00	0.00
Debt/Asset Ratios											
Total	0.14	0.15	0.23	0.18	0.18	0.12	0.14	0.23	0.16	0.16	0.20
Intermediate	0.07	0.21	0.07	0.12	0.23	0.04	0.16	0.29	0.17	0.09	0.13
Long Run	0.17	0.15	0.18	0.16	0.19	0.17	0.17	0.19	0.18	0.16	0.15
2020 Gross Receipts (\$1,000)*											
Total	1,448.20	4,811.70	736.70	558.90	2,324.00	1,031.70	2,585.90	897.50	2,647.50	475.90	1,022.10
Corn	0.00	0.00	0.00	0.00	0.00	239.30	775.40	385.00	1,745.20	167.60	241.80
	0.00	0.00	0.00	0.00	0.00	0.23	0.30	0.43	0.66	0.35	0.24
Wheat	908.40	2,928.10	669.40	481.20	1,170.10	191.50	569.90	230.50	222.10	256.00	508.20
	0.63	0.61	0.91	0.86	0.50	0.19	0.22	0.26	0.08	0.54	0.50
Soybeans	0.00	0.00	0.00	0.00	0.00	290.10	965.10	0.00	74.60	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.28	0.37	0.00	0.03	0.00	0.00
Cotton	0.00	0.00	0.00	0.00	0.00	195.70	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00
Grain Sorghum	0.00	0.00	0.00	0.00	0.00	4.50	15.50	172.00	275.20	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.19	0.10	0.00	0.00
Barley	4.00	37.30	2.00	0.00	207.50	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.01	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Millet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	174.50
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17
Dry Peas	340.40	1,233.10	0.00	0.00	521.50	0.00	0.00	0.00	0.00	0.00	0.00
	0.24	0.26	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00
Other	195.40	613.30	65.30	77.70	424.90	110.60	260.00	110.10	330.50	52.30	97.50
	0.14	0.13	0.09	0.14	0.18	0.11	0.10	0.12	0.13	0.11	0.10
2020 Planted Acres**											
Total	2,640.00	8,700.00	2,900.00	2,250.00	5,301.00	2,600.00	7,327.00	3,000.00	7,600.00	1,987.50	4,000.00
Corn	0.00	0.00	0.00	0.00	0.00	500.00	1,590.00	1,200.00	5,470.00	675.00	1,000.00
	0.00	0.00	0.00	0.00	0.00	0.19	0.22	0.40	0.72	0.34	0.25
Wheat	1,840.00	5,800.00	2,600.00	2,250.00	3,534.00	800.00	2,385.00	1,200.00	1,200.00	1,012.50	2,000.00
	0.70	0.67	0.90	1.00	0.67	0.31	0.33	0.40	0.16	0.51	0.50
Soybeans	0.00	0.00	0.00	0.00	0.00	1,100.00	3,352.00	0.00	130.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.42	0.46	0.00	0.02	0.00	0.00
Cotton	0.00	0.00	0.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00
Grain Sorghum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	600.00	800.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.11	0.00	0.00
Barley	0.00	0.00	0.00	0.00	589.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00
Millet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,000.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25
Dry Peas	800.00	2,700.00	0.00	0.00	1,178.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.30	0.31	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00
CRP	0.00	200.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	300.00	0.00
	0.00	0.02	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00

*Receipts for 2020 are included to indicate the relative importance of each enterprise to the farm. Percents indicate the percentage of the total receipts accounted for by the livestock categories and the crops.

**Acreages for 2020 are included to indicate the relative importance of each enterprise to the farm. Total planted acreage may exceed total cropland available due to double cropping. Percents indicate the percentage of total planted acreage accounted for by the crop.

2020 CHARACTERISTICS OF PANEL FARMS PRODUCING COTTON

- TXSP4500** The Texas South Plains (Dawson County) is home to this 4,500-acre, large-sized cotton farm that grows 4,380 acres of cotton (2,880 dryland, 1,500 irrigated), and 120 irrigated acres of peanuts. Cotton sales comprised 75 percent of 2020 receipts.
- TXEC5000** This 5,000-acre farm is located on the Eastern Caprock of the Texas South Plains (Crosby County). Annually, 4,700 acres are planted to cotton (2,230 irrigated and 2,470 dryland) and 300 acres to dryland wheat. In 2020, cotton sales accounted for 74 percent of gross receipts.
- TXRP3000** TXRP3000 is a 3,000-acre cotton farm located in the Rolling Plains of Texas (Jones County). This farm plants 1,800 acres of cotton and 1,200 acres of winter wheat each year. The area is limited by rainfall, and the farm uses a conservative level of inputs. Sixty-three percent of 2020 farm receipts came from cotton sales. Fifty head of beef cows generated three percent of farm receipts.
- TXMC2500** This 2,500-acre cotton farm is located on the Coastal Plain of southeast Texas (Wharton County). TXMC2500 farms 300 acres of sorghum, 1,455 acres of cotton, and 655 acres of corn. In 2020, cotton sales comprised 55 percent of total cash receipts on this operation.
- TXCB4000** A 4,000-acre cotton farm located on the Texas Coastal Bend (San Patricio County) that farms 2000 acres of cotton, 1,600 acres of sorghum, and 400 acres of corn annually. Sixty percent of 2020 cash receipts were generated by cotton.
- TXCB10000** Nueces County, Texas is home to this 10,000-acre farm. Annually, 5,000 acres are planted to cotton, 4,500 acres to sorghum, and 500 acres of corn. Cotton sales accounted for 63 percent of 2020 receipts.
- TXVC5500** This 5,500-acre farm is located in the lower Rio Grande Valley of Texas (Willacy County) and plants 2,550 acres to cotton (425 irrigated and 2,125 acres dryland), 2,295 acres to sorghum (170 irrigated and 2,125 dryland), and 255 acres of corn. In 2020, 40 percent of TXVC5500's cash receipts were generated by cotton sales.
- ARNC5000** This 5,000-acre farm is located in northern Arkansas (Mississippi County) and plants 2,500 acres to cotton, 500 acres to corn, 1,000 acres of soybeans, and 1,000 acres to peanuts. In 2020, 44 percent of ARNC5000's cash receipts were generated by cotton sales.
- TNC3000** A 3,000-acre, moderate-sized West Tennessee (Fayette County) cotton farm. TNC3000 consists of 825 acres of cotton, 1,375 acres of soybeans, and 800 acres of corn. Cotton accounted for 30 percent of 2020 gross receipts, with corn and soybeans contributing 25 percent and 27 percent, respectively.
- TNC4000** TNC4000 is a 4,000-acre, large-sized West Tennessee (Haywood County) cotton farm. This farm plants 1,000 acres of cotton, 2,000 acres of soybeans, 700 acres of corn, and 400 acres of wheat each year. During 2020, cotton sales generated 30 percent of gross receipts.

Appendix Table A5. Characteristics of Panel Farms Producing Cotton.

	TXSP4500	TXEC5000	TXRP3000	TXMC2500	TXCB4000	TXCB10000	TXVC5500	ARNC5000	TNC3000	TNC4000
County	Dawson	Crosby	Jones	Wharton	San Patricio	Nueces	Willacy	Mississippi	Fayette	Haywood
Total Cropland	4,500.00	5,000.00	3,000.00	2,500.00	4,000.00	10,000.00	5,500.00	5,000.00	3,000.00	4,000.00
Acres Owned	500.00	1,250.00	875.00	180.00	600.00	1,500.00	1,750.00	1,000.00	300.00	400.00
Acres Leased	4,000.00	3,750.00	2,125.00	2,320.00	3,400.00	8,500.00	3,750.00	4,000.00	2,700.00	3,600.00
Assets (\$1000)										
Total	3,110.00	4,456.00	1,787.00	2,551.00	3,537.00	10,453.00	8,346.00	12,570.00	3,716.00	5,625.00
Real Estate	690.00	1,751.00	1,402.00	864.00	1,662.00	4,835.00	5,264.00	6,287.00	1,202.00	2,338.00
Machinery	2,040.00	1,918.00	344.00	1,268.00	1,467.00	3,832.00	1,796.00	4,424.00	1,387.00	2,419.00
Other & Livestock	380.00	787.00	41.00	419.00	407.00	1,785.00	1,286.00	1,859.00	1,128.00	869.00
Debt/Asset Ratios										
Total	0.18	0.11	0.43	0.19	0.21	0.20	0.18	0.15	0.13	0.14
Intermediate	0.21	0.09	0.20	0.24	0.28	0.31	0.29	0.22	0.19	0.15
Long Run	0.17	0.18	0.34	0.17	0.20	0.18	0.19	0.15	0.18	0.18
2020 Gross Receipts (\$1,000)*										
Total	2,531.50	2,885.40	817.00	1,788.80	2,605.70	6,853.00	4,412.10	5,092.40	2,467.60	3,184.90
Corn	0.00	0.00	0.00	327.20	113.60	95.10	159.20	417.50	610.20	499.30
	0.00	0.00	0.00	0.18	0.04	0.01	0.04	0.08	0.25	0.16
Wheat	0.00	0.00	106.60	0.00	0.00	0.00	0.00	0.00	0.00	142.90
	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Soybeans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	569.00	655.70	934.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.27	0.29
Cotton	1,891.70	2,139.20	518.10	988.40	1,565.30	4,314.50	1,779.50	2,219.30	739.20	966.60
	0.75	0.74	0.63	0.55	0.60	0.63	0.40	0.44	0.30	0.30
Grain Sorghum	0.00	16.30	0.00	144.20	418.10	1,332.30	884.00	0.00	0.00	0.00
	0.00	0.01	0.00	0.08	0.16	0.19	0.20	0.00	0.00	0.00
Peanuts	101.40	0.00	0.00	0.00	0.00	0.00	0.00	996.90	0.00	0.00
	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00
Rice	0.00	0.00	0.00	1.60	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cattle	0.00	0.00	27.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other	538.40	730.00	165.40	327.50	508.80	1,111.10	1,589.40	889.70	462.60	642.10
	0.21	0.25	0.20	0.18	0.20	0.16	0.36	0.18	0.19	0.20
2020 Planted Acres**										
Total	4,500.00	5,000.00	3,000.00	2,410.00	4,000.00	10,000.00	5,100.00	5,000.00	3,000.00	4,100.00
Corn	0.00	0.00	0.00	655.00	400.00	500.00	255.00	500.00	800.00	700.00
	0.00	0.00	0.00	0.27	0.10	0.05	0.05	0.10	0.27	0.17
Wheat	0.00	300.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	400.00
	0.00	0.06	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.10
Soybeans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,000.00	1,375.00	2,000.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.46	0.49
Cotton	4,380.00	4,700.00	1,800.00	1,455.00	2,000.00	5,000.00	2,550.00	2,500.00	825.00	1,000.00
	0.97	0.94	0.60	0.60	0.50	0.50	0.50	0.50	0.28	0.24
Grain Sorghum	0.00	0.00	0.00	300.00	1,600.00	4,500.00	2,295.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.12	0.40	0.45	0.45	0.00	0.00	0.00
Peanuts	120.00	0.00	0.00	0.00	0.00	0.00	0.00	1,000.00	0.00	0.00
	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00

*Receipts for 2020 are included to indicate the relative importance of each enterprise to the farm. Percents indicate the percentage of the total receipts accounted for by the livestock categories and the crops.

**Acres for 2020 are included to indicate the relative importance of each enterprise to the farm. Total planted acreage may exceed total cropland available due to double cropping. Percents indicate the percentage of total planted acreage accounted for by the crop.

2020 CHARACTERISTICS OF PANEL FARMS PRODUCING COTTON

- ALC3500** A 3,500-acre cotton farm located in northern Alabama (Lawrence County) that plants 1,050 acres to cotton, 1,050 acres to corn, 1,400 acres of soybeans and 875 acres to wheat (double cropped with soybeans) annually. This farm was early to adopt no-till cropping practices. Cotton sales accounted for 26 percent of total farm receipts during 2020.
- GAC2500** Southwest Georgia (Decatur County) is home to a 2,500-acre cotton farm that plants 1,250 acres to cotton, 800 acres to peanuts, and 450 acres to corn. In 2020, farm receipts were comprised of cotton sales (35 percent), corn (16 percent), and peanut sales (33 percent). The farm also runs a 125-head beef cow herd, generating 3 percent of 2020 receipts.
- NCNP1600** A 1,600-acre diversified farm located in northern North Carolina (Edgecombe County). NCNP1600 plants 320 acres of peanuts, 240 acres of corn, 640 acres of cotton, and 400 acres of soybeans. Twenty-three percent of receipts for this farm came from peanut sales in 2020, 37 percent from cotton sales and 24 percent came from corn and soybean sales.

Appendix Table A6. Characteristics of Panel Farms Producing Cotton.

	ALC3500	GAC2500	NCNP1600
County	Lawrence	Decatur	Edgecombe
Total Cropland	3,500.00	1,250.00	1,600.00
Acres Owned	350.00	1,250.00	600.00
Acres Leased	3,150.00	0.00	1,000.00
Assets (\$1000)			
Total	6,127.00	10,860.00	3,834.00
Real Estate	2,808.00	8,416.00	2,572.00
Machinery	1,840.00	1,499.00	1,260.00
Other & Livestock	1,479.00	945.00	2.00
Debt/Asset Ratios			
Total	0.16	0.17	0.20
Intermediate	0.27	0.21	0.18
Long Run	0.18	0.18	0.16
2020 Gross Receipts (\$1,000)*			
Total	3,235.70	3,528.70	1,339.90
Corn	746.60	549.00	141.60
	0.23	0.16	0.11
Wheat	462.00	0.00	0.00
	0.14	0.00	0.00
Soybeans	624.70	0.00	173.50
	0.19	0.00	0.13
Cotton	833.50	1,239.50	491.60
	0.26	0.35	0.37
Peanuts	0.00	1,162.00	305.10
	0.00	0.33	0.23
Cattle	0.00	91.70	0.00
	0.00	0.03	0.00
Other	568.90	486.50	228.10
	0.18	0.14	0.17
2020 Planted Acres**			
Total	4,375.00	2,750.00	1,600.00
Corn	1,050.00	450.00	240.00
	0.24	0.16	0.15
Wheat	875.00	0.00	0.00
	0.20	0.00	0.00
Soybeans	1,400.00	0.00	400.00
	0.32	0.00	0.25
Cotton	1,050.00	1,250.00	640.00
	0.24	0.46	0.40
Peanuts	0.00	800.00	320.00
	0.00	0.29	0.20
Pasture	0.00	250.00	0.00
	0.00	0.09	0.00

*Receipts for 2020 are included to indicate the relative importance of each enterprise to the farm. Percents indicate the percentage of the total receipts accounted for by the livestock categories and the crops.

**Acreages for 2020 are included to indicate the relative importance of each enterprise to the farm. Total planted acreage may exceed total cropland available due to double cropping. Percents indicate the percentage of total planted acreage accounted for by the crop.

2020 CHARACTERISTICS OF PANEL FARMS PRODUCING RICE

- CAR1200** CAR1200 is a 1,200-acre moderate-sized rice farm in the Sacramento Valley of California (Sutter and Yuba Counties) that plants 1,200 acres of rice annually. This farm generated 99 percent of 2020 gross receipts from rice sales.
- CAR3000** This is a 3,000-acre rice farm located in the Sacramento Valley of California (Sutter and Yuba Counties) that is large-sized for the region. CAR3000 plants 3,000 acres of rice annually. In 2020, 99 percent of gross receipts were generated from rice sales.
- CABR800** The Sacramento Valley (Butte County) is home to CABR800, a 800-acre rice farm. CABR800 harvests 800 acres of rice annually, generating 99 percent of 2020 farm receipts from rice sales.
- CACR800** CACR800 is an 800-acre rice farm located in the Sacramento Valley of California (Colusa County). This farm harvests 800 acres of rice each year. During 2020, 99 percent of farm receipts were realized from rice sales.
- TXR1500** This 1,500-acre rice farm located west of Houston, Texas (Colorado County) is moderate-sized for the region. TXR1500 harvests 600 acres of rice. The farm generated 97 percent of its receipts from rice during 2020.
- TXR3000** TXR3000 is a 3,000-acre, large-sized rice farm located west of Houston, Texas (Colorado County). This farm harvests 1,500 acres of rice annually. TXR3000 realized 98 percent of 2020 gross receipts from rice sales.
- TXBR1800** The Texas Gulf Coast (Matagorda County) is home to this 1,800-acre rice farm. TXBR1800 generally plants a third of its acres to rice annually and fallows the remainder. The farm generated 98 percent of its receipts from rice during 2020.
- TXER2500** This 2,500-acre rice farm is located in the Texas Gulf Coast (Wharton County). TXER2500 harvests 1,250 acres of rice each year. The farm also grows 1,250 acres of corn. Seventy-four percent of 2020 receipts came from rice sales.
- LASR2000** A 2,000-acre southwest Louisiana (Acadia, Jeff Davis, and Vermilion parishes) rice farm, LASR2000 is moderate-sized for the area. This farm harvests 1,000 acres of rice and 200 acres of soybeans. During 2020, 60 percent of gross receipts were generated from rice sales.
- ARMR6500** ARMR6500 is a 6,500-acre diversified rice farm in southeast Arkansas (Desha County) that plants 650 acres of rice, 3,900 acres of soybeans, and 1,950 acres of corn. For 2020, 11 percent of gross receipts came from rice sales, 29 percent from corn sales, and 48 percent from soybean sales.

Appendix Table A7. Characteristics of Panel Farms Producing Rice.

	CAR1200	CAR3000	CABR800	CACR800	TXR1500	TXR3000	TXBR1800	TXER2500	LASR2000	ARMR6500
County	Sutter	Sutter	Butte	Colusa	Colorado	Colorado	Matagorda	Wharton	Acadia	Desha
Total Cropland	1,200.00	3,000.00	800.00	800.00	1,500.00	3,000.00	1,800.00	2,500.00	2,000.00	6,500.00
Acres Owned	360.00	900.00	320.00	240.00	405.00	0.00	0.00	0.00	200.00	1,200.00
Acres Leased	840.00	2,100.00	480.00	560.00	1,095.00	3,000.00	1,800.00	2,500.00	1,800.00	5,300.00
Assets (\$1000)										
Total	4,003.00	14,894.00	5,580.00	4,420.00	2,530.00	1,887.00	1,211.00	1,368.00	2,736.00	10,079.00
Real Estate	2,525.00	10,650.00	4,100.00	3,990.00	1,408.00	107.00	143.00	98.00	1,533.00	5,938.00
Machinery	894.00	3,616.00	1,265.00	430.00	1,114.00	1,546.00	903.00	1,017.00	1,119.00	2,836.00
Other & Livestock	584.00	628.00	216.00	0.00	8.00	234.00	164.00	252.00	83.00	1,305.00
Debt/Asset Ratios										
Total	0.12	0.19	0.17	0.20	0.25	0.27	0.21	0.10	0.18	0.16
Intermediate	0.05	0.22	0.15	0.05	0.20	0.29	0.24	0.12	0.16	0.22
Long Run	0.18	0.18	0.18	0.18	0.17	0.18	0.19	0.18	0.18	0.15
2020 Gross Receipts (\$1,000)*										
Total	2,401.20	6,121.20	1,667.50	1,572.40	897.60	2,004.40	1,127.80	2,667.20	1,504.20	6,006.80
Corn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	571.60	0.00	1,710.90
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.29
Soybeans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	70.10	2,886.70
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.48
Rice	2,368.90	6,065.70	1,645.80	1,552.80	871.80	1,962.50	1,101.30	1,961.80	903.20	643.40
	0.99	0.99	0.99	0.99	0.97	0.98	0.98	0.74	0.60	0.11
Other	32.30	55.60	21.70	19.60	25.80	41.90	26.50	133.80	530.90	765.80
	0.01	0.01	0.01	0.01	0.03	0.02	0.02	0.05	0.35	0.13
2020 Planted Acres**										
Total	1,200.00	3,000.00	800.00	800.00	600.00	1,500.00	600.00	2,500.00	1,200.00	6,500.00
Corn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,250.00	0.00	1,950.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.30
Soybeans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	200.00	3,900.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.60
Rice	1,200.00	3,000.00	800.00	800.00	600.00	1,500.00	600.00	1,250.00	1,000.00	650.00
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.50	0.83	0.10

*Receipts for 2020 are included to indicate the relative importance of each enterprise to the farm. Percents indicate the percentage of the total receipts accounted for by the livestock categories and the crops.

**Acreages for 2020 are included to indicate the relative importance of each enterprise to the farm. Total planted acreage may exceed total cropland available due to double cropping. Percents indicate the percentage of total planted acreage accounted for by the crop.

2020 CHARACTERISTICS OF PANEL FARMS PRODUCING RICE

- ARSR3240** ARSR3240 is a 3,240-acre, large-sized Arkansas (Arkansas County) rice farm that harvests 1,458 acres of rice, 1,458 acres of soybeans, and 324 acres of corn each year. Fifty-seven percent of this farm's 2020 receipts came from rice sales.
- ARWR2500** East central Arkansas (Cross County) is home to this 2,500-acre rice farm. Moderate-sized for the region, ARWR2500 annually plants 1,250 acres each to rice and soybeans. During 2020, rice sales generated 62 percent of gross receipts.
- ARHR4000** ARHR4000 is a 4,000-acre large-sized northeast Arkansas (Lawrence County) rice farm that annually harvests 2,400 acres of rice, 1,400 acres of soybeans, and 200 acres of corn. Rice sales accounted for 74 percent of 2020 farm receipts.
- MSDR5000** MSDR5000 is a 5,000-acre Mississippi Delta (Bolivar County) rice farm that annually harvests 1,667 acres of rice and 3,333 acres of soybeans. Rice sales accounted for 42 percent of 2020 farm receipts. Soybeans account for 51 percent of receipts.
- MOBR4000** MOBR4000 is a 4,000-acre Missouri Bootheal (Pemiscot County) rice farm. The farm annually harvests 1,320 acres of rice, 1,800 acres of soybeans and 880 acres of corn. Rice sales accounted for 45 percent of farm receipts in 2020.

Appendix Table A8. Characteristics of Panel Farms Producing Rice.

	ARSR3240	ARWR2500	ARHR4000	MSDR5000	MOBR4000
County	Arkansas	Cross	Lawrence	Bolivar	Pemiscot
Total Cropland	3,240.00	2,500.00	4,000.00	5,000.00	4,000.00
Acres Owned	648.00	1,250.00	1,000.00	3,000.00	1,000.00
Acres Leased	2,592.00	1,250.00	3,000.00	2,000.00	3,000.00
Assets (\$1000)					
Total	6,088.00	7,873.00	9,107.00	18,981.00	10,186.00
Real Estate	3,749.00	6,295.00	5,987.00	14,540.00	6,921.00
Machinery	1,677.00	1,517.00	3,023.00	3,497.00	2,987.00
Other & Livestock	662.00	61.00	97.00	944.00	278.00
Debt/Asset Ratios					
Total	0.16	0.14	0.17	0.18	0.19
Intermediate	0.19	0.10	0.13	0.24	0.22
Long Run	0.17	0.13	0.18	0.17	0.18
2020 Gross Receipts (\$1,000)*					
Total	2,785.30	1,939.30	3,462.30	4,050.30	2,781.00
Corn	277.10	0.00	149.50	0.00	574.80
	0.10	0.00	0.04	0.00	0.21
Wheat	9.60	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00
Soybeans	761.30	629.10	599.50	2,082.90	740.20
	0.27	0.32	0.17	0.51	0.27
Rice	1,580.70	1,206.00	2,570.50	1,683.90	1,262.20
	0.57	0.62	0.74	0.42	0.45
Other	156.60	104.20	142.80	283.50	203.90
	0.06	0.05	0.04	0.07	0.07
2020 Planted Acres**					
Total	3,240.00	2,500.00	4,240.00	5,000.00	4,000.00
Corn	324.00	0.00	200.00	0.00	880.00
	0.10	0.00	0.05	0.00	0.22
Soybeans	1,458.00	1,250.00	1,400.00	3,333.00	1,800.00
	0.45	0.50	0.33	0.67	0.45
Rice	1,458.00	1,250.00	2,640.00	1,667.00	1,320.00
	0.45	0.50	0.62	0.33	0.33

*Receipts for 2020 are included to indicate the relative importance of each enterprise to the farm. Percents indicate the percentage of the total receipts accounted for by the livestock categories and the crops.

**Acreages for 2020 are included to indicate the relative importance of each enterprise to the farm. Total planted acreage may exceed total cropland available due to double cropping. Percents indicate the percentage of total planted acreage accounted for by the crop.

Appendix B

Representative Farm Panel Members and Facilitators

FEED GRAIN FARMS

Indiana

Facilitators

Mr. Scott Gabbard - Extension Educator, Shelby County, Purdue Cooperative Extension

Panel Participants

Mr. David Brown
Mr. Gary Everhart
Mr. Jason & Dan Foltz
Mr. Darrell Linville
Mr. Ken Simpson
Mr. Doug Theobald

Mr. Kevin Carson
Mr. Andy Fix
Ms. Carmen Hawk
Mr. Gary Robards
Ms. Angie Steinbarger
Mr. Jeremy Weaver

Iowa

Facilitators

Mr. Jerry Chizek - County Extension Director, Webster County

Panel Participants

Mr. Doug Adams
Mr. Dean Black
Mr. A.J. Blair
Mr. Tyler Lane
Mr. Steve Peterson
Mr. Jason Stanek
Mr. Kent Wuebker

Mr. Brad Black
Mr. Perry Black
Mr. Gregg Hora
Mr. Jay Lynch
Mr. Doug Stanek
Mr. Brent Wells
Mr. Loren Wuebker

Missouri - Central

Facilitators

Mr. Parman Green

Panel Participants

Mr. Joe Brockmeier
Mr. Kevin Casner
Mr. Kyle Durham
Mr. Todd Gibson
Mr. Jack Harriman
Mr. Mike Hisle
Mr. Glenn Kaiser
Mr. David Kipping
Mr. Craig Linneman
Mr. James Wheeler

Mr. Michael Brockmeier
Mr. Mark Casner
Mr. Dennis Germann
Mr. Dale Griffith
Mr. Todd Hensiek
Mr. Preston Hisle
Mr. Marc Kaiser
Mr. Robert Kipping
Mr. Mike Ritchhart

Missouri - Northwest

Facilitators

Mr. Peter Zimmel - FAPRI, University of Missouri

Panel Participants

Mr. Terry Ecker
Mr. Russell Miller
Mr. Nick Rosenbohm

Mr. Curtis Lewis
Mr. Matt Rosenbohm
Mr. Andrew Stoll

FEED GRAIN FARMS (CONTINUED)

Nebraska - Central

Facilitators

Ms. Sarah Sivits
Mr. Bruce Treffer - Extension Educator, Dawson County

Panel Participants

Mr. Jim Aden	Mr. Rob Anderson
Mr. Bart Beattie	Mr. Greg Hueftle
Mr. Pat Luther	Mr. Tim Maline
Mr. Clark McPheeters	Mr. Scott McPheeters
Mr. Cody Peden	Mr. Rod Reynolds
Mr. Dave Rowe	Mr. Paul Stieb
Mr. Dan Strauss	

North Dakota

Facilitators

Mr. Randy Grueneich - County Extension Agent, North Dakota State University
Dr. Bryon Parman - Extension Associate-Farm Management, North Dakota State University

Panel Participants

Mr. John Robert Anderson	Mr. Eric Broten
Mr. Jim Broten	Mr. Wade Bruns
Mr. Mike Clemens	Mr. Mark Formo
Mr. Leland Gussette	Mr. Rob Hanson
Mr. Jason Haugen	Mr. Charlie Kreidelcamp
Mr. Greg Shanenko	Mr. Anthony Thilmony

Ohio

Facilitators

Mr. Ben Brown - Assistant Professor

Panel Participants

Mr. Dean Bixel	Mr. Scott Conrad
Mr. Mark Drewes	Mr. Matt Eggers
Mr. Todd Hesterman	Mr. Tim Holbrook
Mr. Eric Johnson	Mr. Jeremy Tedrow
Mr. Kevin Thierry	

Ohio - Napoleon

Facilitators

Mr. Ben Brown - Assistant Professor

Panel Participants

Mr. Dean Bixel	Mr. Scott Conrad
Mr. Mark Drewes	Mr. Matt Eggers
Mr. Todd Hesterman	Mr. Tim Holbrook
Mr. Eric Johnson	Mr. Jeremy Tedrow
Mr. Kevin Thierry	

FEED GRAIN FARMS (CONTINUED)

South Carolina

Facilitators

Mr. Scott Mickey
Dr. Nathan Smith

Panel Participants

Mr. Neal Baxley	Ms. Vikki Brogdon
Mr. Chris Cogdill	Mr. Harry DuRant
Mr. Sam DuRant	Mr. Jason Gamble
Mr. Steven Gamble	Mr. Barry Hutto
Mr. Tommy Lee	Mr. Joe McKeower
Mr. John Michael Parimuha	

Tennessee - Trenton

Facilitators

Mr. Jeff Lannom - Extension Agent & County Director, Weakley County
Mr. Chris Narayanan
Mr. Philip Shelby - Extension Agent, Gibson County
Mr. Tim Smith - County Extension Agent, Obion County

Panel Participants

Mr. Steven Agee	Mr. Brent Baier
Mr. Kenneth Barnes	Mr. Randy Boals
Mr. Mike Brundige	Mr. John Chester
Mr. Kaleb Dinwiddie	Mr. Mike Freeman
Mr. Bobby Garner	Mr. Derek Griffin
Mr. Brent Griggs	Mr. Gary Hall
Mr. Rob Holman	Mr. Josh Little
Mr. Todd Littleton	Mr. Jason Luckey
Mr Ben Moore	Mr. Scotty Ogg
Mr. David Oliver	Mr. Eric Owen
Mr. John Parrish	Mr. Eric Partee
Mr. Hedrick Shoaf	Mr. Kevin Smethwick
Mr. Keith Steele	Mr. Seth Taylor
Mr. James Wall	Mr. Jody Wright
Mr. Jay Yeargin	

Texas - Northern Blackland Prairie

Facilitators

Mr. Zach Davis - County Extension Agent, Hill County

Panel Participants

Mr. Chad Kaska	Mr. Todd Kimbrell, Jr.
Mr. Chad Radke	Mr. John Sawyer

Texas - Northern High Plains

Facilitators

Mr. Marcel Fischbacher - County Extension Agent, Moore County

Panel Participants

Mr. Tommy Cartrite	Mr. Brent Clark
Mr. Justin Garrett	Mr. Kelly Hays
Mr. Casey Kimbrell	Mr. Tom Moore
Mr. Chandler Preston	Mr. Jon Reznik
Mr. Stan Spain	Mr. Darren Stallwitz
Mr. Dee Vaughan	Ms. Linda Williams

FEED GRAIN FARMS (CONTINUED)

Texas - Panhandle

Facilitators

Mr. Rick Auckerman - County Extension Agent, Texas Cooperative Extension

Panel Participants

Mr. Michael Carlson

Mr. Roy Carlson

Mr. Greg Chavez

Mr. Steve Hoffman

Mr. Bob Meyer

Mr. Tom Schlabs

Texas - Southern Blackland Prairie

Facilitators

Mr. Cooper Terrill - County Extension Agent, Williamson County

Panel Participants

Mr. Terry Pekar

Mr. Herbert Raesz

Mr. Ken Seggern

Texas - Southwest

Facilitators

Mr. Samantha Korzekwa - County Extension Agent, Uvalde County

Panel Participants

Mr. Jimmy Carnes

Mr. Ralph Hesse

Mr. Mark Landry

Mr. Danny Parker

WHEAT FARMS

Colorado

Facilitators

Mr. John Deering - Ag Business Agent, North Star Bank
Mr. Dennis Kaan - Director, Golden Plains Area Extension, Colorado State University

Panel Participants

Mr. Rollie Deering	Mr. Ward Deering
Mr. David Foy	Mr. Dale Hansen
Mr. William Harman	Mr. Barry Hinkhouse
Mr. Terry Kuntz	Mr. Shane Leoffler
Mr. Dave Lillich	Mr. Max Olsen
Ms. Sara Olsen	Mr. Ken Remington
Mr. Craig Saxton	Mr. Calvin Schaffert
Mr. Harlan Schaffert	Mr. Dave Wagers
Mr. John Wright	

Kansas - Northwest

Facilitators

Dr. Dan O'Brien - Area Extension Director, Kansas State University
Mr. Mark Wood - Extension Agricultural Economist, Kansas Farm Mgmt. Association

Panel Participants

Mr. Tanner Brown	Mr. Craig Busse
Mr. Steve Busse	Mr. Rich Calliham
Mr. Sam Crouse	Mr. Aaron Horinek
Mr. Lee Juenemann	Mr. Daniel Leebrick
Mr. Kenan Reeh	Mr. Tyler Roe
Mr. Steve Schertz	

Kansas - South Central

Facilitators

Mr. Randy Hein - County Extension Agent, Sumner County
Mr. Zach Simon - County Extension Agent, Sedgwick County

Panel Participants

Mr. Colton Day	Mr. Dennis Gruenbacher
Mr. Doug Hisken	Mr. Aaron Lange
Mr. Kent Ott	Mr. Steve Schmidt
Mr. Mike Slack	Mr. Nick Steffen
Troy & Julia Strnad	Mr. Tim Turek
Mr. Robert White	

Montana - North Central

Facilitators

Mr. Lochiel Edwards

Panel Participants

Mr. Darin Arganbright	Mr. Steve Bahnmilller
Mr. Duane Beirwagen	Mr. Will Roehm
Mr. Dan Works	

WHEAT FARMS (CONTINUED)

Oregon - North Central

Facilitators

Jon Farquharson

Panel Participants

Mr. Dana Heideman

Mr. Joe McElligott

Mr. Eric Orem

Mr. Tim and Shannon Rust

Mr. Bill Jepsen

Mr. Craig Miles

Mrs. Shannon Rust

Washington

Facilitators

Mr. Aaron Esser - County Director, WSU Extension

Panel Participants

Mr. Trevor Jantz

Mr. Mike Miller

Mr. Travis Simonson

Mr. Traven Smith

Mr. Ron Jirava

Mr. Justin Simonson

Mr. Tim Smith

Mr. Steve Taylor

Washington - Palouse

Facilitators

Dr. Janet Schmidt - Extension Faculty, Washington State University

Mr. Steve Van Vleet - Extension Agronomist, Washington State University

Panel Participants

Mr. Ben Barstow

Mr. Gavin Clark

Mr. Aaron Gfeller

Ms. Kenda Hergert

Ms. Heidi Kopf

Mr. Gary Largent

Mr. Steve Mader

Mr. Clark Miller

Mr. Chris Schultheis

Mr. Steve Teade

Mr. Asa Clark

Mr. Scot Cocking

Mr. David Harlow

Mr. Dean Kinzer

Mr. Brian Largent

Mr. Michael Largent

Ms. Amy McKay

Mr. Bruce Nelson

Mr. David Swannack

Mr. Jon Whitman

COTTON FARMS

Alabama

Panel Participants

Mr. James Blythe
Mr. Jarred Darnell
Mr. William Lee

Mr. Paul Clark
Dr. Steve Ford
Ms. Larkin Martin

Arkansas

Facilitators

Mr. Ray Benson
Mr. Ronnie Kennett
Dr. Brad Watkins - Research Assistant Professor, U. of Arkansas Cooperative Extension

Panel Participants

Mr. Chad Costner
Mr. Todd Edwards
Mr. Justin Hawkins
Mr. David Wildy

Mr. Heath Donner
Mr. Cole Hawkins
Mr. Kenny Jackson

Georgia - Southwest

Facilitators

Ms. Nan Bostick - County Extension Coordinator, Decatur County
Mr. Cody Powell
Dr. Adam Rabinowitz

Panel Participants

Mr. Andy Bell
Mr. Greg Mims
Mr. Brad Thompson

Mr. Jerry Jones
Mr. Willard Mims
Mr. Raymond Thompson

North Carolina

Facilitators

Mr. Daryl Anderson - County Extension Agent
Dr. Blake Brown
Mr. Gary Bullen
Mr. Kevin Johnson - County Extension Director, Wayne County

Panel Participants

Mr. Landis Brantham, Jr.
Mr. Willie Howell
Mr. Danny C. Pierce
Mr. Bryant Worley

Mr. Michael Gray
Mr. David B. Mitchell, Sr.
Mr. Craig West

South Carolina

Facilitators

Mr. Jonathan Croft
Mr. Scott Mickey
Dr. Nathan Smith

Panel Participants

Mr. Jimmie Griner
Mr. John McLaurin
Mr. Landrum Weathers

Mr. Dean Hutto
Mr. David Tindal

COTTON FARMS (CONTINUED)

Tennessee

Facilitators

Mr. Walter Battle - Co-Director, Haywood County Extension
Mr. Chris Narayanan
Ms. Lindsay Stephenson
Mr. Jeff Via - County Extension Director, Fayette County

Panel Participants

Mr. Alex Armour	Mr. Link Carlton
Mr. Chuck Dacus	Mr. Willie German
Mr. Lee Graves	Mr. Ed Karcher
Mr. Rob Karcher	Mr. Allen King
Mr. John King	Mr. Kinney McRae
Mr. Hassell Smith	

Texas - Coastal Bend

Facilitators

Mr. Bobby McCool - County Extension Agent, San Patricio County and Aransas County
Mr. Mark Miller - Chief Operations Officer, Texas AgFinance
Mr. Jeff Nunley - Executive Director, South Texas Cotton & Grain Association
Mr. Jason Ott - County Extension Agent, Nueces County
Mr. John Parker - Vice President, Texas AgFinance

Panel Participants

Mr. Travis Adams	Mr. Marvin Beyer, Jr.
Mr. Colin Chopelas	Mr. Jimmy Dodson
Mr. Jon Gwynn	Mr. Darrell Lawhon
Mr. Larry McNair	Mr. Andrew Miller
Mr. Toby Robertson	Mr. Darby Salge
Mr. David Weaver	Mr. Jon Whatley

Texas - Eastern Caprock

Facilitators

Ms. Caitlin Jackson

Panel Participants

Mr. Lloyd Arthur	Mr. Brooks Ellison
Mr. Mark Schoepf	Mr. Conner Wilmeth

Texas - Mid Coast

Facilitators

Mr. Jeff Nunley - Executive Director, South Texas Cotton & Grain Association
Mr. Jimmy Roppolo - General Manager, United Ag

Panel Participants

Mr. Daniel Gavranovic	Mr. Duane Lutringer
Mr. Cedric Popp	Mr. Michael Popp
Mr. Darrell Schoeneberg	Mr. Mike Watz

Texas - Rio Grande Valley

Facilitators

Mr. Matthew Rodriguez - County Extension Agent

Panel Participants

Mr. Jerry Chappell	Mr. Joe Pennington
Mr. Spence Pennington	Mr. Ivan Salazar
Mr. Zachary Swanberg	Mr. Mark Willis

COTTON FARMS (CONTINUED)

Texas - Rolling Plains

Facilitators

Mr. Steven Estes - County Extension Agent, Texas AgriLife Extension

Panel Participants

Mr. Larry Lytle

Mr. Cody Roberts

Mr. Mike Sloan

Mr. Rick Vickers

Mr. Terry White

Mr. Michael McLellan

Mr. Brian Sandbothe

Mr. Dale Spurgin

Mr. Ferdie Walker

Texas - Southern High Plains

Facilitators

Mr. Gary Roschetzky - County Extension Agent, Dawson County

Panel Participants

Mr. Terry Coleman

Mr. Kirk Tidwell

Mr. Donald Vogler

Mr. Will Cozart

Mr. Johnny Ray Todd

Mr. David Warren

RICE FARMS

Arkansas

Facilitators

Mr. Chuck Capps
Mr. Steve Kelley
Mr. Steven Stone
Dr. Brad Watkins - Research Assistant Professor, U. of Arkansas Cooperative Extension
Mr. Gus Wilson

Panel Participants

Mr. John Gates	Mr. Andrew Gill
Mr. Andy Gill	Mr. Tad Keller
Mr. Joe Mencer	Mr. Matt Miles
Mr. Jim Whitaker	Mr. Sam Whitaker

Arkansas - East Central-Arkansas County

Facilitators

Mr. Bill Free - Riceland Foods, Inc.
Dr. Brad Watkins - Research Assistant Professor, U. of Arkansas Cooperative Extension

Panel Participants

Mr. Brandon Bauman	Mr. Derek Bohanan
Mr. Monty Bohanan	Mr. Dusty Hoskyn
Mr. Stephen Hoskyn	Mr. David Jessup
Mr. Garth Jessup	

Arkansas - East Central-Cross County

Facilitators

Dr. Brad Watkins - Research Assistant Professor, U. of Arkansas Cooperative Extension
Mr. Rick Wimberley - County Extension Agent - Staff Chair, U. of Arkansas Cooperative

Panel Participants

Mr. Corbin Brown	Mr. John Cooper
Mr. Byron Holmes, Jr.	Mr. Bryan Moery
Mr. Roger Pohlner	

Arkansas - Northeast-Lawrence County

Facilitators

Mr. Michael Andrews
Mr. Bryce Baldrige
Ms. Courtney Sisk
Dr. Brad Watkins - Research Assistant Professor, U. of Arkansas Cooperative Extension

Panel Participants

Mr. Greg Baltz	Mr. Jeremy Baltz
Mr. Ricky Burris	Mr. Ronald Cavenaugh
Mr. Doug Cox	Mr. Bruce Manning
Mr. Joe Richardson	Mr. Vic Stone

California - Butte County

Facilitators

Dr. Luis Espino
Mr. Tim Johnson - President and CEO, California Rice Commission

Panel Participants

Mr. Seth Fiack	Mr. Imran Khan
Mr. Peter Rystrom	Mr. Josh Sheppard
Mr. Derek Sohnrey	

RICE FARMS (CONTINUED)

California - Colusa County

Facilitators

Dr. Luis Espino
Mr. Tim Johnson - President and CEO, California Rice Commission

Panel Participants

Mr. Don Bransford
Mr. Leo LaGrande
Mr. Alex Struckmeyer

Ms. Kim Gallagher
Mr. Charles Marsh

California - Sutter County

Facilitators

Ms. Whitney Brim-DeForest - UCCE Farm Advisor
Mr. Tim Johnson

Panel Participants

Mr. Bard Anderson
Mr. Tom Butler
Mr. Ned Lemenager
Mr. Jon Munger
Mr. Michael Rue
Mr. Rob Van Dyke

Mr. Paul Baggett
Mr. Mike DeWit
Mr. Charley Mathews
Mr. Rick Nelson
Mr. Don Traynham
Ms. Nicole Van Vleck

Louisiana - Northeast

Facilitators

Mr. Scott Franklin

Panel Participants

Mr. Ed Greer
Mr. John Owen

Mr. Heath Herring
Mr. Russ Ratcliff

Louisiana - Southwest-Acadiana

Panel Participants

Mr. Al Cramer
Mr. David Lacour
Mr. Jackie Loewer
Mr. Christian Richard

Mr. Tommy Faulk
Mr. Alan Lawson
Mr. Micah Loewer
Mr. Fred Zaunbrecher

Mississippi - Cleveland

Facilitators

Dr. Larry Falconer - Extension Professor
Mr. Craig Hankins - Extension Agent

Panel Participants

Mr. Michael Aguzzi
Mr. Gary Fioranelli
Mr. Kirk Satterfield

Mr. Austin Davis
Mr. Randy Howarth

Missouri

Facilitators

Mr. Trent Haggard - Director, Fisher Delta Research Center

Panel Participants

Mr. John Anderson
Mr. Rance Daniels
Mr. Jim Priggel

Mr. Alex Clark
Mr. Russ Hoggard
Mr. Will Spargo

RICE FARMS (CONTINUED)

Texas - Bay City-Matagorda County

Panel Participants

Mr. Dillon Berglund
Mr. Coleman Franz
Mr. Paul Sliva

Mr. Barrett Franz
Mr. Joey Sliva

Texas - Eagle Lake-Colorado County

Panel Participants

Mr. Allen Anderson
Mr. Kenneth Danklefs
Mr. W.A. "Billy" Hefner, III
Mr. Patrick Pavlu

Mr. Andy Anderson
Mr. Craig Guthman
Mr. Ira Lapham
Mr. Bryan Wiese

Texas - El Campo-Wharton County

Panel Participants

Mr. Daniel Berglund
Mr. Mark Rasmussen
Mr. Glen Rod

Mr. Timothy Gertson
Mr. L.G. Raun
Mr. Tommy Turner

PEANUT FARMS

North Carolina - Conway

Facilitators

Dr. Blake Brown
Mr. Gary Bullen
Mr. Bob Sutter

Panel Participants

Mr. Clarke Fox
Mr. Wayne Harrell
Mr. Brad West

Mr. Ray Garner
Mr. Donny Lassiter
Mr. Donnie White

North Carolina - Elizabethtown

Facilitators

Dr. Blake Brown
Mr. Gary Bullen
Mr. Matthew Strickland
Mr. Bob Sutter

Panel Participants

Mr. Robert Byrd
Mr. Jart Hudson
Mr. Dan McDuffie
Mr. Dan Ward

Mr. Wade Byrd
Mr. Alex Jordan
Mr. Sean Morris
Mr. Wilbur Ward