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. 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).

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).

Data and Methods

Model

For over 30 years, AFPC has maintained a farm-level policy simulation model (FLIPSIM) developed by Richardson and Nixon (1986) for analyzing the impact of proposed policy changes on U.S. farms and ranches. AFPC currently uses a next generation simulation model—Farm Economics and Solvency Projector (FarmESP)—developed by Dr. Henry Bryant, that moves to the Python platform and includes all of the previous generation’s policy and tax capabilities with a significant upgrade in terms of crop insurance capabilities.

Data

The data to simulate farming operations in FarmESP comes primarily from AFPC’s database of representative farms. Information to describe and simulate these farms comes from panels of farmers (typically 4-6 producers per location) located in major production regions in 21 states across the United States. The farm panels are reconvened frequently to update the representative farm data. The representative farms are categorized by their primary source of receipts—for example, feedgrain, wheat, cotton and rice. The representative farm database has been used for policy analysis for over 30 years analyzing the impacts of proposed policies on the past seven farm bills. As noted above, this report focuses on AFPC’s 64 representative crop farms (Figure 2).

Figure 2: Location of AFPC Representative Crop Farms by Type.
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-
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

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

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<th>High Fertilizer Scenario 2022</th>
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<td>Nitrogen (AA)</td>
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<td>Potash and Phosphorous</td>
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### Table 4: Representative Feedgrain Farm Results.

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<th>Ending Cash Base --1,000--</th>
<th>Ending Cash Alternative --1,000--</th>
<th>Ending Cash Difference --1,000--</th>
<th>NPK Costs Base --1,000--</th>
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### Table 5: Representative Wheat Farm Results.

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<th>Ending Cash Alternative --1,000--</th>
<th>Ending Cash Difference --1,000--</th>
<th>NPK Costs Base --1,000--</th>
<th>NPK Costs Alternative --1,000--</th>
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<th>NPK Costs Difference --$/Acre--</th>
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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 6: Representative Cotton Farm Results.

<table>
<thead>
<tr>
<th>Farm</th>
<th>Planted Area --Acres--</th>
<th>Ending Cash Base --1,000--</th>
<th>Ending Cash Alternative --1,000--</th>
<th>NPK Costs Base --1,000--</th>
<th>NPK Costs Alternative --1,000--</th>
<th>NPK Costs Difference --1,000--</th>
<th>NPK Costs Difference --$/Acre--</th>
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Table 7: Representative Rice Farm Results.

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<td>-87</td>
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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.

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<th>Crop</th>
<th>Planted Area</th>
<th>Base N (Acres)</th>
<th>Base PK</th>
<th>Alternative N</th>
<th>Alternative PK</th>
<th>Expected Yield</th>
<th>Base Fertilizer Expenses</th>
<th>Alternative Fertilizer Expenses</th>
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<td>55</td>
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<td>Non-irrigated Soybeans (bu)</td>
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<td>0</td>
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<td>30</td>
<td>0.7401</td>
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<td>Long Grain Rice (lbs)</td>
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<td>84,810</td>
<td>24,134</td>
<td>7,000</td>
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<td>0.0311</td>
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<tr>
<td>Irrigated Cotton (lbs)</td>
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<td>1,100</td>
<td>0.1054</td>
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<tr>
<td>Non-irrigated Cotton (lbs)</td>
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<td>5,135</td>
<td>900</td>
<td>0.1288</td>
<td>0.1781</td>
<td>0.0493</td>
</tr>
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</table>

Table 8: LANG2500 Feedgrain Farm Results.
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.
References


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.
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*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

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.

<table>
<thead>
<tr>
<th>County</th>
<th>MOCG2300</th>
<th>MOCG4200</th>
<th>MONG2300</th>
<th>LANG2500</th>
<th>TNG2500</th>
<th>TN65000</th>
<th>NCSP2000</th>
<th>NCC2030</th>
<th>SCL2000</th>
<th>SCG3500</th>
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<td>Total Cropland</td>
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<td>4,200.00</td>
<td>2,300.00</td>
<td>2,500.00</td>
<td>2,500.00</td>
<td>5,000.00</td>
<td>2,000.00</td>
<td>2,000.00</td>
<td>2,000.00</td>
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<td>500.00</td>
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<td>1,375.00</td>
<td>700.00</td>
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<td>690.00</td>
<td>2,000.00</td>
<td>1,875.00</td>
<td>3,625.00</td>
<td>1,300.00</td>
<td>1,775.00</td>
<td>1,450.00</td>
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<td>3,929.00</td>
<td>5,395.00</td>
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<td>5,074.00</td>
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<td>Other &amp; Livestock</td>
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<td>180.00</td>
<td>225.00</td>
<td>863.00</td>
<td>2,000.00</td>
<td>1,122.00</td>
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<td>2020 Gross Receipts ($1,000)*</td>
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<td>1,855.80</td>
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<td>148.00</td>
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<td>0.00</td>
<td>0.00</td>
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<td>2020 Planted Acres**</td>
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<td>2,875.00</td>
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<td>1,600.00</td>
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<td>0.51</td>
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<td>0.25</td>
<td>0.63</td>
<td>0.20</td>
<td>0.10</td>
</tr>
<tr>
<td>Rice</td>
<td>0.50</td>
<td>0.45</td>
<td>0.30</td>
<td>0.35</td>
<td>0.51</td>
<td>0.46</td>
<td>0.25</td>
<td>0.63</td>
<td>0.20</td>
<td>0.10</td>
</tr>
<tr>
<td>Hay</td>
<td>0.50</td>
<td>0.45</td>
<td>0.30</td>
<td>0.35</td>
<td>0.51</td>
<td>0.46</td>
<td>0.25</td>
<td>0.63</td>
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<td>0.25</td>
<td>0.63</td>
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<td>0.10</td>
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<tr>
<td>Pasture</td>
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<td>0.30</td>
<td>0.35</td>
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<td>0.46</td>
<td>0.25</td>
<td>0.63</td>
<td>0.20</td>
<td>0.10</td>
</tr>
</tbody>
</table>

*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.

<table>
<thead>
<tr>
<th>County</th>
<th>TXNP3450</th>
<th>TXNP10880</th>
<th>TXPG2500</th>
<th>TXHG3000</th>
<th>TXWG1600</th>
</tr>
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<td>10,880.00</td>
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<td>150.00</td>
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<td>Assets ($1000)</td>
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<td></td>
</tr>
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<td>0.14</td>
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<td>2020 Gross Receipts ($1,000)*</td>
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<td></td>
</tr>
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<td>Total</td>
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<td>2020 Planted Acres**</td>
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</tr>
<tr>
<td>Total</td>
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<td>300.00</td>
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</table>

*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.

**WAW5500**  
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.

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<td>2,901.00</td>
<td>6,611.00</td>
<td>4,315.00</td>
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<tr>
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<td>2020</td>
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<td>7,810.00</td>
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<td>1,407.00</td>
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<td>2,000.00</td>
<td>4,032.00</td>
<td>3,233.00</td>
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<tr>
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<td>5,900.00</td>
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<tr>
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<td>2,901.00</td>
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<td>4,443.00</td>
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</tbody>
</table>

**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.

<table>
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<tr>
<th>County</th>
<th>Dawson</th>
<th>Crosby</th>
<th>Jones</th>
<th>Wharton</th>
<th>Nueces</th>
<th>Willacy</th>
<th>Mississippi</th>
<th>Fayette</th>
<th>Haywood</th>
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<td>10,000.00</td>
<td>5,500.00</td>
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<th>County</th>
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<th>Crosby</th>
<th>Jones</th>
<th>Wharton</th>
<th>Nueces</th>
<th>Willacy</th>
<th>Mississippi</th>
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*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

**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.

<table>
<thead>
<tr>
<th>County</th>
<th>ALC3500</th>
<th>GAC2500</th>
<th>NCNP1600</th>
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<tr>
<td>Total Cropland</td>
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<td>1,250.00</td>
<td>1,600.00</td>
</tr>
<tr>
<td>Acres Owned</td>
<td>350.00</td>
<td>1,250.00</td>
<td>600.00</td>
</tr>
<tr>
<td>Acres Leased</td>
<td>3,150.00</td>
<td>0.00</td>
<td>1,000.00</td>
</tr>
<tr>
<td>Assets ($1000)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6,127.00</td>
<td>10,860.00</td>
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<tr>
<td>Real Estate</td>
<td>2,808.00</td>
<td>8,416.00</td>
<td>2,572.00</td>
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<td>Machinery</td>
<td>1,840.00</td>
<td>1,499.00</td>
<td>1,260.00</td>
</tr>
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<td>Other &amp; Livestock</td>
<td>1,479.00</td>
<td>945.00</td>
<td>2.00</td>
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<tr>
<td>Debt/Asset Ratios</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
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<td>0.17</td>
<td>0.20</td>
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<tr>
<td>Intermediate</td>
<td>0.27</td>
<td>0.21</td>
<td>0.18</td>
</tr>
<tr>
<td>Long Run</td>
<td>0.18</td>
<td>0.18</td>
<td>0.16</td>
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<tr>
<td>2020 Gross Receipts ($1,000)*</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Total</td>
<td>3,235.70</td>
<td>3,528.70</td>
<td>1,339.90</td>
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<td>Corn</td>
<td>746.60</td>
<td>549.00</td>
<td>141.60</td>
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<tr>
<td>Wheat</td>
<td>462.00</td>
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<td>0.00</td>
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<tr>
<td>Soybeans</td>
<td>624.70</td>
<td>0.00</td>
<td>173.50</td>
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<td>Cotton</td>
<td>833.50</td>
<td>1,239.50</td>
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<td>Peanuts</td>
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<td>1,162.00</td>
<td>305.10</td>
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<td>Cattle</td>
<td>0.00</td>
<td>91.70</td>
<td>0.00</td>
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<tr>
<td>Other</td>
<td>568.90</td>
<td>486.50</td>
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<td>2020 Planted Acres**</td>
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<td>Total</td>
<td>4,375.00</td>
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<td>1,600.00</td>
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<tr>
<td>Corn</td>
<td>1,050.00</td>
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<td>240.00</td>
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<tr>
<td>Wheat</td>
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<tr>
<td>Soybeans</td>
<td>1,400.00</td>
<td>0.00</td>
<td>400.00</td>
</tr>
<tr>
<td>Cotton</td>
<td>1,050.00</td>
<td>1,250.00</td>
<td>640.00</td>
</tr>
<tr>
<td>Peanuts</td>
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<td>800.00</td>
<td>320.00</td>
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<tr>
<td>Pasture</td>
<td>0.00</td>
<td>250.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

*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.

<table>
<thead>
<tr>
<th>County</th>
<th>Sutter</th>
<th>Sutter Butte</th>
<th>Colusa</th>
<th>Colorado</th>
<th>Colorado</th>
<th>Matagorda</th>
<th>Wharton</th>
<th>Acadia</th>
<th>Desha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Cropland</td>
<td>1,200.00</td>
<td>3,000.00</td>
<td>800.00</td>
<td>800.00</td>
<td>1,500.00</td>
<td>3,000.00</td>
<td>1,800.00</td>
<td>2,500.00</td>
<td>2,000.00</td>
</tr>
<tr>
<td>Acres Owned</td>
<td>360.00</td>
<td>900.00</td>
<td>320.00</td>
<td>240.00</td>
<td>405.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>200.00</td>
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<tr>
<td>Acres Leased</td>
<td>840.00</td>
<td>2,100.00</td>
<td>480.00</td>
<td>560.00</td>
<td>1,095.00</td>
<td>3,000.00</td>
<td>1,800.00</td>
<td>2,500.00</td>
<td>1,800.00</td>
</tr>
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<td>Assets ($1000)</td>
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<td>5,580.00</td>
<td>4,420.00</td>
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<td>Debt/Asset Ratios</td>
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<td>0.17</td>
<td>0.20</td>
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<td>0.27</td>
<td>0.21</td>
<td>0.10</td>
<td>0.18</td>
</tr>
<tr>
<td>Real Estate</td>
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<td>1,408.00</td>
<td>107.00</td>
<td>143.00</td>
<td>98.00</td>
<td>1,533.00</td>
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<td>3,616.00</td>
<td>1,265.00</td>
<td>430.00</td>
<td>1,114.00</td>
<td>1,546.00</td>
<td>903.00</td>
<td>1,017.00</td>
<td>1,119.00</td>
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<tr>
<td>Other &amp; Livestock</td>
<td>584.00</td>
<td>628.00</td>
<td>216.00</td>
<td>0.00</td>
<td>8.00</td>
<td>234.00</td>
<td>164.00</td>
<td>252.00</td>
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<td>2020 Gross Receipts ($1,000)*</td>
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<td>6,121.20</td>
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<td>1,572.40</td>
<td>897.60</td>
<td>2,004.40</td>
<td>1,127.80</td>
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<td>1,504.20</td>
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<td>Corn</td>
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<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>571.60</td>
<td>0.00</td>
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<td>Soybeans</td>
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<td>0.00</td>
<td>0.00</td>
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<td>0.00</td>
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<td>Rice</td>
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<td>1,552.80</td>
<td>871.80</td>
<td>1,962.50</td>
<td>1,012.30</td>
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<td>41.80</td>
<td>26.50</td>
<td>133.80</td>
<td>530.90</td>
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<td>2020 Planted Acres**</td>
<td>1,200.00</td>
<td>3,000.00</td>
<td>800.00</td>
<td>800.00</td>
<td>600.00</td>
<td>1,500.00</td>
<td>600.00</td>
<td>2,500.00</td>
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<td>0.00</td>
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<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Rice</td>
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<td>800.00</td>
<td>800.00</td>
<td>600.00</td>
<td>1,500.00</td>
<td>600.00</td>
<td>1,250.00</td>
<td>1,000.00</td>
</tr>
</tbody>
</table>

*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.

<table>
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<th>County</th>
<th>ARSR3240</th>
<th>ARWR2500</th>
<th>ARHR4000</th>
<th>MSDR5000</th>
<th>MOBR4000</th>
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<td>Total Cropland</td>
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<td>5,000.00</td>
<td>4,000.00</td>
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<td>1,000.00</td>
<td>3,000.00</td>
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<tr>
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<td>2,000.00</td>
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<td>Assets ($1000)</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6,088.00</td>
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<td>3,749.00</td>
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<td>5,987.00</td>
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<td>Machinery</td>
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<td>1,517.00</td>
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<td>3,497.00</td>
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<td>Other &amp; Livestock</td>
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<td>61.00</td>
<td>97.00</td>
<td>944.00</td>
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</tr>
<tr>
<td>Total</td>
<td>0.16</td>
<td>0.14</td>
<td>0.17</td>
<td>0.18</td>
<td>0.19</td>
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<tr>
<td>Intermediate</td>
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<td>0.10</td>
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<td>0.24</td>
<td>0.22</td>
</tr>
<tr>
<td>Long Run</td>
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<td>0.13</td>
<td>0.18</td>
<td>0.17</td>
<td>0.18</td>
</tr>
<tr>
<td>2020 Gross Receipts ($1,000)*</td>
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<td></td>
</tr>
<tr>
<td>Total</td>
<td>2,785.30</td>
<td>1,939.30</td>
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<td>Wheat</td>
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<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>Soybeans</td>
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<td>599.50</td>
<td>2,082.90</td>
<td>740.20</td>
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<td>Rice</td>
<td>1,580.70</td>
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<td>2,570.50</td>
<td>1,683.90</td>
<td>1,262.20</td>
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<td>Other</td>
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<td>142.80</td>
<td>283.50</td>
<td>203.90</td>
</tr>
<tr>
<td>2020 Planted Acres**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
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<td>Corn</td>
<td>324.00</td>
<td>0.00</td>
<td>200.00</td>
<td>0.00</td>
<td>880.00</td>
</tr>
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<td>Soybeans</td>
<td>1,458.00</td>
<td>1,250.00</td>
<td>1,400.00</td>
<td>3,333.00</td>
<td>1,800.00</td>
</tr>
<tr>
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<td>1,250.00</td>
<td>2,640.00</td>
<td>1,667.00</td>
<td>1,320.00</td>
</tr>
</tbody>
</table>

*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. Kevin Carson
Mr. Gary Everhart  Mr. Andy Fix
Mr. Jason & Dan Foltz Ms. Carmen Hawk
Mr. Darrell Linville Mr. Gary Robards
Mr. Ken Simpson     Ms. Angie Steinbarger
Mr. Doug Theobald   Mr. Jeremy Weaver

Iowa
Facilitators
Mr. Jerry Chizek - County Extension Director, Webster County
Panel Participants
Mr. Doug Adams    Mr. Brad Black
Mr. Dean Black    Mr. Perry Black
Mr. A.J. Blair    Mr. Gregg Hora
Mr. Tyler Lane    Mr. Jay Lynch
Mr. Steve Peterson Mr. Doug Stanek
Mr. Jason Stanek  Mr. Brent Wells
Mr. Kent Wuebker  Mr. Loren Wuebker

Missouri - Central
Facilitators
Mr. Parman Green
Panel Participants
Mr. Joe Brockmeier Mr. Michael Brockmeier
Mr. Kevin Casner   Mr. Mark Casner
Mr. Kyle Durham    Mr. Dennis Germann
Mr. Todd Gibson    Mr. Dale Griffith
Mr. Jack Harriman  Mr. Todd Hensiek
Mr. Mike Hisle     Mr. Preston Hisle
Mr. Glenn Kaiser   Mr. Marc Kaiser
Mr. David Kipping  Mr. Robert Kipping
Mr. Craig Linneman Mr. Mike Ritchhart
Mr. James Wheeler

Missouri - Northwest
Facilitators
Mr. Peter Zimmel - FAPRI, University of Missouri
Panel Participants
Mr. Terry Ecker    Mr. Curtis Lewis
Mr. Russell Miller Mr. Matt Rosenbohm
Mr. Nick 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. Bart Beattie
Mr. Pat Luther
Mr. Clark McPheeters
Mr. Cody Peden
Mr. Dave Rowe
Mr. Dan Strauss

Mr. Rob Anderson
Mr. Greg Hueftle
Mr. Tim Maline
Mr. Scott McPheeters
Mr. Rod Reynolds
Mr. Paul Stieb

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. Jim Broten
Mr. Mike Clemens
Mr. Leland Guscette
Mr. Jason Haugen
Mr. Greg Shanenko

Mr. Eric Broten
Mr. Wade Bruns
Mr. Mark Formo
Mr. Rob Hanson
Mr. Charlie Kreidelcamp
Mr. Anthony Thilmony

Ohio

Facilitators
Mr. Ben Brown - Assistant Professor

Panel Participants
Mr. Dean Bixel
Mr. Mark Drewes
Mr. Todd Hesterman
Mr. Eric Johnson
Mr. Kevin Thierry

Mr. Scott Conrad
Mr. Matt Eggers
Mr. Tim Holbrook
Mr. Jeremy Tedrow

Ohio - Napoleon

Facilitators
Mr. Ben Brown - Assistant Professor

Panel Participants
Mr. Dean Bixel
Mr. Mark Drewes
Mr. Todd Hesterman
Mr. Eric Johnson
Mr. Kevin Thierry

Mr. Scott Conrad
Mr. Matt Eggers
Mr. Tim Holbrook
Mr. Jeremy Tedrow
FEED GRAIN FARMS (CONTINUED)

South Carolina
Facilitators
Mr. Scott Mickey
Dr. Nathan Smith
Panel Participants
Mr. Neal Baxley
Mr. Chris Cogdill
Mr. Sam DuRant
Mr. Steven Gamble
Mr. Tommy Lee
Mr. John Michael Parimuha
Ms. Vikki Brogdon
Mr. Harry DuRant
Mr. Jason Gamble
Mr. Barry Hutto
Mr. Joe McKeower

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

Texas - Northern Blackland Prairie
Facilitators
Mr. Zach Davis - County Extension Agent, Hill County
Panel Participants
Mr. Chad Kaska
Mr. Chad Radke
Mr. Todd Kimbrell, Jr.
Mr. John Sawyer

Texas - Northern High Plains
Facilitators
Mr. Marcel Fischbacher - County Extension Agent, Moore County
Panel Participants
Mr. Tommy Cartrite
Mr. Justin Garrett
Mr. Casey Kimbrell
Mr. Chandler Preston
Mr. Stan Spain
Mr. Dee Vaughan
Mr. Brent Clark
Mr. Kelly Hays
Mr. Tom Moore
Mr. Jon Reznik
Mr. Darren Stallwitz
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. Greg Chavez
Mr. Bob Meyer

Mr. Roy Carlson
Mr. Steve Hoffman
Mr. Tom Schlabs

Texas - Southern Blackland Prairie

Facilitators
Mr. Cooper Terrill - County Extension Agent, Williamson County

Panel Participants
Mr. Terry Pekar
Mr. Ken Seggern

Mr. Herbert Raesz

Texas - Southwest

Facilitators
Mr. Samantha Korzekwa - County Extension Agent, Uvalde County

Panel Participants
Mr. Jimmy Carnes
Mr. Mark Landry

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

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

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

Montana - North Central
Facilitators
Mr. Lochiel Edwards

Panel Participants
Mr. Darin Arganbright
Mr. Duane Beirwagen
Mr. Dan Works
Mr. Steve Bahnmiller
Mr. Will Roehm
WHEAT FARMS (CONTINUED)

Oregon - North Central
Facilitators
Jon Farquharson
Panel Participants
Mr. Dana Heideman  Mr. Bill Jepsen
Mr. Joe McElligott  Mr. Craig Miles
Mr. Eric Orem  Mrs. Shannon Rust
Mr. Tim and Shannon Rust

Washington
Facilitators
Mr. Aaron Esser - County Director, WSU Extension
Panel Participants
Mr. Trevor Jantz  Mr. Ron Jirava
Mr. Mike Miller  Mr. Justin Simonson
Mr. Travis Simonson  Mr. Tim Smith
Mr. Traven 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. Asa Clark
Mr. Gavin Clark  Mr. Scot Cocking
Mr. Aaron Gfeller  Mr. David Harlow
Ms. Kenda Hergert  Mr. Dean Kinzer
Ms. Heidi Kopf  Mr. Brian Largent
Mr. Gary Largent  Mr. Michael Largent
Mr. Steve Mader  Ms. Amy McKay
Mr. Clark Miller  Mr. Bruce Nelson
Mr. Chris Schultheis  Mr. David Swannack
Mr. Steve Teade  Mr. Jon Whitman
COTTON FARMS

Alabama

Panel Participants
Mr. James Blythe  Mr. Paul Clark
Mr. Jarred Darnell  Dr. Steve Ford
Mr. William Lee  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. Heath Donner
Mr. Todd Edwards  Mr. Cole Hawkins
Mr. Justin Hawkins  Mr. Kenny Jackson
Mr. David Wildy

Georgia - Southwest

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

Panel Participants
Mr. Andy Bell  Mr. Jerry Jones
Mr. Greg Mims  Mr. Willard Mims
Mr. Brad Thompson  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. Michael Gray
Mr. Willie Howell  Mr. David B. Mitchell, Sr.
Mr. Danny C. Pierce  Mr. Craig West
Mr. Bryant Worley

South Carolina

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

Panel Participants
Mr. Jimmie Griner  Mr. Dean Hutto
Mr. John McLaurin  Mr. David Tindal
Mr. Landrum Weathers
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. Chuck Dacus
Mr. Lee Graves
Mr. Rob Karcher
Mr. John King
Mr. Hassell Smith
Mr. Link Carlton
Mr. Willie German
Mr. Ed Karcher
Mr. Allen King
Mr. Kinney McRae

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

Texas - Eastern Caprock

Facilitators
Ms. Caitlin Jackson

Panel Participants
Mr. Lloyd Arthur
Mr. Mark Schoepf
Mr. Brooks Ellison
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. Cedric Popp
Mr. Darrell Schoeneberg
Mr. Duane Lutringer
Mr. Michael Popp
Mr. Mike Watz

Texas - Rio Grande Valley

Facilitators
Mr. Matthew Rodriguez - County Extension Agent

Panel Participants
Mr. Jerry Chappell
Mr. Spence Pennington
Mr. Zachary Swanberg
Mr. Joe Pennington
Mr. Ivan Salazar
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
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. Andy Gill
Mr. Joe Mencer
Mr. Jim Whitaker
Mr. Andrew Gill
Mr. Tad Keller
Mr. Matt Miles
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. Monty Bohanan
Mr. Stephen Hoskyn
Mr. Garth Jessup
Mr. Derek Bohanan
Mr. Dusty Hoskyn
Mr. David 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. Byron Holmes, Jr.
Mr. Roger Pohner
Mr. John Cooper
Mr. Bryan Moery

Arkansas - Northeast-Lawrence County

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

Panel Participants
Mr. Greg Baltz
Mr. Ricky Burris
Mr. Doug Cox
Mr. Joe Richardson
Mr. Jeremy Baltz
Mr. Ronald Cavenaugh
Mr. Bruce Manning
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. Peter Rystrom
Mr. Derek Sohnrey
Mr. Imran Khan
Mr. Josh Sheppard
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. Barrett Franz
Mr. Coleman Franz           Mr. Joey Sliva
Mr. Paul Sliva

Texas - Eagle Lake-Colorado County

Panel Participants
Mr. Allen Anderson          Mr. Andy Anderson
Mr. Kenneth Danklefs        Mr. Craig Guthman
Mr. W.A. "Billy" Hefner, III Mr. Ira Lapham
Mr. Patrick Pavlu           Mr. Bryan Wiese

Texas - El Campo-Wharton County

Panel Participants
Mr. Daniel Berglund         Mr. Timothy Gertson
Mr. Mark Rasmussen          Mr. L.G. Raun
Mr. Glen Rod                Mr. Tommy Turner
PEANUT FARMS

North Carolina - Conway

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

Panel Participants
Mr. Clarke Fox               Mr. Ray Garner
Mr. Wayne Harrell            Mr. Donny Lassiter
Mr. Brad West                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. Wade Byrd
Mr. Jart Hudson               Mr. Alex Jordan
Mr. Dan McDuffie              Mr. Sean Morris
Mr. Dan Ward                  Mr. Wilbur Ward