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L. Paul Goeringer, Dr. H.L. Goodwin, Dr. Bruce L. Dixon, and Dr. Michael Popp

Department of Agricultural Economics and Agribusiness
Dale Bumpers College of Agricultural, Food & Life Sciences
University of Arkansas
217 Agricultural Building
Fayetteville AR 72701

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Abstract

America's agricultural producers continue to age. According to the U.S. Census of Agriculture, the average age of farm operators increased from 55.3 in 2002 to 57.1 in 2007. During the same period, the Census shows a thirty percent decrease in the number of farmers under the age of 25. Young and beginning producers (YBPs) entering agriculture can be faced with high startup costs and the lack of land to own or rent. To address this potential shortage of future farmers, we propose a program for the Farm Credit System to assist YBPs by offering Farm Service Agency guaranteed loans. In this program YBPs are given concessionary interest rates in consideration for adopting conservation and recommended "best" practices. To gauge the impact of the loan program, crop budgets were developed for corn, cotton, rice, soybeans, and wheat prior to participation in the loan program and then budgets were developed to determine the impact on a YBP's profitability on these five crops from the adoption of no-till, a crop rotation, or a no-till crop rotation. Results found that a YBP's profitability per acre can be improved by participating in the loan program and by adopting either no-till, a crop rotation, or a no-till crop rotation.

I. Introduction

The average age of U.S. agricultural producers has increased from 51.7 in 1974 to 57.1 in 2007 (Census of Agriculture). In Arkansas, the average age of an agricultural producer has increased from 51.6 in 1974 to 56.5 in 2007 (Census of Agriculture). One reason for this aging of agriculture, in both the U.S. and Arkansas, is the declining number of producers under age 25 entering agriculture and the increasing number of producers over age 55 entering agriculture since the 1974 Census of Agriculture.

Barriers to entry that exist in agriculture are one reason for this decline in young and beginning producers (YBPs). Mishra, Wilson, and Williams (2009) point out that YBPs face large initial capital outlays and large operating capital budgets each year to begin and maintain an operation. YBPs are unable to attain the economies of size that older farmers capture. YBPs also face higher operating leverage (the ratio of fixed to variable cost) than older farmers as their financial leverage (debt to equity ratio) tends to be higher. Hence, they have a greater need for ensuring minimum cash flow needs to service debt each year. YBPs are looking for ways to reduce costs, increase profits, and reduce farming time to optimize survival likelihood.

This article focuses on the potential impact of an innovative pilot operating loan program (hereinafter “loan program”) that could be administrated by the three Farm Credit associations (FCBs) in Arkansas to increase the number of YBPs successfully operating in agriculture. If the program were successful, it could be adopted over a broader geographical range. YBPs will select from a menu of production and management practices designed to result in improvements in (1) air quality, (2) water quality and quantity, and (3) soil fertility. The practices must also be demonstrated to maintain or improve farm profitability for inclusion. Participating FCBs will reward YBPs adopting these good stewardship practices with concessionary loan rates and/or

fees and terms to enhance their probability for future success, increase returns, and establish them as the next generation of farmers and ranchers and as stable, reliable future lending customers.

Design and implementation of the proposed loan program was outlined in *Investing in an Agricultural Legacy* (2012). Ten practices were selected for inclusion in the loan program that met the above stated criteria: (1) conservation tillage; (2) integrated pest management; (3) buffer strips; (4) use of cover crops; (5) precision land leveling; (6) underground irrigation pipe; (7) use of crop rotations; (8) tailwater recovery systems; (9) planting appropriate seed varieties; and (10) planting and irrigating according to the standards found in the Arkansas crop production handbooks for rice, wheat, corn, soybeans, and grain sorghum. Each one of these practices improves areas of environmental concern while at the same time maintains or improves farm profitability.

II. Discussion

A. Development of Pre-enrollment Budgets

Before examining the potential impact the loan program could have on participating YBPs' profitability, we first need to determine the pre-enrollment profit levels for corn, cotton, rice, soybeans, and wheat. We employed at the *2011 Crop Enterprise Budgets for Arkansas Field Crops Planted in 2011* (hereinafter "extension budgets") developed and updated annually by University of Arkansas's Cooperative Extension Service. These extension budgets were developed to show profitability of traditional production practices used in Arkansas for the crops in the loan program. The extension budgets are used as a baseline for costs, revenues, and profit per acre for YBP's prior to enrolling into the loan program.

A pre-enrollment budget for each of the five crops was developed for three scenarios: 1) YBP owning farmland¹; 2) YBP cash renting farmland; and 3) YBP crop-share renting farmland. Rental rates per acre for irrigated cropland was obtained from the National Ag Statistic Service's 2011 average county-level rental rates for irrigated and non-irrigated cropland for Arkansas. For rice, soybean and wheat we used Arkansas County rental rates, the leading county in acreage for those crops. Chicot County was selected for cotton and corn. Although a wide-variety of crop-share rental arrangements exist in Arkansas, a 75-25 crop share arrangement (Coats, 2012) is quite common and requires the tenant to divert 25% of the crop revenue for land rent under varying cost sharing arrangements. Under this crop share arrangement a YBP would pay 75 percent of the grain drying expenses and would receive 75 percent of the crop produced. For corn, soybeans, rice, and wheat, it is common that operating costs are borne by the YBP with exception of grain drying expenses that are shared between the landlord and the YBP (Coats, 2012). For cotton, the landlord pays 25 percent of the chemical costs (such as herbicides, insecticides, growth regulators and fertilizers) with the remainder of production costs borne by the producer (Coats, 2012).

Interest rates and loan fees used for the operating loan were based on conversations with Nathan Wagner of AgHeritage Farm Credit of Central Arkansas. The interest rate used for the pre-enrollment budgets is 5.45 percent APR with a loan fee of \$250 for 2011. Interest rate and loan fees could be higher or lower based on the borrower's credit history, available collateral, loan size, how competitive the local interest rate market is, and the FCB's cost of funds.

¹ Here we define "owning farmland" to mean situations where a YBP would hold legal title to the farmland where the crop is grown or uses the land in such a way that it does not cost him rent.

Nutrient levels for each crop were modified in the extension budgets in our analysis. Many of the nutrient levels in extension budgets are based on traditional crop rotations used in Arkansas, such as a soybean-wheat-rice rotation. In pre-enrollment budgets, all nutrient levels were modified according to crop production handbooks for simple single-crop production nutrient levels. For example, 30 pounds per acre of both phosphate and potash are recommended when wheat is grown by itself. When wheat is grown in rotation with soybeans, 40 pounds per acre of phosphate and 80 pounds per acre of potash are recommended. The additional phosphate and potash can be stored in the soil as excess and reduces application costs. Other aspects of pre-enrollment budgets were left untouched.

The final aspect we changed was market price. Our initial set of pre-enrollment budgets used market price for corn, cotton, rice, soybeans, and wheat as the estimate originally made in the extension budgets. A second set of pre-enrollment budgets was created for each of the five crops and each of the three scenarios using a five-year weighted moving average market price (FWMAP). To get the FWMAP, we used the yearly average market price compiled by NASS from 2000 to 2011 (Table 1). These yearly average market prices were used to compute the FWMAP for each (Table 2)². The 2011 FWMAP was used in our second set of pre-enrollment budgets to determine loan program impact when market prices change.

B. Development of No-till and Crop Rotation Budgets

We focus on the impact of two practices: (1) no-till and (2) crop rotations. We assumed a pre-enrollment YBP would use conventional production methods found in extension budgets. Focusing on no-till and crop rotations would provide an example of the impacts implementing

² The FWMA would have been calculated as:

$$FWMA = \frac{((P_{2007} * 5) + (P_{2008} * 4) + (P_{2009} * 3) + (P_{2010} * 2) + (P_{2011} * 1))}{15}$$

this loan program can have on YBP's profitability compared to pre-enrollment conventional methods and provides possible incentive to retain these YBPs in agriculture.

No-till was chosen for comparisons with pre-enrollment budgets because production costs of no-till versus conventional tillage have been well documented in Arkansas and neighboring states. The University of Arkansas's yearly *Enterprise Budgets* at one time included no-till budgets for cotton, rice, and soybeans; recent editions have not included no-till budgets. Mississippi State University, University of Missouri, and Oklahoma State University provide budgets for no-till production of certain crops. Based on the wealth of data on production cost impacts with no-till, we assumed a YBP would consider adopting no-till to participate in the loan program.

No-till budgets were created comparing pre-enrollment budgets to previous no-till budgets developed by the University of Arkansas to remove unnecessary operations and include necessary operations for no-till production. We compared these no-till budgets to current no-till budgets developed by Mississippi State University's Department of Agricultural Economics (MSU) (MSU No-Till Budgets). In comparing pre-enrollment budgets to no-till budgets, all tillage operations not called for in a true no-till operation were removed. Changes in chemical and nutrient applications were made based on those seen in the previous University of Arkansas no-till budgets and the MSU No-Till Budgets.

No-till rice and conventional rice yields were kept the same in the no-till budgets. Research in Arkansas and Louisiana has indicated that no-till rice yields are not significantly different from conventional tillage yields (Watkins, et al. 2006). Long-term no-till studies in Arkansas have found no-till soybean yields to be slightly better than conventionally tilled soybeans (Watkins, et al., 2011). The same long-term studies have shown no-till wheat yields to

fluctuate two to ten bushels per acre higher or lower, depending on the rotation used, with no discussion of the statistical significance of this variation (Hignight, et al. 2010). No-till yields for soybeans and wheat were therefore also invariant to conventionally tilled soybeans and wheat. Based on the MSU No-Till Budgets for no-till cotton and corn, yields were not changed from conventional yields.

Table 3 shows each of the crops, irrigation methods, and seed variety options investigated in our no-till adoption with loan program participation analysis. For example, with corn we examined no-till adoption with furrow and center-pivot irrigation (Table 3). Adoption of no-till, with center-pivot irrigation, and loan program participation had the best results.

Crop rotations examined were: 1) rice-wheat-soybean (RWSB); 2) soybean-rice (SBR); 3) soybean-wheat (SBW); and 4) corn-cotton (CC). When the rotation includes wheat, wheat is traditionally double-cropped with the preceding rice or soybean crop. Modifications of the pre-enrollment budgets to include the impact of adopting crop rotations were based on information found in the *Crop Production Handbooks*. A set of budgets was then created to show the impact of no-till and crop rotation adoption combined. Table 4 shows a review of the analysis with rotations. For example, with RWSB we examined wheat; flood irrigated soybeans, and each of the rice seed varieties possible in the rotation.

The interest rate from our pre-enrollment budgets was then lowered to the interest rate based on participation in the loan program. In the pre-enrollment budgets, a 5.45 percent interest rate is used. For participating in the loan program, the participant receives a twenty-five basis point reduction in interest rate to 5.20 percent. The twenty-five basis point interest rate reduction was chosen because many Farm Credit Banks (FCBs), such as Farm Credit Services of

Western Arkansas (Western), already have YBP programs in place that give an interest rate concession of twenty-five basis points to YBPs.

For each practice analyzed, a budget for YBP owning farmland, YBP cash renting farmland, and YBP crop-share renting farmland were created. A second set of no-till and crop rotation budgets were then created using the same five-year weighted moving average for market price as used in the second set of pre-enrollment budgets. This was repeated to determine the impact of the loan program when market prices fluctuate.

D. Program Impact

1. Impact of Adopting No-Till

Adoption of no-till and participation in the loan program increases profits per acre and decreases production and interest costs for corn, cotton, rice, soybeans, and wheat, regardless of irrigation method or seed used (Table 5 and Table 6). For rented farmland, either under crop-share or cash rent arrangement, the adoption of no-till and participation in the loan program increases profits per acre and decreases production or interest costs for most crops analyzed (Table 5 and Table 6).

With a few exceptions, changes from the pre-enrollment budgets to a budget showing adoption of no-till and participating in the loan program are consistent regardless of land is owned or leased (Table 5 and Table 6). Profits per acre are smaller and production costs per acre increase with cash-rent farmland compared to owning the farmland due to additional rented expenses (Table 5). With a crop-share lease, profits, revenues, and operating expenses per acre decrease compared to an owned farmland situation because the landlord is taking a percentage of the revenue and paying a percentage of certain production expenses (Table 6).

A YBP using a crop-share leasing arrangement would increase profits per acre for all but one no-till crop scenario. A YBP adopting no-till, participating in the loan program, and growing cotton using center-pivot irrigation would experience a \$2.24 decrease in profits per acre; operating expenses increase by \$11.72 per acre, but interest costs decrease by \$0.27 per acre (Table 6). Adopting no-till requires increased chemical usage and this increase is not offset enough by the fuel and labor savings to create a savings in operating expenses and a rise in net revenue.

When adopting no-till and participating in the loan program, a YBP would want to consider equipment changes necessary to effectively adopt no-till. For example, adopting no-till would require purchasing a no-till grain drill or a no-till air seeder. A conventional grain drill could not be used in planting a crop in no-till conditions. A twenty-foot wide no-till grain drill can cost of \$51,992 to purchase and a no-till air seeder costs upwards of \$137,500 to purchase compared to a conventional drill cost of \$23,957 to purchase and a conventional air seeder costing \$105,000 to purchase (Epplin, 2007). A FCB and YBP would want to consider these equipment upgrades before adopting this practice to participate in the loan program.

2. Impact of Adoption of No-till —2011 Five -Year Weighted Moving Average Market Price

Changing market prices can impact a YBP's bottom line when adopting a practice and participating in the loan program. Substituting 2011 FWMAP results in smaller YBP losses, especially when land is rented under either crop share or cash rent agreements. Table 1 shows a period of relatively high market prices compared to previous years. Using the 2011 FWMAP instead of the projected price used in the budgets and production costs held constant, we get a different sense of loan program participation impact. Based on the 2011 FWMAP, adoption of no-till and participation in the loan program provides positive improvements to a YBP's profits

when the YBP owns farmland (Table 2). Using rented farmland with lower FWMAP price, a YBP participating in the program and adopting no-till would experience smaller losses for some crops and improved profitability for other crops (Table 7 and Table 8).

The 2011 FWMAP for corn is below the projected price of corn used in the budget. In cases where the land is rented, a YBP maybe operating on thin margins. Lowering market price of corn results in losses for both furrow irrigation and center-pivot irrigation when the farmland is rented under a crop share lease (Table 8). Adoption of no-till and participation in the loan program works to reduce a YBP's loss by a projected \$18.16 per acre with furrow irrigation (Table 8). A YBP would also see a \$0.78 per acre reduction in their interest costs (Table 8).

Using a crop-share lease on farmland producing cotton, a YBP participating in the loan program and adopting no-till will reduce the projected loss when 2011 FWMAP for cotton and cotton seed is substituted for the projected price. With furrow-irrigated cotton, a YBP participating in the loan program would reduce loss per acre by \$25.63, from a \$32.79 per acre loss to \$7.16 per acre (Table 8). Interest costs would be reduced by \$1.13 per acre; \$0.54 per acre of the interest costs savings would be associated with participation in the loan program (Table 8).

With a cash rent leasing arrangement, a YBP producing center-pivot irrigated cotton, adopting no-till, and participating in the loan program could turn a loss of \$4.07 per acre before entering the loan program to a net profit of \$14.67 per acre (Table 8). Production costs decreasing by \$18.74 per acre by entering the loan program (Table 8). Interest costs would be reduced by \$0.86 per acre from reduced production costs and interest rate (Table 8).

Changes from pre-program enrollment to adoption of no-till and participation in the loan program using 2011 FWMAP for all crops mirrors results found earlier results when a YBP

owns farmland and no-till is adopted (Table 7). Adoption of no-till along with participation in the loan program in periods of low market prices will help to increase profit levels.

Agriculture has always had periods of volatile market prices. A five-year weighted moving average helps to better represent the impact this loan program could have on YBP's profitability in periods of lower prices. Adopting practices such as no-till and a concessionary interest rate can lower a YBP's production costs and reduce loss during periods of low prices. The pilot loan program could help to ease financial pressures during tough times and work to keep YBPs in agriculture by reducing the size of a potential loss or turning a potential loss into a profit.

3. Impact of Adopting a Crop Rotation

A RWSB rotation using hybrid rice seeds and loan program participation had the best results when farmland is owned or cash rented (Table 9). A CC rotation will not be adopted by a YBP currently just producing cotton to participate in the loan program, regardless of farmland ownership or rental arrangement (Table 9 and Table 10). Cotton prices are at historically high levels; the estimated price per bushel of corn is not enough to make a CC rotation attractive enough for a YBP to consider participating in the loan program (Table 9 and Table 10). A YBP currently producing only corn could find this rotation attractive combined with loan program participation, as the rotation would produce higher returns per acre per year.

RWSB and SBR rotations would be attractive for a YBP who has historically only produced rice, regardless of rental arrangement or land ownership (Table 9 and Table 10). A YBP producing only rice would see the biggest per acre increase in profits from using a Clearfield rice variety in rotation regardless of land ownership or rental arrangement. RWSB or SBR rotations would not be attractive for a YBP who has grown only flood irrigated soybeans if

farmland is crop-share rented (Table 10). These rotations would also only be attractive for a YBP who has historically grown flood irrigated soybeans when a hybrid rice variety or a Clearfield hybrid rice variety are used in rotation (Table 9 and Table 10).

When farmland is owned or cash rented, a YBP could expect net returns to increase by \$65 per acre compared to producing only soybeans, regardless of irrigation method (Table 9). Crop-share renting farmland would not be an attractive option to consider, with each irrigation method producing net returns per acre below that of producing only soybeans (Table 10).

We have not considered all possible rotations for adoption in Arkansas. Many others possible would allow for the breakup of disease and pest patterns. Similar to adoption of no-till, adopting these rotations could require to purchasing additional equipment. A YBP had traditionally only grown corn and decided to adopt a CC rotation, would need to purchase or lease a cotton stripper and other equipment for harvest the cotton crop; this would be another lending opportunity for a FCB adopting this loan program.

4. Adoption of a Crop Rotation—2011 Five -Year Weighted Moving Average for Market Price

When crop prices are changed to the 2011 FWMAP, possible rotations that could be used by a YBP become more or less attractive based on the changes in market prices. Even with the change in prices for cotton and corn, a CC rotation does not become more attractive for a YBP to adopt for participation in the loan program. Regardless of owning or renting the farmland and irrigation method used, continuing to raise cotton only is more attractive than adopting a CC rotation (Table 11 and Table 12). The rotation would still be attractive for adoption by a YBP who has traditionally only planted corn, regardless of land ownership or rental arrangement.

The SBW rotation would be attractive to a YBP owning or cash renting farmland, regardless of irrigation method, to participate in the loan program (Table 11). In this situation, a

YBP who had historically only grown soybeans could see a \$60 per acre increase in profits per acre (Table 11). The SBW rotation would still not be considered by a YBP if the YBP has historically grown soybeans and is crop-share renting the farmland (Table 12).

For a YBP who has traditionally grown rice, adoption of a RWSB or SBR rotation with owned or cash rented farmland would only be considered when a Clearfield rice variety is used in the rotation (Table 11). Using a Clearfield rice seed variety would also produce the best results in a RWSB and SBR rotation when farmland is crop-share rented by a YBP (Table 12). A YBP traditionally producing soybeans adopting of a RWSB or SBR rotation would be considered regardless of rice seed variety when farmland ownership (Table 11). Use of a hybrid rice variety could produce an increase in net returns per acre by at least \$147 when farmland is cash rented or owned (Table 11). With a YBP crop-share renting farmland and traditionally producing only soybeans, adoption of a RWSB rotation would not be an attractive practice with loan program participation (Table 12). Adoption of a SBR rotation for participation in the loan program would only be attractive to a YBP historically producing soybeans when a hybrid rice variety or a Clearfield hybrid rice variety are used in the rotation (Table 12).

5. Impact of Adopting a No-till Crop Rotation

For a YBP who has traditionally produced only cotton, adoption of a no-till CC rotation would not be attractive, regardless of irrigation method or farmland tenancy arrangement (Table 13 and Table 14). Cost savings from adopting of no-till are not enough to make up for lost revenue from cotton production. This no-till rotation would be attractive for a YBP who has historically produced corn, regardless of irrigation method, rental arrangement or farmland ownership (Table 13 and Table 14). Using center-pivot irrigation and adopting this rotation

could produce increases in net returns of \$54.58 per acre when farmland is owned or cash rented and increase in net returns of \$38.35 per acre with crop-share farmland (Table 13 and Table 14).

Adoption of a no-till SBW rotation for loan program participation would be considered by a YBP traditionally producing only soybeans, regardless of irrigation method, farmland ownership, or rental arrangement (Table 13 and Table 14). When farmland is owned or cash rented, adoption of a no-till SBW rotation and loan program participation increases a YBP's net returns per acre from between \$82.98 when flood irrigation is used to \$93.86 when furrow irrigation is used (Table 13). With a crop-share leasing arrangement, a YBP's net returns per acre would increase from of \$0.48 with flood irrigation to \$11.36 with furrow irrigation (Table 14).

No-till RWSB rotation and no-till SBR rotation and loan program participation would only be attractive for a YBP historically producing soybeans to consider with all rice seed varieties but a Clearfield variety when farmland is owned or cash rented (Table 13). When farmland is crop-share rented, a YBP would only consider adopting a SBR rotation with a hybrid rice variety (Table 14).

Adoption of a no-till RWSB rotation and no-till SBR rotation to participate in the loan program would be attractive to a YBP historically producing rice only regardless of farmland ownership, rental arrangement, or rice variety used in the rotation (Table 13 and Table 14). With a no-till RWSB rotation, net returns per acre would increase from \$41.47 with a hybrid rice variety in the rotation to \$137.51 when a Clearfield variety is used in rotation for farmland owned or cash rented from \$39.75 per acre with a hybrid rice variety to \$115.98 per acre with a Clearfield rice variety for crop-share rented farmland (Table 13 and Table 14). The per acre net returns would increase in a no-till SBR rotation from \$37.97 with a hybrid rice variety to

\$134.00 with a Clearfield rice variety when farmland is owned or cash rented. Per acre returns would range from \$77.49 with a hybrid rice variety to \$153.73 with a Clearfield rice variety (Table 13 and Table 14).

6. Impact of Adopting No-till and a Crop Rotation—2011 Five -Year Weighted Moving Average for Market Price

Adopting a no-till CC rotation and participating in the loan with use of 2011 FWMAP produces different results compared to the other CC rotations previously discussed. A YBP considering participating in the loan program by adopting a no-till CC rotation actually experiences per acre net return increases compared to producing only furrow-irrigated cotton when farmland is owned or cash rented (Table 15). Adoption of this no-till rotation while using center-pivot irrigation would still not produce net return levels above those producing only center-pivot irrigated cotton, regardless of landownership or rental method (Table 15 and Table 16).

When a FWMAP is used, a YBP historically producing soybeans would find adoption of either a no-till SBW, SBR, or RWSB rotations to be attractive for participation in the loan program when farmland is owned or cash rented, regardless of rice seed variety or irrigation method used (Table 15). With a no-till SBW, per acre net return increases would range from \$78.03 for flood irrigation to \$88.91 for furrow irrigation (Table 15). Per acre net return increases would range from \$66.86 for Clearfield rice to \$165.60 for a hybrid rice variety in a no-till SBR rotation and range from \$67.97 per acre for a Clearfield rice variety to \$166.63 per acre for a hybrid rice variety for a no-till RWSB rotation (Table 15). Net return increases per acre could range from \$0.64 with a conventional rice variety and \$43.24 with a hybrid rice variety when a YBP is crop-share renting (Table 15). With crop-share leasing, a YBP

historically producing soybeans would not consider adopting the SBW rotation and only consider adopting a no-till RWSB rotation when a hybrid rice variety is used (Table 16).

A YBP historically producing only rice would consider adopting either a no-till RWSB rotation or a no-till SBR rotation when a Clearfield variety is used and farmland is owned or cash rented (Table 15). When farmland is crop-share rented, a YBP historically producing rice would consider adopting a no-till SBR rotation regardless of variety used with net returns per acre ranging from \$33.14 with a conventional variety to \$173.74 per acre for Clearfield variety (Table 16). A YBP crop-share renting farmland and considering adopting a RWSB rotation for participation in the loan program would consider all rice seed varieties except conventional (Table 16).

E. Implications and Limitations of Research

Reviewing two production practices (no-till and crop rotations in comparison to conventional tillage and mono-cropping) with loan program participation demonstrates that a YBP could, in most cases, could earn higher profits per acre regardless of owning or renting the farmland. In periods of low crop prices, production costs held constant, adopting one practice or a combination of the two practices reviewed herein with loan program participation can reduce the loss experienced. These results show that consideration for adopting the loan program has merit.

Although the loan program's production and interest cost savings may not create large increases in a YBP's per acre profitability they could be substantial for an entire operation. A YBP producing 500 crop-share rented acres of corn using center-pivot irrigation, adopting no-till, and participating in the loan program could experience a \$9,665 total increase compared to pre-enrollment. However, a YBP producing 400 cash-rented acres of conventional rice could

experience potential increases of \$28,208 with adoption of no-till and loan program participation compared to pre-enrollment. For a YBP starting a new operation or a new family, profit increases from loan program participation could be what is needed to remain in agriculture.

To truly determine loan program impact of the on a YBP's per acre profitability, we would need to evaluate the other eight practices not considered in this manuscript. We cannot expect a YBP considering participating in the loan program to adopt one of the other eight practices without truly understanding the practice's impact on their operation. Once this analysis is complete, we would be able to fully present to a potential participant each practice and its impact on their profitability so they can make a truly informed decision about which practices to adopt.

Our current analysis has focused only on the production cost data for the 2011 extension budgets using 2011 assumed crop prices and, alternatively, five-year weighted moving average crop prices. Future analysis would need to assess the impact from adopting these two practices or a combination of the two when production costs change. To gain a better understanding of the long-term impacts on YBP profitability, we would want to determine the loan program impact under various production cost situations and extend the analysis over multiple years, perhaps stochastically, to measure the impact of unanticipated events.

Further investigation is needed to measure the impact of additional equipment purchases on a YBP's bottom-line. Adopting no-till and precision land leveling can require additional capital to purchase no-till drills or to pay for precision land leveling. This additional analysis in multi-year planning could determine the impact of additional equipment costs on a YBP's bottom line and part of a dynamic analysis mentioned above. Research would also benefit a

FCB considering adopting this loan program to gain a better understanding of lending opportunities that could arise because of a YBP adopting a program practice.

Future research is needed to identify potential impacts on participating FCBs profitability. This analysis would need to focus on long-term impacts the FCB could experience from adopting the loan program, such as gaining long-term borrowers. By granting concessionary interest rates or waiving fees, FCBs would experience reduced returns on those loans.

III. Conclusion

The foregoing analysis indicates the YPB loan program has potential to help reduce some production and capital costs that agricultural producers face each year through adopting cost-saving management practices and concessionary interest rates. Although this paper has limited itself to two of ten proposed production practices, future work would allow us to include the necessary analysis and develop budgets for all ten practices included in the initial loan program. Moreover, use of an optimizing algorithm or simulation model would help the YBP choose the best subset of proposed practices.

Our analysis shows that the loan program could result in increased profitability for participating YBPs. This loan program could improve profitability of the YBPs selected for the pilot program and transform them into more profitable producers. Although no single program will be the cure-all to the dwindling numbers of YBPs in the U.S. and Arkansas, the pilot loan program could help to entice and keep some in agriculture and operating profitable, successful operations into the future.

This article has only brushed the surface of this important topic by providing an initial analysis to determine if the loan program would impact a participating YBP's profitability.

Future research is needed to truly determine the short-term and long-term impacts on a YBP's profitability and to determine if costs incurred by a FCB from granting a concessionary rate to a YBP can result in developing a long-term lending relationship beneficial to a FCB.

IV. Tables

Table 1: Average Annual Crop Prices From 2007 to 2011 For Corn, Cotton, Rice, Soybeans, and Wheat. Source USDA-NASS

	<u>2011</u>	<u>2010</u>	<u>2009</u>	<u>2008</u>	<u>2007</u>
Corn \$/bu	\$ 6.20	\$ 5.18	\$ 3.55	\$ 4.06	\$ 4.20
Cotton \$/lb	\$ 0.97	\$ 0.85	\$ 0.65	\$ 0.49	\$ 0.61
Cottonseed \$/ton	\$ 260.00	\$ 161.00	\$ 158.00	\$ 223.00	\$ 162.00
Rice \$/bu	\$ 6.39	\$ 5.72	\$ 6.48	\$ 7.56	\$ 5.76
Soybeans \$/bu	\$ 11.70	\$ 11.30	\$ 9.59	\$ 9.97	\$ 10.10
Wheat \$/bu	\$ 6.85	\$ 5.37	\$ 4.71	\$ 6.57	\$ 6.13

Table 2: Calculated 2011 Five-Year Weighted Moving Average Annual Market Price For Corn, Cotton, Rice, Soybeans, and Wheat.

	<u>2011</u>
Corn \$/bu	\$ 4.30
Cotton \$/lb	\$ 0.64
Cottonseed \$/ton	\$ 183.87
Rice \$/bu	\$ 6.42
Soybeans \$/bu	\$ 10.23
Wheat \$/bu	\$ 5.91

Table 3: Overview of Crops and Irrigation Systems Reviewed in No-Till Analysis

	<u>Corn</u>	<u>Cotton</u>	<u>Rice-Conventional</u>	<u>Rice-Clearfield</u>	<u>Rice-Hybrid</u>	<u>Rice-Clearfield Hybrid</u>	<u>Soybeans</u>	<u>Wheat</u>
<u>Rainfed</u>								
Conventional	–	–	–	–	–	–	–	✓
No-Till	–	–	–	–	–	–	–	✓
<u>Irrigation System</u>								
<u>Furrow:</u>								
Conventional	✓	✓	–	–	–	–	✓	–
No-Till	✓	✓	–	–	–	–	✓	–
<u>Center-Pivot:</u>								
Conventional	✓	✓	–	–	–	–	✓	–
No-Till	✓	✓	–	–	–	–	✓	–
<u>Flood:</u>								
Conventional	–	–	✓	✓	✓	✓	✓	–
No-Till	–	–	✘ ☒	✓	✓	✓	✓	–

- ✓ = Analysis complete
- ☒ = Best results for that crop
- ✘ = Best Overall Results For All Crops
- = No Analysis

Table 5: Overview of Crop Rotations, Irrigation Methods, and Rice Seed Varieties Analyzed To Evaluate Potential Impact of YBP Loan Program

	<u>RWSB</u>	<u>SBR</u>	<u>SBW</u>	<u>CC</u>
<u>Irrigation System</u>				
<u>Furrow:</u>				
Rotation	-	-	✓	✓
No-Till Rotation	-	-	☒	✓
<u>Center-Pivot:</u>				
Rotation	-	-	☒	✓
No-Till Rotation	-	-	✓	✓
<u>Flood:</u>				
Rotation	-	-	✓	-
No-Till Rotation	-	-	✓	-
<u>Rice Seed Variety:</u>				
<u>Conventional</u>				
Rotation	✓	✓	-	-
No-Till Rotation	✓	✓	-	-
<u>Clearfield</u>				
Rotation	☒	☒	-	-
No-Till Rotation	☒	☒	-	-
<u>Hybrid</u>				
Rotation	✓	✓	-	-
No-Till Rotation	✓	✓	-	-
<u>Clearfield Hybrid</u>				
Rotation	✓	✓	-	-
No-Till Rotation	✓	✓	-	-

- ✓ = Analysis complete
- ☒ = Best results for that rotation
- = No Analysis

Table 5: Comparison of Conventional Practices to Loan Program Participation and No-Till Adoption for Five Major Crops in Arkansas Using 2011 Enterprise Budgets Across Ownership and Cash Rent Assuming Constant Revenues. Numbers Represent \$ per Acre.

Crop		Corn	Corn	Cotton	Cotton	Rice	Rice	Rice	Rice	Soybeans	Soybeans	Soybeans	Wheat	
Own or Cash Rent	Irrigation Type	Furrow	CP	Furrow	CP	Flood	Flood	Flood	Flood	Furrow	CP	Flood	Rainfed	
	Production Methods	Seed Variety	RR	RR	RR-Flex	RR-Flex	Conv.	Clearfield	Hybrid	Clearfield	RR	RR	RR	Conv.
		Tillage	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.
	Financial Performance	Revenue	\$ 910.00	\$ 910.00	\$ 1,119.60	\$ 1,119.60	\$ 957.10	\$ 900.80	\$ 1,069.70	\$ 1,069.70	\$ 687.00	\$ 687.00	\$ 687.00	\$ 330.00
		Operating Expenses ^a	\$ 520.40	\$ 559.37	\$ 621.60	\$ 652.98	\$ 574.77	\$ 603.80	\$ 590.63	\$ 639.10	\$ 280.13	\$ 310.28	\$ 280.09	\$ 243.16
		Operating Interest	\$ 12.66	\$ 13.72	\$ 13.19	\$ 14.05	\$ 13.53	\$ 14.48	\$ 13.65	\$ 14.97	\$ 7.59	\$ 8.41	\$ 7.59	\$ 6.97
		Ownership Charges ^b	\$ 69.87	\$ 112.35	\$ 123.36	\$ 156.93	\$ 104.03	\$ 104.03	\$ 104.03	\$ 104.03	\$ 57.80	\$ 91.36	\$ 53.81	\$ 39.30
		NRAT ^c	\$ 307.07	\$ 224.56	\$ 361.45	\$ 295.65	\$ 264.77	\$ 178.48	\$ 361.39	\$ 311.60	\$ 341.48	\$ 276.95	\$ 345.51	\$ 40.57
		Cash Rent (\$/yr) ^d	\$ 116.00	\$ 116.00	\$ 116.00	\$ 116.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 50.00
	Change	Tillage	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till
	Modified Financial Performance	Modified Operating Expenses	\$ 511.82	\$ 550.10	\$ 612.61	\$ 644.31	\$ 547.34	\$ 594.44	\$ 597.22	\$ 636.89	\$ 267.39	\$ 299.10	\$ 272.71	\$ 241.66
		Modified Operating Interest	\$ 11.88	\$ 12.87	\$ 12.37	\$ 13.19	\$ 12.23	\$ 13.60	\$ 13.22	\$ 14.25	\$ 6.93	\$ 7.75	\$ 7.07	\$ 6.77
		Modified Ownership Charges	\$ 61.08	\$ 103.14	\$ 112.55	\$ 147.71	\$ 62.24	\$ 89.27	\$ 82.02	\$ 82.02	\$ 44.02	\$ 79.22	\$ 45.41	\$ 33.50
		Modified Ownership Charges	\$ 325.23	\$ 243.89	\$ 382.07	\$ 314.39	\$ 335.29	\$ 203.49	\$ 377.24	\$ 336.54	\$ 368.66	\$ 300.93	\$ 361.81	\$ 43.29
	Changes in Interest Costs ^e	\$ (0.78)	\$ (0.85)	\$ (0.83)	\$ (0.86)	\$ (1.31)	\$ (0.88)	\$ (0.43)	\$ (0.72)	\$ (0.66)	\$ (0.66)	\$ (0.52)	\$ (0.20)	
	Change in NRAT	\$ 18.16	\$ 19.33	\$ 20.62	\$ 18.74	\$ 70.52	\$ 25.00	\$ 15.85	\$ 24.94	\$ 27.18	\$ 23.98	\$ 16.30	\$ 2.72	
	Change in Ownership Charges ^f	\$ (8.79)	\$ (9.21)	\$ (10.81)	\$ (9.22)	\$ (41.79)	\$ (14.76)	\$ (22.01)	\$ (22.01)	\$ (13.78)	\$ (12.14)	\$ (8.40)	\$ (5.80)	
	% Increase/Decrease in NRAT	5.91%	8.61%	5.70%	6.34%	26.64%	14.01%	4.39%	8.00%	7.96%	8.66%	4.72%	6.71%	

Notes:

^a Includes seed, fertilizer, chemicals, custom work, repair, maintenance, fuel, and irrigation supplies

^b Annualized ownership charges includes tax, insurance, housing, as well as capital recovery on equipment

^c Net returns above total specified expenses may be interpreted as returns to owner labor, land and capital employed. Subtracting cash rent would remove returns to land

^d \$100/acre and \$50/acre rental rate represents the 2011 average rental rate in Arkansas County and the \$116/acre rental rate represents the 2011 per acre rental rate in Chicot County

^e Operation's interest savings due to loan program participation

^f Change in equipment ownership charges per acre may be multiplied by 5.5835 to arrive at change in loan volume per acre at 6% capital recovery rate assuming a 7 year average equipment loan and applies across ownership, cash rental or crop share arrangements

Table 6: Comparison of Conventional Practices to Loan Program Participation and No-Till Adoption for Five Major Crops in Arkansas Using 2011 Enterprise Budgets Across a 75/25 Crop-Share Arrangement Assuming Constant Revenues. Numbers Represent \$ per Acre.

Crop		Corn	Corn	Cotton	Cotton	Rice	Rice	Rice	Rice	Soybeans	Soybeans	Soybeans	Wheat	
	Seed Variety	RR	RR	RR-Flex	RR-Flex	Conv.	Clearfield	Hybrid	Clearfield	RR	RR	RR	Conv.	
	Tillage	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	
	Irrigation Type	Furrow	CP	Furrow	CP	Flood	Flood	Flood	Flood	Furrow	CP	Flood	Rainfed	
Crop Share Rent	Crop Share ^a	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	
	Cost-Share ^b	Drying (25/75)	Drying (25/75)	Chemical (25/75)	Chemical (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	None (25/75)	
	Tenant Financial Performance	Revenue	\$ 682.50	\$ 682.50	\$ 839.70	\$ 839.70	\$ 717.83	\$ 675.60	\$ 802.28	\$ 802.28	\$ 515.25	\$ 515.25	\$ 515.25	\$ 247.50
		Operating Expenses	\$ 512.09	\$ 551.06	\$ 577.09	\$ 605.05	\$ 589.89	\$ 589.80	\$ 574.00	\$ 622.47	\$ 280.13	\$ 310.28	\$ 280.09	\$ 244.16
		Operating Interest	\$ 12.66	\$ 13.72	\$ 10.98	\$ 12.74	\$ 13.53	\$ 14.48	\$ 13.65	\$ 14.97	\$ 7.59	\$ 8.41	\$ 7.59	\$ 6.97
		Ownership Charges	\$ 69.87	\$ 112.35	\$ 123.36	\$ 156.93	\$ 104.03	\$ 104.03	\$ 104.03	\$ 104.03	\$ 57.80	\$ 91.36	\$ 53.81	\$ 39.30
		NRAT	\$ 87.88	\$ 5.37	\$ 128.27	\$ 64.98	\$ 40.37	\$ (32.72)	\$ 110.59	\$ 60.80	\$ 169.73	\$ 105.20	\$ 173.76	\$ (41.93)
	Change	Tillage	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till
	Tenant Modified Financial Performance	Modified Operating Expenses	\$ 503.50	\$ 541.79	\$ 568.08	\$ 616.77	\$ 532.47	\$ 586.97	\$ 580.59	\$ 620.26	\$ 267.39	\$ 299.10	\$ 272.71	\$ 246.44
		Modified Operating Interest	\$ 11.88	\$ 12.87	\$ 11.65	\$ 12.48	\$ 12.23	\$ 13.60	\$ 13.22	\$ 14.25	\$ 6.93	\$ 7.75	\$ 7.07	\$ 6.77
	Modified Ownership Charges	\$ 61.08	\$ 103.14	\$ 112.55	\$ 147.71	\$ 62.24	\$ 89.27	\$ 82.02	\$ 82.02	\$ 44.02	\$ 79.22	\$ 45.41	\$ 33.50	
	Modified NRAT	\$ 106.04	\$ 24.70	\$ 130.42	\$ 62.74	\$ 110.89	\$ (7.71)	\$ 126.44	\$ 85.74	\$ 196.91	\$ 129.18	\$ 190.06	\$ (39.21)	
	Changes in Interest Costs	\$ (0.78)	\$ (0.85)	\$ 0.67	\$ (0.27)	\$ (1.31)	\$ (0.88)	\$ (0.43)	\$ (0.72)	\$ (0.66)	\$ (0.66)	\$ (0.52)	\$ (0.20)	
	Change in NRAT	\$ 18.16	\$ 19.33	\$ 2.15	\$ (2.24)	\$ 70.52	\$ 25.00	\$ 15.85	\$ 24.94	\$ 27.18	\$ 23.98	\$ 16.30	\$ 2.72	
	Change in Ownership Charges	\$ (8.79)	\$ (9.21)	\$ (10.81)	\$ (9.22)	\$ (41.79)	\$ (14.76)	\$ (22.01)	\$ (22.01)	\$ (13.78)	\$ (12.14)	\$ (8.40)	\$ (5.80)	
	% Increase/Decrease in NRAT	20.66%	360.14%	1.68%	-3.45%	174.71%	76.42%	14.33%	41.02%	16.01%	22.79%	9.38%	6.49%	

Notes:

^a Same production method as baseline under ownership and cash rent but different returns to land charged via crop/cost share arrangement

^b All costs born by the tenant except as outlined

Table 7: Comparison of Conventional Practices to Loan Program Participation and No-Till Adoption for Five Major Crops in Arkansas Using 2011 Enterprise Budgets Across Ownership and Cash Rent Assuming Constant Revenues. Numbers Represent \$ per Acre and Using a Five-Year Weighted Moving Average for Market Price.

Crop		Corn	Corn	Cotton	Cotton	Rice	Rice	Rice	Rice	Soybeans	Soybeans	Soybeans	Wheat
	Irrigation Type	Furrow	CP	Furrow	CP	Flood	Flood	Flood	Flood	Furrow	CP	Flood	Rainfed
Production Methods	Seed Variety	RR	RR	RR-Flex	RR-Flex	Conv.	Clearfield	Hybrid	Hybrid	RR	RR	RR	Conv.
	Tillage	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.
Financial Performance	Revenue	\$ 751.98	\$ 751.98	\$ 935.88	\$ 935.88	\$ 1,091.57	\$ 1,027.36	\$ 1,219.99	\$ 1,219.99	\$ 613.80	\$ 613.80	\$ 613.80	\$ 325.05
	Operating Expenses ^a	\$ 520.40	\$ 559.37	\$ 621.60	\$ 652.98	\$ 574.77	\$ 603.80	\$ 479.76	\$ 639.10	\$ 280.13	\$ 310.28	\$ 280.09	\$ 243.16
	Operating Interest	\$ 12.66	\$ 13.72	\$ 13.19	\$ 14.05	\$ 12.69	\$ 14.48	\$ 110.87	\$ 14.97	\$ 7.59	\$ 8.41	\$ 7.59	\$ 6.97
	Ownership Charges ^b	\$ 69.87	\$ 112.35	\$ 123.36	\$ 156.93	\$ 104.03	\$ 104.03	\$ 104.03	\$ 104.03	\$ 57.80	\$ 91.36	\$ 53.81	\$ 39.30
	NRAT ^c	\$ 149.04	\$ 66.53	\$ 177.73	\$ 111.93	\$ 400.08	\$ 305.04	\$ 511.68	\$ 461.89	\$ 268.28	\$ 203.75	\$ 272.31	\$ 35.62
	Cash Rent (\$/yr) ^d	\$ 116.00	\$ 116.00	\$ 116.00	\$ 116.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 50.00
Change	Tillage	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till
Modified Financial Performance	Modified Operating Expenses	\$ 511.82	\$ 550.10	\$ 624.98	\$ 644.31	\$ 547.34	\$ 594.44	\$ 597.22	\$ 636.89	\$ 267.39	\$ 299.10	\$ 272.71	\$ 246.44
	Modified Operating Interest	\$ 11.88	\$ 12.87	\$ 12.37	\$ 13.19	\$ 12.23	\$ 13.60	\$ 13.22	\$ 14.25	\$ 6.93	\$ 7.75	\$ 7.07	\$ 6.77
	Modified Ownership Charges	\$ 61.08	\$ 103.14	\$ 112.55	\$ 147.71	\$ 62.24	\$ 89.27	\$ 82.02	\$ 82.02	\$ 44.02	\$ 79.22	\$ 45.41	\$ 33.50
	Modified Ownership Charges	\$ 167.20	\$ 85.86	\$ 198.35	\$ 130.67	\$ 469.76	\$ 330.05	\$ 527.53	\$ 486.83	\$ 295.46	\$ 227.73	\$ 288.61	\$ 38.34
	Changes in Interest Costs ^e	\$ (0.78)	\$ (0.85)	\$ (0.83)	\$ (0.86)	\$ (0.46)	\$ (0.88)	\$ (97.65)	\$ (0.72)	\$ (0.66)	\$ (0.66)	\$ (0.52)	\$ (0.20)
	Change in NRAT	\$ 18.16	\$ 19.33	\$ 20.62	\$ 18.74	\$ 69.68	\$ 25.00	\$ 15.85	\$ 24.94	\$ 27.18	\$ 23.98	\$ 16.30	\$ 2.72
	Change in Ownership Charges ^f	\$ (8.79)	\$ (9.21)	\$ (10.81)	\$ (9.22)	\$ (41.79)	\$ (14.76)	\$ (22.01)	\$ (22.01)	\$ (13.78)	\$ (12.14)	\$ (8.40)	\$ (5.80)
	% Increase/Decrease in NRAT	12.18%	29.06%	11.60%	16.74%	17.42%	8.20%	3.10%	5.40%	10.13%	11.77%	5.99%	7.64%

Notes:

^a Includes seed, fertilizer, chemicals, custom work, repair, maintenance, fuel, and irrigation supplies

^b Annualized ownership charges includes tax, insurance, housing, as well as capital recovery on equipment

^c Net returns above total specified expenses may be interpreted as returns to owner labor, land and capital employed. Subtracting cash rent would remove returns to land

^d \$100/acre and \$50/acre rental rate represents the 2011 average rental rate in Arkansas County and the \$116/acre rental rate represents the 2011 per acre rental rate in Chicot County

^e Operation's interest savings due to loan program participation

^f Change in equipment ownership charges per acre may be multiplied by 5.5835 to arrive at change in loan volume per acre at 6% capital recovery rate assuming a 7 year average equipment loan and applies across ownership, cash rental or crop share arrangements

Table 8: Comparison of Conventional Practices to Loan Program Participation and No-Till Adoption for Five Major Crops in Arkansas Using 2011 Enterprise Budgets Across a 75/25 Crop-Share Arrangement Assuming Constant Revenues and Using a Five-Year Weighted Moving Average for Market Price. Numbers Represent \$ per Acre.

Crop		Corn	Corn	Cotton	Cotton	Rice	Rice	Rice	Rice	Soybeans	Soybeans	Soybeans	Wheat	
Crop Share Rent	Irrigation Type	Furrow	CP	Furrow	CP	Flood	Flood	Flood	Flood	Furrow	CP	Flood	Rainfed	
	Seed Variety	RR	RR	RR-Flex	RR-Flex	Conv.	Clearfield	Hybrid	Clearfield	RR	RR	RR	Conv.	
	Tillage	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	
	Revenue (L/T)	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	
	Cost-Share ^b	Drying (25/75)	Drying (25/75)	Chemical (25/75)	Chemical (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	None (25/75)	
	Tenant Financial Performance	Revenue	\$ 563.98	\$ 563.98	\$ 839.70	\$ 839.70	\$ 717.83	\$ 675.60	\$ 802.28	\$ 802.28	\$ 515.25	\$ 515.25	\$ 515.25	\$ 247.50
		Operating Expenses	\$ 512.09	\$ 551.06	\$ 577.09	\$ 605.05	\$ 559.89	\$ 589.80	\$ 574.00	\$ 622.47	\$ 280.13	\$ 310.28	\$ 280.09	\$ 243.16
		Operating Interest	\$ 12.66	\$ 13.72	\$ 10.98	\$ 12.74	\$ 13.53	\$ 14.48	\$ 13.65	\$ 14.97	\$ 7.59	\$ 8.41	\$ 7.59	\$ 6.97
		Ownership Charges	\$ 69.87	\$ 112.35	\$ 123.36	\$ 156.93	\$ 104.03	\$ 104.03	\$ 104.03	\$ 104.03	\$ 57.80	\$ 91.36	\$ 53.81	\$ 39.30
		NRAT	\$ (30.64)	\$ (113.15)	\$ 128.27	\$ 64.98	\$ 141.22	\$ (32.72)	\$ 110.59	\$ 60.80	\$ 169.73	\$ 105.20	\$ 173.76	\$ (41.93)
	Change	Tillage	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till
	Tenant Modified Financial Performance	Modified Operating Expenses	\$ 503.50	\$ 541.79	\$ 596.73	\$ 616.77	\$ 532.47	\$ 580.44	\$ 580.59	\$ 620.26	\$ 267.39	\$ 299.10	\$ 272.71	\$ 246.44
		Modified Operating Interest	\$ 11.88	\$ 12.87	\$ 11.65	\$ 12.48	\$ 12.23	\$ 13.60	\$ 13.22	\$ 14.25	\$ 6.93	\$ 7.75	\$ 7.07	\$ 6.77
		Modified Ownership Charges	\$ 61.08	\$ 103.14	\$ 112.55	\$ 147.71	\$ 62.24	\$ 89.27	\$ 82.02	\$ 82.02	\$ 44.02	\$ 79.22	\$ 45.41	\$ 33.50
	Modified NRAT	\$ (12.48)	\$ (93.82)	\$ 130.42	\$ 62.74	\$ 211.75	\$ (7.71)	\$ 126.44	\$ 85.74	\$ 196.91	\$ 129.18	\$ 190.06	\$ (39.21)	
	Changes in Interest Costs	\$ (0.78)	\$ (0.85)	\$ 0.67	\$ (0.27)	\$ (1.31)	\$ (0.88)	\$ (0.43)	\$ (0.72)	\$ (0.66)	\$ (0.66)	\$ (0.52)	\$ (0.20)	
	Change in NRAT	\$ 18.16	\$ 19.33	\$ 2.15	\$ (2.24)	\$ 70.52	\$ 25.00	\$ 15.85	\$ 24.94	\$ 27.18	\$ 23.98	\$ 16.30	\$ 2.72	
	Change in Ownership Charges	\$ (8.79)	\$ (9.21)	\$ (10.81)	\$ (9.22)	\$ (41.79)	\$ (14.76)	\$ (22.01)	\$ (22.01)	\$ (13.78)	\$ (12.14)	\$ (8.40)	\$ (5.80)	
	% Increase/Decrease in NRAT	59.27%	17.09%	1.68%	-3.45%	49.94%	76.42%	14.33%	41.02%	16.01%	22.79%	9.38%	6.49%	

Notes:

^a Same production method as baseline under ownership and cash rent but different returns to land charged via crop/cost share arrangement

^b All costs born by the tenant except as outlined

Table 9: Comparison of Crop Rotations Adoptions to Loan Program Participation in Arkansas Using 2011 Enterprise Budgets Across Ownership and Cash Rent Assuming Constant Revenues. Numbers Represent \$ per Acre

Rotation		RWSB	RWSB	RWSB	RWSB	SBR	SBR	SBR	SBR	SBW	SBW	SBW	CC
Production Methods	Irrigation Type	Flood	Flood	Flood	Flood Clearfield	Flood	Flood	Flood	Flood Clearfield	Furrow	CP	Flood	Furrow
	Seed Variety	Conv.	Clearfield	Hybrid	Hybrid	Conv.	Clearfield	Hybrid	Hybrid	RR	RR	RR	RR/RR-Flex
	Tillage	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.
	Length of Rotation (yrs)	3	3	3	3	2	2	2	2	1	1	1	2
Financial Performance (Avg/yr)	Revenue	\$ 987.05	\$ 958.90	\$ 1,043.35	\$ 1,043.35	\$ 822.05	\$ 793.90	\$ 878.35	\$ 878.35	\$ 1,017.00	\$ 1,017.00	\$ 1,017.00	\$ 1,014.80
	Operating Expenses ^a	\$ 360.15	\$ 369.83	\$ 354.03	\$ 381.59	\$ 398.35	\$ 381.19	\$ 406.28	\$ 431.04	\$ 500.49	\$ 530.64	\$ 500.45	\$ 571.00
	Operating Interest	\$ 13.81	\$ 14.28	\$ 13.87	\$ 14.53	\$ 9.77	\$ 10.24	\$ 9.83	\$ 10.50	\$ 13.94	\$ 14.77	\$ 13.94	\$ 12.93
	Ownership Charges ^b	\$ 65.71	\$ 65.71	\$ 35.30	\$ 65.71	\$ 78.92	\$ 78.92	\$ 78.92	\$ 78.92	\$ 97.10	\$ 130.66	\$ 93.11	\$ 96.62
	NRAT ^c	\$ 334.45	\$ 291.30	\$ 382.76	\$ 357.86	\$ 335.01	\$ 291.87	\$ 383.32	\$ 357.89	\$ 405.47	\$ 340.94	\$ 409.49	\$ 334.26
	Cash Rent (\$/yr) ^d	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 116.00
Change	Loan Program	Participation	Participation	Participation	Participation	Participation	Participation	Participation	Participation	Participation	Participation	Participation	Participation
Modified Financial Performance (Avg/yr)	Modified Operating Expenses	\$ 360.15	\$ 369.83	\$ 365.44	\$ 381.59	\$ 398.35	\$ 412.87	\$ 406.28	\$ 431.04	\$ 500.49	\$ 530.64	\$ 500.45	\$ 571.00
	Modified Operating Interest	\$ 13.21	\$ 13.67	\$ 13.27	\$ 13.90	\$ 9.34	\$ 9.80	\$ 9.40	\$ 10.04	\$ 13.35	\$ 14.14	\$ 13.35	\$ 12.35
	Modified Ownership Charges	\$ 69.75	\$ 69.75	\$ 69.75	\$ 69.75	\$ 78.92	\$ 78.92	\$ 78.92	\$ 78.92	\$ 97.10	\$ 130.66	\$ 93.11	\$ 96.62
	Modified Ownership Charges	\$ 335.04	\$ 291.92	\$ 383.36	\$ 358.49	\$ 335.44	\$ 292.32	\$ 383.75	\$ 358.35	\$ 406.06	\$ 341.57	\$ 410.09	\$ 334.83
	Changes in Interest Costs ^e	\$ (0.60)	\$ (0.62)	\$ (0.60)	\$ (0.63)	\$ (0.43)	\$ (0.45)	\$ (0.43)	\$ (0.46)	\$ (0.59)	\$ (0.63)	\$ (0.59)	\$ (0.58)
	Change in NRAT	\$ 0.60	\$ 0.62	\$ 0.60	\$ 0.63	\$ 0.43	\$ 0.45	\$ 0.43	\$ 0.46	\$ 0.59	\$ 0.63	\$ 0.59	\$ 0.58
	Change in Ownership Charges ^f	\$ 4.03	\$ 4.03	\$ 34.44	\$ 4.03	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	% Increase/Decrease in NRAT	0.18%	0.21%	0.16%	0.18%	0.13%	0.15%	0.11%	0.13%	0.15%	0.18%	0.14%	0.17%
Changes From Only Producing:	Corn												\$ 27.77
	Cotton												\$ (26.61)
	Rice	\$ 70.27	\$ 113.44	\$ 21.96	\$ 46.89	\$ 70.67	\$ 113.83	\$ 22.36	\$ 46.75				
	Soybeans	\$ (10.46)	\$ (53.59)	\$ 37.85	\$ 12.99	\$ (10.07)	\$ (53.19)	\$ 38.25	\$ 12.85	\$ 64.58	\$ 64.62	\$ 64.58	

Notes:

^a Includes seed, fertilizer, chemicals, custom work, repair, maintenance, fuel, and irrigation supplies

^b Annualized ownership charges includes tax, insurance, housing, as well as capital recovery on equipment

^c Net returns above total specified expenses may be interpreted as returns to owner labor, land and capital employed. Subtracting cash rent would remove returns to land

^d \$100/acre and \$50/acre rental rate represents the 2011 average rental rate in Arkansas County and the \$116/acre rental rate represents the 2011 per acre rental rate in Chicot County

^e Operation's interest savings due to loan program participation

^f Change in equipment ownership charges per acre may be multiplied by 5.5835 to arrive at change in loan volume per acre at 6% capital recovery rate assuming a 7 year average equipment loan and applies across ownership, cash rental or crop share arrangements

Table 10: Comparison of Crop Rotations Adoptions to Loan Program Participation in Arkansas Using 2011 Enterprise Budgets Across a 75/25 Crop-Share Arrangement Assuming Constant Revenues. Numbers Represent \$ per Acre.

Rotation		RWSB	RWSB	RWSB	RWSB	SBR	SBR	SBR	SBR	SBW	SBW	SBW	CC	CC	
	Irrigation Type	Flood	Flood	Flood	Flood	Flood	Flood	Flood	Flood	Furrow	CP	Flood	Furrow	CP	
	Seed Variety	Conv.	Clearfield	Hybrid	Hybrid	Conv.	Clearfield	Hybrid	Hybrid	RR	RR	RR	RR/RR-Flex	RR/RR-Flex	
	Tillage	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	
	Length of Rotation (yrs)	3	3	3	3	2	2	2	2	1	1	1	2	2	
Crop Share Rent	Crop Share ^a	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	
	Cost-Share ^b	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying & Chemical (25/75)	Drying & Chemical (25/75)	
	Tenant Financial Performance (Avg/yr)	Revenue	\$ 740.29	\$ 719.18	\$ 782.51	\$ 782.51	\$ 616.54	\$ 595.43	\$ 658.76	\$ 658.76	\$ 762.75	\$ 762.75	\$ 762.75	\$ 761.10	\$ 761.10
	Operating Expenses	\$ 355.19	\$ 365.16	\$ 359.90	\$ 376.05	\$ 390.91	\$ 398.37	\$ 390.47	\$ 415.22	\$ 500.49	\$ 530.64	\$ 500.45	\$ 553.15	\$ 588.32	
	Operating Interest	\$ 13.81	\$ 14.28	\$ 13.87	\$ 14.53	\$ 9.77	\$ 10.24	\$ 9.83	\$ 10.50	\$ 13.94	\$ 14.77	\$ 13.94	\$ 12.55	\$ 13.51	
	Ownership Charges	\$ 65.71	\$ 65.71	\$ 65.71	\$ 65.71	\$ 78.92	\$ 78.92	\$ 78.92	\$ 78.92	\$ 97.10	\$ 130.66	\$ 93.11	\$ 96.62	\$ 134.64	
	NRAT	\$ 95.12	\$ 58.58	\$ 130.23	\$ 105.34	\$ 136.93	\$ 100.39	\$ 172.05	\$ 146.62	\$ 151.22	\$ 86.69	\$ 155.24	\$ 98.78	\$ 24.62	
	Change	Loan Program	Participation	Participation	Participation	Participation	Participation	Participation	Participation	Participation	Participation	Participation	Participation	Participation	Participation
	Tenant Modified Financial Performance (Avg/yr)	Modified Operating Expenses	\$ 355.19	\$ 234.53	\$ 359.90	\$ 248.64	\$ 390.91	\$ 405.87	\$ 397.97	\$ 422.72	\$ 500.49	\$ 530.64	\$ 500.45	\$ 553.15	\$ 588.32
	Modified Operating Interest	\$ 13.21	\$ 13.67	\$ 13.27	\$ 13.90	\$ 9.34	\$ 9.80	\$ 9.40	\$ 10.04	\$ 13.35	\$ 14.14	\$ 13.35	\$ 11.99	\$ 12.91	
Modified Ownership Charges	\$ 69.75	\$ 69.75	\$ 69.75	\$ 69.75	\$ 78.92	\$ 78.92	\$ 78.92	\$ 78.92	\$ 97.10	\$ 130.66	\$ 93.11	\$ 96.62	\$ 134.64		
Modified NRAT	\$ 95.72	\$ 59.20	\$ 130.83	\$ 105.97	\$ 137.36	\$ 100.84	\$ 172.48	\$ 147.08	\$ 151.81	\$ 87.32	\$ 155.84	\$ 99.34	\$ 25.23		
	Changes in Interest Costs	\$ (0.60)	\$ (0.62)	\$ (0.60)	\$ (0.63)	\$ (0.43)	\$ (0.45)	\$ (0.43)	\$ (0.46)	\$ (0.59)	\$ (0.63)	\$ (0.59)	\$ (0.56)	\$ (0.60)	
	Change in NRAT	\$ 0.60	\$ 0.62	\$ 0.60	\$ 0.63	\$ 0.43	\$ 0.45	\$ 0.43	\$ 0.46	\$ 0.59	\$ 0.63	\$ 0.59	\$ 0.56	\$ 0.60	
	Change in Ownership Charges	\$ 4.03	\$ 4.03	\$ 4.03	\$ 4.03	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
	% Increase/Decrease in Profits	0.63%	1.06%	0.46%	0.60%	0.31%	0.45%	0.25%	0.31%	0.39%	0.73%	0.38%	0.57%	2.45%	
Changes From Only Producing:	Com												\$ 11.46	\$ 19.86	
	Cotton												\$ (28.93)	\$ (39.75)	
	Rice	\$ 55.35	\$ 91.91	\$ 20.24	\$ 45.16	\$ 96.99	\$ 133.56	\$ 61.88	\$ 86.28						
	Soybeans	\$ (78.04)	\$ (114.56)	\$ (42.92)	\$ (67.79)	\$ (36.40)	\$ (72.92)	\$ (1.28)	\$ (26.68)	\$ (17.92)	\$ (17.88)	\$ (17.92)			

Notes:

^a Same production method as baseline under ownership and cash rent but different returns to land charged via crop/cost share arrangement

^b All costs born by the tenant except as outlined

Table 11: Comparison of Crop Rotations Adoptions to Loan Program Participation in Arkansas Using 2011 Enterprise Budgets Across Ownership and Cash Rent and Using a Five-Year Weighted Moving Average for Market Price. Assuming Constant Revenues. Numbers Represent \$ per Acre.

Rotation		RWSB	RWSB	RWSB	RWSB	SBR	SBR	SBR	SBR	SBW	SBW	SBW	CC	CC
Production Methods	Irrigation Type	Flood	Flood	Flood	Flood	Flood	Flood	Flood	Flood	Furrow	CP	Flood	Furrow	CP
	Seed Variety	Conv.	Clearfield	Hybrid	Clearfield	Conv.	Clearfield	Hybrid	Clearfield	RR	RR	RR	RR/RR-Flex	RR/RR-Flex
	Tillage	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.
	Length of Rotation (yrs)	3	3	3	3	2	2	2	2	1	1	1	2	2
Financial Performance (Avg/yr)	Revenue	\$ 1,015.21	\$ 983.11	\$ 1,079.42	\$ 1,079.42	\$ 852.69	\$ 820.58	\$ 916.90	\$ 916.90	\$ 938.85	\$ 938.85	\$ 938.85	\$ 843.93	\$ 843.93
	Operating Expenses ^a	\$ 360.15	\$ 369.83	\$ 354.03	\$ 381.59	\$ 398.35	\$ 381.19	\$ 406.28	\$ 431.04	\$ 500.49	\$ 530.64	\$ 500.45	\$ 573.60	\$ 606.17
	Operating Interest	\$ 13.81	\$ 14.28	\$ 13.87	\$ 14.53	\$ 9.77	\$ 10.24	\$ 9.83	\$ 10.50	\$ 13.94	\$ 14.77	\$ 13.94	\$ 12.93	\$ 13.88
	Ownership Charges ^b	\$ 65.71	\$ 65.71	\$ 35.30	\$ 65.71	\$ 78.92	\$ 78.92	\$ 78.92	\$ 78.92	\$ 97.10	\$ 130.66	\$ 93.11	\$ 96.62	\$ 134.64
	NRAT ^c	\$ 362.61	\$ 315.51	\$ 418.83	\$ 393.93	\$ 365.64	\$ 318.55	\$ 421.87	\$ 396.44	\$ 327.32	\$ 262.79	\$ 331.34	\$ 163.39	\$ 89.23
	Cash Rent (\$/yr) ^d	\$ 105.00	\$ 105.00	\$ 105.00	\$ 105.00	\$ 105.00	\$ 105.00	\$ 105.00	\$ 105.00	\$ 105.00	\$ 105.00	\$ 105.00	\$ 105.00	\$ 105.00
Change	Loan Program	Participation	Participation	Participation	Participation	Participation	Participation	Participation	Participation	Participation	Participation	Participation	Participation	Participation
Modified Financial Performance (Avg/yr)	Modified Operating Expenses	\$ 360.15	\$ 369.83	\$ 365.44	\$ 381.59	\$ 398.35	\$ 412.87	\$ 406.28	\$ -	\$ 500.49	\$ 530.64	\$ 500.45	\$ 573.30	\$ 606.17
	Modified Operating Interest	\$ 13.21	\$ 13.67	\$ 13.27	\$ 13.90	\$ 9.34	\$ 9.80	\$ 9.40	\$ 10.04	\$ 13.35	\$ 14.14	\$ 13.35	\$ 12.35	\$ 13.27
	Modified Ownership Charges	\$ 69.75	\$ 69.75	\$ 69.75	\$ 69.75	\$ 78.92	\$ 78.92	\$ 78.92	\$ -	\$ 97.10	\$ 130.66	\$ 93.11	\$ 96.62	\$ 134.64
	Modified Ownership Charges	\$ 363.20	\$ 316.13	\$ 419.43	\$ 394.56	\$ 366.07	\$ 319.00	\$ 422.30	\$ 396.90	\$ 327.91	\$ 263.42	\$ 331.94	\$ 163.96	\$ 89.85
	Changes in Interest Costs ^e	\$ (0.60)	\$ (0.62)	\$ (0.60)	\$ (0.63)	\$ (0.43)	\$ (0.45)	\$ (0.43)	\$ (0.46)	\$ (0.59)	\$ (0.63)	\$ (0.59)		
	Change in NRAT	\$ 0.60	\$ 0.62	\$ 0.60	\$ 0.63	\$ 0.43	\$ 0.45	\$ 0.43	\$ 0.46	\$ 0.59	\$ 0.63	\$ 0.59	\$ 0.58	\$ 0.62
	Change in Ownership Charges ^f	\$ 4.03	\$ 4.03	\$ 34.44	\$ 4.03	\$ -	\$ -	\$ -	\$ (78.92)	\$ -	\$ -	\$ -	\$ -	\$ -
	% Increase/Decrease in NRAT	0.16%	0.20%	0.14%	0.16%	0.12%	0.14%	0.10%	0.12%	0.18%	0.24%	0.18%	0.35%	0.69%
Changes From Only Producing:	Corn												\$ 14.92	\$ 23.32
	Cotton												\$ (13.77)	\$ (22.08)
	Rice	\$ (36.88)	\$ 11.08	\$ (92.26)	\$ (67.33)	\$ (34.01)	\$ 13.95	\$ (89.39)	\$ (64.99)					
	Soybeans	\$ 90.90	\$ 43.82	\$ 147.12	\$ 122.26	\$ 93.76	\$ 46.69	\$ 149.99	\$ 124.59	\$ 59.63	\$ 59.67	\$ 59.63		

Notes:

^a Includes seed, fertilizer, chemicals, custom work, repair, maintenance, fuel, and irrigation supplies

^b Annualized ownership charges includes tax, insurance, housing, as well as capital recovery on equipment

^c Net returns above total specified expenses may be interpreted as returns to owner labor, land and capital employed. Subtracting cash rent would remove returns to land

^d \$100/acre and \$50/acre rental rate represents the 2011 average rental rate in Arkansas County and the \$116/acre rental rate represents the 2011 per acre rental rate in Chicot County

^e Operation's interest savings due to loan program participation

^f Change in equipment ownership charges per acre may be multiplied by 5.5835 to arrive at change in loan volume per acre at 6% capital recovery rate assuming a 7 year average equipment loan and applies across ownership, cash rental or crop share arrangements

Table 12: Comparison of Crop Rotations Adoptions to Loan Program Participation in Arkansas Using 2011 Enterprise Budgets Across a 75/25 Crop-Share Arrangement and Using a Five-Year Weighted Moving Average for Market Price. Assuming Constant Revenues. Numbers Represent \$ per Acre.

Rotation		RWSB	RWSB	RWSB	RWSB	SBR	SBR	SBR	SBR	SBW	SBW	SBW	CC	CC	
Crop Share Rent	Irrigation Type	Flood	Flood	Flood	Flood Clearfield	Flood	Flood	Flood	Flood Clearfield	Furrow	CP	Flood	Furrow	CP	
	Seed Variety	Conv.	Clearfield	Hybrid	Hybrid	Conv.	Clearfield	Hybrid	Hybrid	RR	RR	RR	RR/RR-Flex	RR/RR-Flex	
	Tillage	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	
	Length of Rotation (yrs)	3	3	3	3	2	2	2	2	1	1	1	2	2	
	Crop Share ^a	Revenue (L/T)	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75
		Cost-Share ^b	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying & Chemical (25/75)	Drying & Chemical
	Tenant Financial Performance (Avg/yr)	Revenue	\$ 761.41	\$ 737.33	\$ 809.57	\$ 809.57	\$ 639.51	\$ 615.44	\$ 687.67	\$ 687.67	\$ 704.14	\$ 704.14	\$ 704.14	\$ 632.95	\$ 632.95
		Operating Expenses	\$ 355.19	\$ 365.16	\$ 359.90	\$ 376.05	\$ 390.91	\$ 398.37	\$ 390.47	\$ 415.22	\$ 500.49	\$ 530.64	\$ 500.45	\$ 553.15	\$ 588.32
		Operating Interest	\$ 13.81	\$ 14.28	\$ 13.87	\$ 14.53	\$ 9.77	\$ 10.24	\$ 9.83	\$ 10.50	\$ 13.94	\$ 14.77	\$ 13.94	\$ 12.55	\$ 13.51
		Ownership Charges	\$ 65.71	\$ 65.71	\$ 65.71	\$ 65.71	\$ 78.92	\$ 78.92	\$ 78.92	\$ 78.92	\$ 97.10	\$ 130.66	\$ 93.11	\$ 96.62	\$ 134.64
		NRAT	\$ 116.24	\$ 76.73	\$ 157.29	\$ 132.39	\$ 159.91	\$ 120.40	\$ 200.96	\$ 175.53	\$ 92.61	\$ 28.07	\$ 96.63	\$ (29.37)	\$ (103.53)
	Change	Loan Program	Participation	Participation	Participation	Participation	Participation	Participation	Participation	Participation	Participation	Participation	Participation	Participation	Participation
	Tenant Modified Financial Performance (Avg/yr)	Modified Operating Expense	\$ 355.19	\$ 234.53	\$ 359.90	\$ 248.64	\$ 349.53	\$ 405.87	\$ 397.97	\$ 422.72	\$ 500.49	\$ 530.64	\$ 500.45	\$ 553.15	\$ 588.32
		Modified Operating Interest	\$ 13.21	\$ 13.67	\$ 13.27	\$ 13.90	\$ 9.34	\$ 9.80	\$ 9.40	\$ 10.04	\$ 13.35	\$ 14.14	\$ 13.35	\$ 11.99	\$ 12.91
		Modified Ownership Charges	\$ 69.75	\$ 69.75	\$ 69.75	\$ 69.75	\$ 114.68	\$ 78.92	\$ 78.92	\$ 78.92	\$ 97.10	\$ 130.66	\$ 93.11	\$ 96.62	\$ 134.64
Modified NRAT		\$ 116.84	\$ 77.35	\$ 157.89	\$ 133.02	\$ 160.34	\$ 120.85	\$ 201.39	\$ 175.99	\$ 93.20	\$ 28.70	\$ 97.22	\$ (28.81)	\$ (102.93)	
Changes in Interest Costs		\$ (0.60)	\$ (0.62)	\$ (0.60)	\$ (0.63)	\$ (0.43)	\$ (0.45)	\$ (0.43)	\$ (0.46)	\$ (0.59)	\$ (0.63)	\$ (0.59)	\$ (0.56)	\$ (0.60)	
Change in NRAT		\$ 0.60	\$ 0.62	\$ 0.60	\$ 0.63	\$ 0.43	\$ 0.45	\$ 0.43	\$ 0.46	\$ 0.59	\$ 0.63	\$ 0.59	\$ 0.56	\$ 0.60	
Change in Ownership Charges		\$ 4.03	\$ 4.03	\$ 4.03	\$ 4.03	\$ 35.76	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
% Increase/Decrease in Profits		0.51%	0.81%	0.38%	0.48%	0.27%	0.37%	0.21%	0.26%	0.64%	2.24%	0.61%	1.90%	0.58%	
Changes From Only Producing:													\$ 1.82	\$ 10.22	
	Corn												\$ (157.08)	\$ (167.91)	
	Cotton														
	Rice	\$ (24.38)	\$ 110.07	\$ 47.29	\$ 72.22	\$ 19.12	\$ 153.57	\$ 90.79	\$ 115.18						
	Soybeans	\$ (56.92)	\$ (96.41)	\$ (15.87)	\$ (40.74)	\$ (13.42)	\$ (52.91)	\$ 27.63	\$ 2.23	\$ (76.53)	\$ (76.50)	\$ (76.53)			

Notes:

^a Same production method as baseline under ownership and cash rent but different returns to land charged via crop/cost share arrangement

^b All costs born by the tenant except as outlined

Table 13: Comparison of No-till Crop Rotations Adoptions to Loan Program Participation for Five Major Crops in Arkansas Using 2011 Enterprise Budgets Across Ownership and Cash Rent. Assuming Constant Revenues. Numbers Represent \$ per Acre.

Rotation		RWSB	RWSB	RWSB	RWSB	SBR	SBR	SBR	SBR	SBW	SBW	SBW	CC	CC
Production Methods	Irrigation Type	Flood	Flood	Flood	Flood	Flood	Flood	Flood	Flood	Furrow	CP	Flood	Furrow	CP
	Seed Variety	Conv.	Clearfield	Hybrid	Clearfield	Conv.	Clearfield	Hybrid	Clearfield	RR	RR	RR	RR/RR-Flex	RR/RR-Flex
	Tillage	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.
	Length of Rotation (yrs)	3	3	3	3	2	2	2	2	1	1	1	2	2
Financial Performance (Avg/yr)	Revenue	\$ 987.05	\$ 958.90	\$ 1,043.35	\$ 1,043.35	\$ 822.05	\$ 793.90	\$ 878.35	\$ 878.35	\$ 1,017.00	\$ 1,017.00	\$ 1,017.00	\$ 1,014.80	\$ 1,014.80
	Operating Expenses ^a	\$ 360.15	\$ 369.83	\$ 354.03	\$ 381.59	\$ 398.35	\$ 381.19	\$ 406.28	\$ 431.04	\$ 500.49	\$ 530.64	\$ 500.45	\$ 571.00	\$ 606.17
	Operating Interest	\$ 13.81	\$ 14.28	\$ 13.87	\$ 14.53	\$ 9.77	\$ 10.24	\$ 9.83	\$ 10.50	\$ 13.94	\$ 14.77	\$ 13.94	\$ 12.93	\$ 13.88
	Ownership Charges ^b	\$ 65.71	\$ 65.71	\$ 35.30	\$ 65.71	\$ 78.92	\$ 78.92	\$ 78.92	\$ 78.92	\$ 97.10	\$ 130.66	\$ 93.11	\$ 96.62	\$ 134.64
	NRAT ^c	\$ 334.45	\$ 291.30	\$ 382.76	\$ 357.86	\$ 335.01	\$ 291.87	\$ 383.32	\$ 357.89	\$ 405.47	\$ 340.94	\$ 409.49	\$ 334.26	\$ 260.10
	Cash Rent (\$/yr) ^d	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 116.00	\$ 116.00
Change	Loan Program	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till
Modified Financial Performance (Avg/yr)	Modified Operating Expenses	\$ 357.94	\$ 363.60	\$ 364.52	\$ 377.75	\$ 393.41	\$ 404.50	\$ 405.88	\$ 426.24	\$ 491.03	\$ 522.74	\$ 496.35	\$ 562.21	\$ 597.21
	Modified Operating Interest	\$ 13.13	\$ 13.42	\$ 13.23	\$ 13.67	\$ 9.21	\$ 9.58	\$ 9.39	\$ 9.92	\$ 13.11	\$ 13.93	\$ 13.25	\$ 12.12	\$ 13.03
	Modified Ownership Charges	\$ 57.81	\$ 56.06	\$ 53.64	\$ 53.64	\$ 69.97	\$ 67.34	\$ 63.72	\$ 63.72	\$ 77.52	\$ 112.72	\$ 78.91	\$ 86.82	\$ 125.43
	Modified Ownership Charges	\$ 350.30	\$ 315.99	\$ 402.87	\$ 382.59	\$ 349.46	\$ 312.48	\$ 399.36	\$ 378.48	\$ 435.34	\$ 367.60	\$ 428.49	\$ 353.65	\$ 279.14
	Changes in Interest Costs ^e	\$ (0.68)	\$ (0.86)	\$ (0.63)	\$ (0.86)	\$ (0.56)	\$ (0.67)	\$ (0.44)	\$ (0.58)	\$ (0.84)	\$ (0.83)	\$ (0.70)	\$ (0.80)	\$ (0.85)
	Change in NRAT	\$ 15.85	\$ 24.69	\$ 20.11	\$ 24.73	\$ 14.45	\$ 20.62	\$ 16.04	\$ 20.59	\$ 29.87	\$ 26.67	\$ 19.00	\$ 19.39	\$ 19.04
	Change in Ownership Charges ^f	\$ (7.90)	\$ (9.65)	\$ 18.34	\$ (12.07)	\$ (8.95)	\$ (11.58)	\$ (15.21)	\$ (15.21)	\$ (19.58)	\$ (17.94)	\$ (14.20)	\$ (9.80)	\$ (9.22)
	% Increase/Decrease in NRAT	4.74%	8.47%	5.25%	6.91%	4.31%	7.06%	4.18%	5.75%	7.37%	7.82%	4.64%	5.80%	7.32%
Changes From Only Producing:	Corn												\$ 46.58	\$ 54.58
	Cotton												\$ (7.80)	\$ (16.51)
	Rice	\$ 85.53	\$ 137.51	\$ 41.47	\$ 70.99	\$ 84.69	\$ 134.00	\$ 37.97	\$ 66.88					
	Soybeans	\$ 4.79	\$ (29.52)	\$ 57.36	\$ 37.09	\$ 3.95	\$ (33.02)	\$ 53.86	\$ 32.97	\$ 93.86	\$ 90.66	\$ 82.98		

Notes:

^a Includes seed, fertilizer, chemicals, custom work, repair, maintenance, fuel, and irrigation supplies

^b Annualized ownership charges includes tax, insurance, housing, as well as capital recovery on equipment

^c Net returns above total specified expenses may be interpreted as returns to owner labor, land and capital employed. Subtracting cash rent would remove returns to land

^d \$100/acre and \$50/acre rental rate represents the 2011 average rental rate in Arkansas County and the \$116/acre rental rate represents the 2011 per acre rental rate in Chicot County

^e Operation's interest savings due to loan program participation

^f Change in equipment ownership charges per acre may be multiplied by 5.5835 to arrive at change in loan volume per acre at 6% capital recovery rate assuming a 7 year average equipment loan and applies across ownership, cash rental or crop share arrangements

Table 14: Comparison of No-till Crop Rotations Adoptions to Loan Program Participation for Five Major Crops in Arkansas Using 2011 Enterprise Budgets For Crop-Share Rented. Assuming Constant Revenues. Numbers Represent \$ per Acre.

Rotation		RWSB	RWSB	RWSB	RWSB	SBR	SBR	SBR	SBR	SBW	SBW	SBW	CC	CC	
	Irrigation Type	Flood	Flood	Flood	Flood Clearfield	Flood	Flood	Flood	Flood Clearfield	Furrow	CP	Flood	Furrow	CP	
	Seed Variety	Conv.	Clearfield	Hybrid	Hybrid	Conv.	Clearfield	Hybrid	Hybrid	RR	RR	RR	RR/RR-Flex	RR/RR-Flex	
	Tillage	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	
	Length of Rotation (yrs)	3	3	3	3	2	2	2	2	1	1	1	2	2	
Crop Share Rent	Crop Share ^a	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	
	Cost-Share ^b	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying & Chemical (25/75)	Drying & Chemical	
	Revenue	\$ 740.29	\$ 719.18	\$ 782.51	\$ 782.51	\$ 616.54	\$ 595.43	\$ 658.76	\$ 658.76	\$ 762.75	\$ 762.75	\$ 762.75	\$ 761.10	\$ 761.10	
	Operating Expenses	\$ 355.19	\$ 365.16	\$ 359.90	\$ 376.05	\$ 390.91	\$ 398.37	\$ 390.47	\$ 415.22	\$ 500.49	\$ 530.64	\$ 500.45	\$ 553.15	\$ 588.32	
	Operating Interest	\$ 13.81	\$ 14.28	\$ 13.87	\$ 14.53	\$ 9.77	\$ 10.24	\$ 9.83	\$ 10.50	\$ 13.94	\$ 14.77	\$ 13.94	\$ 12.55	\$ 13.51	
	Ownership Charges	\$ 65.71	\$ 65.71	\$ 65.71	\$ 65.71	\$ 78.92	\$ 78.92	\$ 78.92	\$ 78.92	\$ 97.10	\$ 130.66	\$ 93.11	\$ 96.62	\$ 134.64	
	NRAT	\$ 95.12	\$ 58.58	\$ 130.23	\$ 105.34	\$ 136.93	\$ 100.39	\$ 172.05	\$ 146.62	\$ 151.22	\$ 86.69	\$ 155.24	\$ 98.78	\$ 24.62	
	Change	Loan Program	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till
	Tenant Modified Financial Performance (Avg/yr)	Modified Operating Expenses	\$ 352.98	\$ 358.93	\$ 358.98	\$ 372.21	\$ 385.97	\$ 397.50	\$ 397.57	\$ 417.93	\$ 491.03	\$ 522.74	\$ 496.35	\$ 544.29	\$ 579.28
		Modified Operating Interest	\$ 13.13	\$ 13.42	\$ 13.23	\$ 13.67	\$ 9.21	\$ 9.58	\$ 9.39	\$ 9.92	\$ 13.11	\$ 13.93	\$ 13.25	\$ 11.76	\$ 12.67
	Modified Ownership Charges	\$ 57.81	\$ 56.06	\$ 53.64	\$ 53.64	\$ 69.97	\$ 67.34	\$ 63.72	\$ 63.72	\$ 77.52	\$ 112.72	\$ 78.91	\$ 86.82	\$ 125.43	
	Modified NRAT	\$ 110.97	\$ 83.26	\$ 150.34	\$ 130.07	\$ 151.38	\$ 121.01	\$ 188.09	\$ 167.20	\$ 181.09	\$ 113.35	\$ 174.24	\$ 118.23	\$ 43.72	
	Changes in Interest Costs	\$ (0.68)	\$ (0.86)	\$ (0.63)	\$ (0.86)	\$ (0.56)	\$ (0.67)	\$ (0.44)	\$ (0.58)	\$ (0.84)	\$ (0.83)	\$ (0.70)	\$ (0.79)	\$ (0.84)	
	Change in NRAT	\$ 15.85	\$ 24.69	\$ 20.11	\$ 24.73	\$ 14.45	\$ 20.62	\$ 16.04	\$ 20.59	\$ 29.87	\$ 26.67	\$ 19.00	\$ 19.45	\$ 19.10	
	Change in Ownership Charges	\$ (7.90)	\$ (9.65)	\$ (12.07)	\$ (12.07)	\$ (8.95)	\$ (11.58)	\$ (15.21)	\$ (15.21)	\$ (19.58)	\$ (17.94)	\$ (14.20)	\$ (9.80)	\$ (9.22)	
	% Increase/Decrease in Profits	16.66%	42.14%	15.44%	23.48%	10.55%	20.54%	9.32%	14.04%	19.75%	30.76%	12.24%	19.69%	77.55%	
Changes From Only Producing:	Com												\$ 30.35	\$ 38.35	
	Cotton												\$ (12.19)	\$ (19.02)	
	Rice	\$ 70.60	\$ 115.98	\$ 39.75	\$ 69.26	\$ 111.02	\$ 153.73	\$ 77.49	\$ 106.40						
	Soybeans	\$ (62.78)	\$ (90.49)	\$ (23.41)	\$ (43.69)	\$ (22.37)	\$ (52.75)	\$ 14.33	\$ (6.55)	\$ 11.36	\$ 8.16	\$ 0.48			

Notes:

^a Same production method as baseline under ownership and cash rent but different returns to land charged via crop/cost share arrangement

^b All costs born by the tenant except as outlined

Table 15: Comparison of No-till Crop Rotations Adoptions to Loan Program Participation for Five Major Crops in Arkansas Using 2011 Enterprise Budgets Across Ownership and Cash Rent and Using a Five-Year Weighted Moving Average for Market Price. Assuming Constant Revenues. Numbers Represent \$ per Acre.

Rotation		RWSB	RWSB	RWSB	RWSB	SBR	SBR	SBR	SBR	SBW	SBW	SBW	CC	CC
Production Methods	Irrigation Type	Flood	Flood	Flood	Flood	Flood	Flood	Flood	Flood	Furrow	CP	Flood	Furrow	CP
	Seed Variety	Conv.	Clearfield	Hybrid	Clearfield	Conv.	Clearfield	Hybrid	Clearfield	RR	RR	RR	RR/RR-Flex	RR/RR-Flex
	Tillage	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.
	Length of Rotation (yrs)	3	3	3	3	2	2	2	2	1	1	1	2	2
Financial Performance (Avg/yr)	Revenue	\$ 1,015.21	\$ 983.11	\$ 1,079.42	\$ 1,079.42	\$ 852.69	\$ 820.58	\$ 916.90	\$ 916.90	\$ 938.85	\$ 938.85	\$ 938.85	\$ 843.93	\$ 843.93
	Operating Expenses ^a	\$ 360.15	\$ 369.83	\$ 354.03	\$ 381.59	\$ 398.35	\$ 381.19	\$ 406.28	\$ 431.04	\$ 500.49	\$ 530.64	\$ 500.45	\$ 573.60	\$ 606.17
	Operating Interest	\$ 13.81	\$ 14.28	\$ 13.87	\$ 14.53	\$ 9.77	\$ 10.24	\$ 9.83	\$ 10.50	\$ 13.94	\$ 14.77	\$ 13.94	\$ 12.93	\$ 13.88
	Ownership Charges ^b	\$ 65.71	\$ 65.71	\$ 35.30	\$ 65.71	\$ 78.92	\$ 78.92	\$ 78.92	\$ 78.92	\$ 97.10	\$ 130.66	\$ 93.11	\$ 96.62	\$ 134.64
	NRAT ^c	\$ 362.61	\$ 315.51	\$ 418.83	\$ 393.93	\$ 365.64	\$ 318.55	\$ 421.87	\$ 396.44	\$ 327.32	\$ 262.79	\$ 331.34	\$ 163.39	\$ 89.23
	Cash Rent (\$/yr) ^d	\$ 105.00	\$ 105.00	\$ 105.00	\$ 105.00	\$ 105.00	\$ 105.00	\$ 105.00	\$ 105.00	\$ 105.00	\$ 105.00	\$ 105.00	\$ 105.00	\$ 105.00
Change	Loan Program	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till
Modified Financial Performance (Avg/yr)	Modified Operating Expenses	\$ 357.94	\$ 363.60	\$ 364.52	\$ 377.75	\$ 393.41	\$ 404.50	\$ 405.88	\$ 426.24	\$ 491.03	\$ 522.74	\$ 496.35	\$ 564.40	\$ 599.80
	Modified Operating Interest	\$ 13.13	\$ 13.34	\$ 13.23	\$ 13.67	\$ 9.21	\$ 9.58	\$ 9.39	\$ 9.92	\$ 13.11	\$ 13.93	\$ 13.25	\$ 12.12	\$ 13.03
	Modified Ownership Charges	\$ 57.81	\$ 56.06	\$ 53.64	\$ 53.64	\$ 69.97	\$ 67.34	\$ 63.72	\$ 63.72	\$ 77.52	\$ 112.72	\$ 78.91	\$ 86.82	\$ 125.43
	Modified Ownership Charges	\$ 378.46	\$ 340.28	\$ 438.94	\$ 418.66	\$ 380.09	\$ 339.16	\$ 437.91	\$ 417.02	\$ 357.19	\$ 289.45	\$ 350.34	\$ 182.78	\$ 108.27
	Changes in Interest Costs ^e	\$ (0.68)	\$ (0.95)	\$ (0.63)	\$ (0.86)	\$ (0.56)	\$ (0.67)	\$ (0.44)	\$ (0.58)	\$ (0.84)	\$ (0.83)	\$ (0.70)	\$ (0.80)	\$ (0.85)
	Change in NRAT	\$ 15.85	\$ 24.77	\$ 20.11	\$ 24.73	\$ 14.45	\$ 20.62	\$ 16.04	\$ 20.59	\$ 29.87	\$ 26.67	\$ 19.00	\$ 19.39	\$ 19.04
	Change in Ownership Charges ^f	\$ (7.90)	\$ (9.65)	\$ 18.34	\$ (12.07)	\$ (8.95)	\$ (11.58)	\$ (15.21)	\$ (15.21)	\$ (19.58)	\$ (17.94)	\$ (14.20)	\$ (9.80)	\$ (9.22)
	% Increase/Decrease in NRAT	4.37%	7.85%	4.80%	6.28%	3.95%	6.47%	3.80%	5.19%	9.12%	10.15%	5.73%	11.87%	21.34%
Changes From Only Producing:	Corn												\$ 33.73	\$ 41.73
	Cotton												\$ 5.05	\$ (3.66)
	Rice	\$ (21.62)	\$ 35.24	\$ (72.75)	\$ (43.23)	\$ (19.99)	\$ 34.12	\$ (73.78)	\$ (44.87)					
	Soybeans	\$ 106.15	\$ 67.97	\$ 166.63	\$ 146.36	\$ 107.79	\$ 66.86	\$ 165.60	\$ 144.72	\$ 88.91	\$ 85.71	\$ 78.03		

Notes:

^a Includes seed, fertilizer, chemicals, custom work, repair, maintenance, fuel, and irrigation supplies

^b Annualized ownership charges includes tax, insurance, housing, as well as capital recovery on equipment

^c Net returns above total specified expenses may be interpreted as returns to owner labor, land and capital employed. Subtracting cash rent would remove returns to land

^d \$100/acre and \$50/acre rental rate represents the 2011 average rental rate in Arkansas County and the \$116/acre rental rate represents the 2011 per acre rental rate in Chicot County

^e Operation's interest savings due to loan program participation

^f Change in equipment ownership charges per acre may be multiplied by 5.5835 to arrive at change in loan volume per acre at 6% capital recovery rate assuming a 7 year average equipment loan and applies across ownership, cash rental or crop share arrangements

Table 16: Comparison of No-till Crop Rotations Adoptions to Loan Program Participation for Five Major Crops in Arkansas Using 2011 Enterprise Budgets For Crop-Share Rent and Using a Five-Year Weighted Moving Average for Market Price. Assuming Constant Revenues. Numbers Represent \$ per Acre.

Rotation		RWSB	RWSB	RWSB	RWSB	SBR	SBR	SBR	SBR	SBW	SBW	SBW	CC	CC	
Crop Share Rent	Irrigation Type	Flood	Flood	Flood	Flood	Flood	Flood	Flood	Flood	Furrow	CP	Flood	Furrow	CP	
	Seed Variety	Conv.	Clearfield	Hybrid	Clearfield	Conv.	Clearfield	Hybrid	Clearfield	RR	RR	RR	RR/RR-Flex	RR/RR-Flex	
	Tillage	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	Conv.	
	Length of Rotation (yrs)	3	3	3	3	2	2	2	2	1	1	1	2	2	
	Revenue (L/T)	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75	25/75
	Cost-Share ^b	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying (25/75)	Drying & Chemical (25/75)	Drying & Chemical (25/75)
	Tenant Financial Performance (Avg/yr)	Revenue	\$ 761.41	\$ 737.33	\$ 809.57	\$ 809.57	\$ 639.51	\$ 615.44	\$ 687.67	\$ 687.67	\$ 704.14	\$ 704.14	\$ 704.14	\$ 632.95	\$ 632.95
		Operating Expenses	\$ 355.19	\$ 365.16	\$ 359.90	\$ 376.05	\$ 390.91	\$ 398.37	\$ 390.47	\$ 415.22	\$ 500.49	\$ 530.64	\$ 500.45	\$ 553.15	\$ 588.32
		Operating Interest	\$ 13.81	\$ 14.28	\$ 13.87	\$ 14.53	\$ 9.77	\$ 10.24	\$ 9.83	\$ 10.50	\$ 13.94	\$ 14.77	\$ 13.94	\$ 12.55	\$ 13.51
		Ownership Charges	\$ 65.71	\$ 65.71	\$ 65.71	\$ 65.71	\$ 78.92	\$ 78.92	\$ 78.92	\$ 78.92	\$ 97.10	\$ 130.66	\$ 93.11	\$ 96.62	\$ 134.64
		NRAT	\$ 116.24	\$ 76.73	\$ 157.29	\$ 132.39	\$ 159.91	\$ 120.40	\$ 200.96	\$ 175.53	\$ 92.61	\$ 28.07	\$ 96.63	\$ (29.37)	\$ (103.53)
	Change	Loan Program	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till
	Tenant Modified Financial Performance (Avg/yr)	Modified Operating Expenses	\$ 352.98	\$ 358.93	\$ 358.98	\$ 372.21	\$ 385.97	\$ 397.50	\$ 397.57	\$ 417.93	\$ 491.03	\$ 522.74	\$ 496.35	\$ 544.29	\$ 579.28
		Modified Operating Interest	\$ 13.13	\$ 13.42	\$ 13.23	\$ 13.67	\$ 9.21	\$ 9.58	\$ 9.39	\$ 9.92	\$ 13.11	\$ 13.93	\$ 13.25	\$ 11.76	\$ 12.67
		Modified Ownership Charges	\$ 57.81	\$ 56.06	\$ 53.64	\$ 53.64	\$ 69.97	\$ 67.34	\$ 63.72	\$ 63.72	\$ 77.52	\$ 112.72	\$ 78.91	\$ 86.82	\$ 125.43
	Modified NRAT	\$ 132.09	\$ 101.42	\$ 177.40	\$ 157.12	\$ 174.36	\$ 141.02	\$ 217.00	\$ 196.11	\$ 122.48	\$ 54.74	\$ 115.63	\$ 49.34	\$ (25.17)	
	Changes in Interest Costs	\$ (0.68)	\$ (0.86)	\$ (0.63)	\$ (0.86)	\$ (0.56)	\$ (0.67)	\$ (0.44)	\$ (0.58)	\$ (0.84)	\$ (0.83)	\$ (0.70)	\$ (0.79)	\$ (0.84)	
	Change in NRAT	\$ 15.85	\$ 24.69	\$ 20.11	\$ 24.73	\$ 14.45	\$ 20.62	\$ 16.04	\$ 20.59	\$ 29.87	\$ 26.67	\$ 19.00	\$ 78.71	\$ 78.36	
	Change in Ownership Charges	\$ (7.90)	\$ (9.65)	\$ (12.07)	\$ (12.07)	\$ (8.95)	\$ (11.58)	\$ (15.21)	\$ (15.21)	\$ (19.58)	\$ (17.94)	\$ (14.20)	\$ (9.80)	\$ (9.22)	
	% Increase/Decrease in Profits	13.64%	32.17%	12.78%	18.68%	9.04%	17.12%	7.98%	11.73%	32.25%	94.99%	19.66%	267.97%	75.68%	
Changes From Only Producing:	Corn												\$ 79.97	\$ 87.98	
	Cotton												\$ (81.09)	\$ (87.91)	
	Rice	\$ (9.13)	\$ 134.14	\$ 66.80	\$ 96.32	\$ 33.14	\$ 173.74	\$ 106.40	\$ 135.31						
	Soybeans	\$ (41.66)	\$ (72.34)	\$ 3.64	\$ (16.64)	\$ 0.60	\$ (32.74)	\$ 43.24	\$ 22.36	\$ (47.26)	\$ (50.46)	\$ (58.13)			

Notes:

^a Same production method as baseline under ownership and cash rent but different returns to land charged via crop/cost share arrangement

^b All costs born by the tenant except as outlined

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