

***LANDLORD INFLUENCE ON MORE INTENSIVE ROTATIONS OR DIRECT SEEDING ADOPTION IN EASTERN WASHINGTON**

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Data for this study came from a small survey of participants at field days and farm meetings in Benton, Lincoln, and Whitman Counties during 2003. The sample included 27 farmer-tenants and 11 landlords. Logit regression analysis was conducted to statistically measure how closely different farm and farmer characteristics were related to the farmer's perception of landlords' support for direct seeding. Significant variables indicated that farmers with larger acreages and with a higher proportion of wheat tended to be more pessimistic about landlords' attitude toward direct seeding. Cash renting tended to make farmers more optimistic about landlords' attitudes. Of course, landlords share no yield risk with cash leases.

Seventy two percent of the 11 surveyed landlords viewed direct seeding as an advantageous practice, while 28% of the landlords considered it disadvantageous. Some landlords felt that "income risk" and "weed infestation" were disadvantages. Generally, farmers were more pessimistic regarding landlords' acceptance of direct seeding than were landlords themselves. Only 44 percent of surveyed farmers saw landlords as favoring direct seeding, but 72 percent of landlords characterized themselves as favoring direct seeding. However, fewer landlords reported willingness to cut rents to tenants who direct seeded. Farmers and landlords generally agreed that more intensive rotations or direct seeding could decrease erosion, but both groups feared income risk. Future research should consider both landlord and producer objectives in developing conservation farming technologies that can appeal to both groups. Because this survey included only voluntary participants who were attending field days and farm meetings, it cannot be generalized to the entire eastern Washington farmer or landlord populations. However, the results may provide some useful insights.

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Washington State has a long history of farmland leasing and leasing has increased in recent years. The two dominant farmland leasing arrangements in the state are crop share and cash lease. Crop share leases are dominant in the dryland cereal growing region of eastern Washington. One survey showed 86% of all leases in Whitman County were crop share (Willett 1986).

In eastern Washington more intensive crop rotations and direct seeding are two common conservation practices. The objective of this study is to use recent survey data from eastern Washington 1) to statistically explain which farm or farmer characteristics explain tenants' perceptions of whether landlords are supportive of direct seeding and 2) to describe landlords' attitudes regarding tenants switching to direct seeding on their land.

Data for this study came from a small exploratory survey of farmers and landlords attending field days and farm meetings in Benton, Lincoln, and Whitman Counties in Washington during early 2003. The sample included 27 farmer-tenants and 11 landlords.

The survey collected information on several characteristics of the farm business of farmers (Table 1). The LEASE characteristic describes whether the farmer has predominantly cash (coded 1) or crop-share (coded 0) leases. SIZE represents the size of the farm in acres. %WHEAT represents the percentage of the farm in wheat. EDUC represents the farmer's level of education. %RENTED indicates the percent of farm rented. %RENT_REL indicates the percentage of farmland rented from relatives.

Of the 27 farmers surveyed, 44% reported that their landlords encouraged direct seeding (Table 2). Current lease terms were 88% crop-share and 12% cash. The sample of respondents drawn from field day/meeting attendees represented a highly educated section of the farm population; 88% had graduated from college, two had a master's degree and one a doctorate. Farm size ranged from 650 to 7000 acres with an average of 3344 acres. Average percent of farm in wheat was 54.4%. Percent of farm rented ranged from zero to 100 with a relatively high average of 72.6%. Percent of farm rented from relatives also ranged from zero to 100 with an average of 24.7%.

Logit regression analysis was used to statistically measure how closely the different farm and farmer characteristics were related to the farmers' perceptions of how supportive landlords were of direct seeding.

Results for Farmers

Based on the Pearson Chi Square, the regression equation (Table 3) was statistically significant at the 10% level for the null hypothesis that all coefficients equal zero. Farm SIZE was negatively related at the 7.8 percent statistical level to farmers' perceptions of landlords' support of direct seeding. This indicates operators of larger farms in this sample perceived less support from landlords regarding direct seeding. %WHEAT was negatively related at the 11.6 percent level. This provides some modest preliminary evidence that diversified farmers (less wheat) have experienced a more positive reception by landlords to direct seeding. The only other variable with even modest statistical support is that farmers with cash LEASE have a more optimistic view of landlords' approval of direct seeding. This seems plausible because with cash leases landlords shoulder no risk if direct seeding fails. Overall, EDUC, SIZE, %WHEAT, and

%RENT were negatively associated with perceptions of landlord supportiveness of direct seeding; however, EDUC and %RENT displayed very low levels of statistical significance. LEASE and %RENT_REL responded positively to landlord encouraging direct seeding, but the latter had an unacceptable statistical significance level.

Results for Landlords

The primary attitudinal question in the landlord questionnaire was “What do you feel are the main advantages, and/or disadvantages, associated with your tenants switching either to direct seeding, or to more intensive rotations, on your cropland?” Responses to this question were then used to divide the small sample of 11 landlords between (1) those where direct seeding or intensive rotations’ *advantages* predominated and (2) for those where *disadvantages* predominated.

Seventy two percent of the 11 surveyed landlords favored direct seeding/continuous cropping as advantageous practices while 28% of the landlords considered them as disadvantageous practices. Of landlords considering them as advantageous about 75% reported that one of the primary benefits of more intensive rotations or direct seeding was “erosion control.” Interestingly 67% of those viewing direct seeding as disadvantageous also reported erosion control as an advantage, but felt that “income risk” and “weed infestation” made more intensive rotations or direct seeding unappealing. Due to the small sample size, no formal statistical analysis was conducted for the landlords’ data.

Summary and Conclusions

Because this survey included only voluntary participants who were attended field days and farm meetings, the results can not be generalized to the entire eastern Washington farmer or landlord populations. However, the results may provide some useful insights on some of the issues involved.

Size of farm, percentage of the farm in wheat, and having a cash lease were the three most significant variables influencing farmers’ perceptions about landlords’ disposition toward direct seeding. The first two were negatively correlated and the last was positively correlated. Generally, farmers were more pessimistic regarding landlords’ acceptance of direct seeding than were landlords themselves. Only 44 percent of surveyed farmers saw landlords as favoring direct seeding, but 72 percent of landlords characterized themselves as favoring direct seeding. However, only 37.5% of landlords favoring no-till reported willingness to reduce rent, by an average reduction of 8.5%. One landlord who rented out 4000 acres, and reported no willingness to reduce rent, stated, “Direct seeding should be a better method to farm costing less to the farmer. We would expect our farmers to use the latest farming techniques and always use the best available farming methods. We should both benefit.” Perhaps landlords’ general support for direct seeding was offset in tenants’ eyes by the reluctance of many to offer concrete incentives for direct seeding adoption. Farmers and landlords generally agreed that more intensive rotations or direct seeding can increase soil quality and decrease erosion. Income risk was a perceived barrier to more intensive rotations or direct seeding for both farmers and landlords. Some landlords also feared future weed problems. Some tenants felt landlords needed to be better informed of the benefits of more intensive rotations and/or direct seeding. The large percentage of crop share leases indicates landlords are willing to share in the risk of farming. Over time, with more successes with these new cropping systems, more landlords may become convinced of their value and offer incentives for their adoption. Future research should

consider both landlord and producer objectives to develop conservation farming technologies that appeal to both groups.

Table 1. Description of variables used in farmer survey conducted in 2003.

Variable	Unit	Description
Dependent:		
ENCOUR	(1,0)	1 if landlord encourages adoption, 0 if landlord discourages
Independent:		
LEASE	(1,0)	1 if lease is cash, 0 if crop-share
SIZE	Acres	Acres
%WHEAT	Percent	Percentage of farm in wheat
EDUC	(0,1,2)	0 if high school graduate, 1 of some college or technical school, 2 if college graduate
%RENTED_REL	Percent	Percent of farm rented from relatives
%RENTED	Percent	Percent of farm rented

Table 2. Farm and Farmer Characteristics

Variable	Value	N	% of 0	% of 1	% of 2
Categorical:					
ENCOUR	(1,0)	27	56	44	
LEASE	(1,0)	27	12	88	
EDUC	(0,1,2)	27	04	07	88

Note: See Table 1 for definition of variables and numerical codes.

Table 3. Logit Regression Coefficients and their Statistical Significance

	Intercept	EDUC	SIZE	%WHEAT	%RENT	%RENT_REL	LEASE
Coefficient	3.839	-.8545	-.00064	-.0434	-.00954	.0107	2.744
Significance	.2137	.1490	.0780	.1156	.5671	.5295	.1490

Note: See Table 1 for definition of variables.

References

Willett, G.S. 1986. "Analyzing your landlease agreement?" EB1367, Washington State University Cooperative Extension, Pullman, Washington.