
Computing a Cropland Cash Rental Rate

Ag Decision Maker

File C2-20

Cash rent lease agreements are popular because the lease is simple, the rent is fixed, and the owner is relieved of making operating and marketing decisions. Likewise, the tenant has maximum freedom to plan and develop the cropping and livestock programs. The risk and returns from changing prices, yields and costs are all borne by the tenant.

Types of Cash Rent

A farm may be rented for a fixed amount per acre for all acres in the farm (e.g. 160 acres in a quarter section) regardless of the number or acres of cropland, pasture, buildings or waste. This is referred to as a whole-farm rental rate. Or, the farm may be rented for a fixed amount per cropland acre (i.e. 145 acres cropland in a 160 acre farm) with a different rental rate for any pasture or buildings.

Normally whole farm rental rates are lower than cropland rental rates because the land that is not cropped is often of lower productivity or not used. Exceptions are building sites and grain storage facilities.

Several methods for computing cropland rental rates are outlined below. A separate rental rate should be used for pasture and storage and livestock facilities. All of the rental items can be included in the same lease agreement, however.

Approaches for Determining Rental Rate

Determining a fair rate is not easy. Cash rents are likely to be too low during periods of rising prices and high yields and too high during periods of declining prices and low yields. Rates often reflect the results of the past few years more than the upcoming year.

Estimating a cash rental rate for cropland can be based on:

- what others are charging/paying
- average yields
- corn suitability ratings (CSR index)
- share of gross crop value
- return on investment
- crop share equivalent
- tenant's residual.

What Others are Charging/Paying

The most common method of establishing a cash rent is to set a rate similar to what other people in the area

are charging. *Information File Farmland Cash Rental Rates*, shows typical rental rates reported for high, medium, and low quality cropland in each county in Iowa.

This method assumes that what others are charging is fair and equitable. A landowner receiving less rent per acre than the neighbors feels that he/she is not receiving what is rightfully due. However, a landowner receiving more than a neighbor may feel that he/she is being unfair to the tenant.

There are three potential pitfalls with this approach:

- Charging what others are charging may not be appropriate for a particular farm. Remember that most other tenants and landowners are in the same position you are. They are looking for someone to tell them what rental rate is fair and equitable. If you use this method, compare your rate to many other rates instead of just one.
- Rumors about cash rental rates may be quite different than the actual rates, especially in a rapidly changing market.
- Differences in the quality of land should be taken into account when comparing your rental rate to those of others. Landlords who are unfamiliar with farming often assume all land is of equal productivity. So, when using this method, be sure to compare your rate to rates for land of comparable quality, based on actual yields or productivity indices.

Average Yields

A cash rental rate can be based on a farm's average yields (e.g. five-year or ten-year average). For example, assume the average rental rates in your county are \$1.10 per bushel for corn and \$3.75 per bushel for soybeans, based on the latest survey information. If your farm has an average corn yield of 160 bu. per acre this results in a rental rate of \$176 ($\$1.10 \times 160 \text{ bu.} = \176) per acre. An average soybean yield of 48 bushels per acre results in a rental rate of \$180 ($\$3.75 \times 48 \text{ bu.} = \180) per acre.

Information File Farmland Cash Rental Rates, shows rental rates per bushel of corn and soybeans by county. Remember, use a long-term average yield (both good and bad years), and don't just pick out the good years.

Corn Suitability Ratings

Corn Suitability Rating (CSR) is a farmland productivity index. CSR values range from 0 to 100, with higher num-

bers indicating higher land productivity. Each soil type in Iowa has a CSR index rating. By identifying the soil types and acres of each soil type in a tract of land, a weighted average CSR rating can be computed for the tract. CSR values for a particular tract of land can be obtained from the county assessor's office. Remember to include only the land suitable for row crop production in the estimate.

A cropland cash rental rate can be computed by multiplying the average CSR by a rental rate per CSR point. For example, assume a typical rental rate per CSR index point of \$2.30 for your county. A tract of land with a CSR of 80 would have a rental rate of \$184 ($\$2.30 \times 80 \text{ CSR} = \184) per acre. *Information File Farmland Cash Rental Rates*, shows typical rental rates per CSR index point by county.

Share of Gross Crop Value

Cash rental rates tend to follow the gross value of the crops being produced. The table below shows average cash rents in Iowa as a percent of the gross value of corn and soybeans in recent years. The higher of the harvest cash market price or the USDA loan rate each year was used to compute the gross crop value. This includes potential income from loan deficiency payments or marketing loans, but not from direct payments. Rents have generally averaged about 35 to 40 percent of gross crop value from corn and 45 to 50 percent of gross crop value from soybeans. These percentages and estimated yields and prices for the coming year can be used to estimate a fair cash rental rate.

Return on Investment

Another method is to multiply the estimated current market value for cropland by an expected rate of return.

Surveys show that cash rents for good cropland in Iowa in recent years have averaged about 4 to 5 percent of current land values.

Land value	\$3,500	\$4,500
Rate of return	4-5%	4-5%
Rental rate	\$140-\$175	\$180-\$225

Estimates of current land market values are available in *Information Files Farmland Value Survey - Iowa State University* and *Farmland Value Survey - Realtor's Land Institute*. However, this method is rather imprecise, especially during periods of rapidly changing land values.

Crop Share Equivalent

Another way of calculating cash rental rates is by comparing the rental rate to the return that would be received from a 50-50 crop-share lease. With a crop-share lease, the owner's return is automatically adjusted by changes in yield, selling price, and input amounts and prices. However, to compute a cash rental rate using this method, estimates of yields, selling prices, and input costs must be made for the coming year, which is sometimes difficult to do.

An example using this method is presented in Table 2. Use five-year or ten-year average yields and current prices for harvest delivery. If prices are below the USDA county loan rate, use the loan rate instead, to reflect potential loan deficiency payments. Next, include the landowner's half of the USDA direct payments for the coming year. You may want to refer to *Information File Commodity Programs for Crops*. Then subtract the landowner's half of the seed, fertilizer, pesticides and other shared expenses.

Table 1. Average Iowa Cash Rent as a Percent of Gross Crop Value

Year	Average cash rent paid	Average gross crop value, \$/acre (Iowa		Average cash rent as % of	
	per acre	average yield x price)*		gross crop value	
	Iowa	Corn	Soybeans	Corn	Soybeans
2000	\$ 120	\$ 272	\$ 229	44%	52%
2001	\$ 122	\$ 276	\$ 231	44%	53%
2002	\$ 124	\$ 363	\$ 256	34%	48%
2003	\$ 128	\$ 339	\$ 228	38%	56%
2004	\$ 131	\$ 371	\$ 266	35%	49%
2005	\$ 135	\$ 337	\$ 297	40%	46%
2006	\$ 137	\$ 460	\$ 300	30%	46%
2007	\$ 150	\$ 595	\$ 495	25%	30%
2008	\$ 177	\$ 744	\$ 463	24%	38%
2009	\$ 185	\$ 672	\$ 488	28%	38%
Average	\$ 141	\$ 443	\$ 325	34%	46%

*Iowa average yield x Oct.-Dec. average cash price for Iowa (National Ag Statistics Service)

Table 2. Crop Share Equivalent

Income	Corn	Soybeans
Yield (1/2)	80 bu.	24 bu.
Price	\$4.00	\$9.00
USDA payments, per acre (1/2)	\$12	\$12
Total income to owner	\$332	\$228
Expenses		
Seed (1/2)	\$47	\$27
Fertilizer (1/2)	85	48
Pesticides (1/2)	19	11
Crop insurance (1/2)	10	6
Drying and storage (1/2)	18	0
Miscellaneous (1/2)	4	4
Interest (1/2)	7	4
Total expenses paid by owner	\$190	\$100
Net return to owner	\$142	\$128

In the example, the landowner will receive a net return of \$142 and \$128 from corn and soybeans respectively. With a corn/soybean rotation, the average return will be $(142 + 128) / 2 = \$135$ per acre.

To compute a rental rate for your situation, use the worksheet on the following page or enter your figures into *Decision Tool Cash Rental Rate Estimation*.

Tenant’s Residual

Another approach is to calculate how much income the tenant has available for rent payments after subtracting all the tenant’s costs associated with producing the crop.

As in Table 2, you first need to estimate yields, selling prices, and government payments. Then subtract the operating expenses. Next, subtract the tenant’s cost of machinery and equipment ownership. This includes depreciation, a return on investment, insurance, and machinery housing. Some people contend that these costs (fixed costs) are incurred by the tenant whether the land is rented or not and need not be subtracted when determining a rental rate. But in the long run, these costs are incurred on all acres farmed and must be paid. Finally, a charge for the tenant’s labor

and management is subtracted. The remaining amount is available for the payment of cash rent.

Based on the example values in Table 3, \$153 is available for rent payment from corn production and \$158 from soybean production. With a corn/soybean rotation, the average amount available for rent payment is \$155.50 per acre.

Table 3. Tenant’s Residual

Income	Corn	Soybeans
Yield	160 bu.	48 bu.
Price	\$4.00	\$9.00
USDA payments, per acre	\$24	\$24
Total income	\$664	\$456
Operating costs		
Seed	\$94	\$54
Fertilizer	170	96
Pesticides	38	22
Crop insurance	20	12
Drying and storage	36	0
Miscellaneous	9	9
Fuel and repairs	30	23
Interest	14	8
Total	\$411	\$224
Machinery ownership	\$47	33
Labor	29	27
Management (estimate at 5% of other costs)	24	14
Total costs	\$511	\$298
Residual to tenant	\$153	\$158

Remember, no allowance has been made for risk due to variations in crop prices and yields. With a cash rent lease, the tenant assumes all of the risk. So the tenant should be compensated for assuming this risk. Do this by either using conservative price and yield estimates or adjusting the rental rate downward.

To estimate a rental rate for your own situation, use the worksheet on the following page or *Decision Tool Cash Rental Rate Estimation*.

... and justice for all

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Crop Land Cash Rent Worksheet

<u>Gross Income</u>	<u>Corn – per acre</u>	<u>Soybeans – per acre</u>
Expected yield, bu. per acre	_____	_____
Expected selling price, \$ per bu.	_____	_____
Revenue from sales (bu. x price)	_____	_____
USDA direct payments	_____	_____
Total gross income	_____	_____
<u>Production Costs</u>		
Seed	_____	_____
Fertilizer	_____	_____
Lime	_____	_____
Pesticides	_____	_____
Crop insurance	_____	_____
Interest and miscellaneous	_____	_____
Custom hire	_____	_____
Fuel, repairs	_____	_____
Machinery ownership	_____	_____
Drying, storage, hauling	_____	_____
Labor	_____	_____
Total of all nonland costs	_____	_____

A. Share of Gross Income

Corn: Gross income _____ x share _____% (30 to 40%) = \$ _____/acre

Soybeans: Gross income _____ x share _____% (40 to 50%) = \$ _____/acre

B. Tenant's Residual

Corn: Gross income _____ minus nonland costs _____ = \$ _____/acre

Soybeans: Gross income _____ minus nonland costs _____ = \$ _____/acre

C. Expected Yield

Corn: Expected yield _____ bu./acre x \$ _____ per bu. for rent = \$ _____/acre

Soybeans: Expected yield _____ bu./acre x \$ _____ per bu. for rent = \$ _____/acre

D. Corn Suitability Rating Index

CSR index: Average CSR _____ x \$ _____ per point for rent = \$ _____/acre

E. Percent of Land Value

Current market value of land \$ _____/acre x _____% return expected = \$ _____/acre