

***Assistance with Decision
Points:
Built-in Analysis Using the
Ag Budget Calculator***



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CAP Webinar: February 16, 2023

Presented by:

Glennis McClure

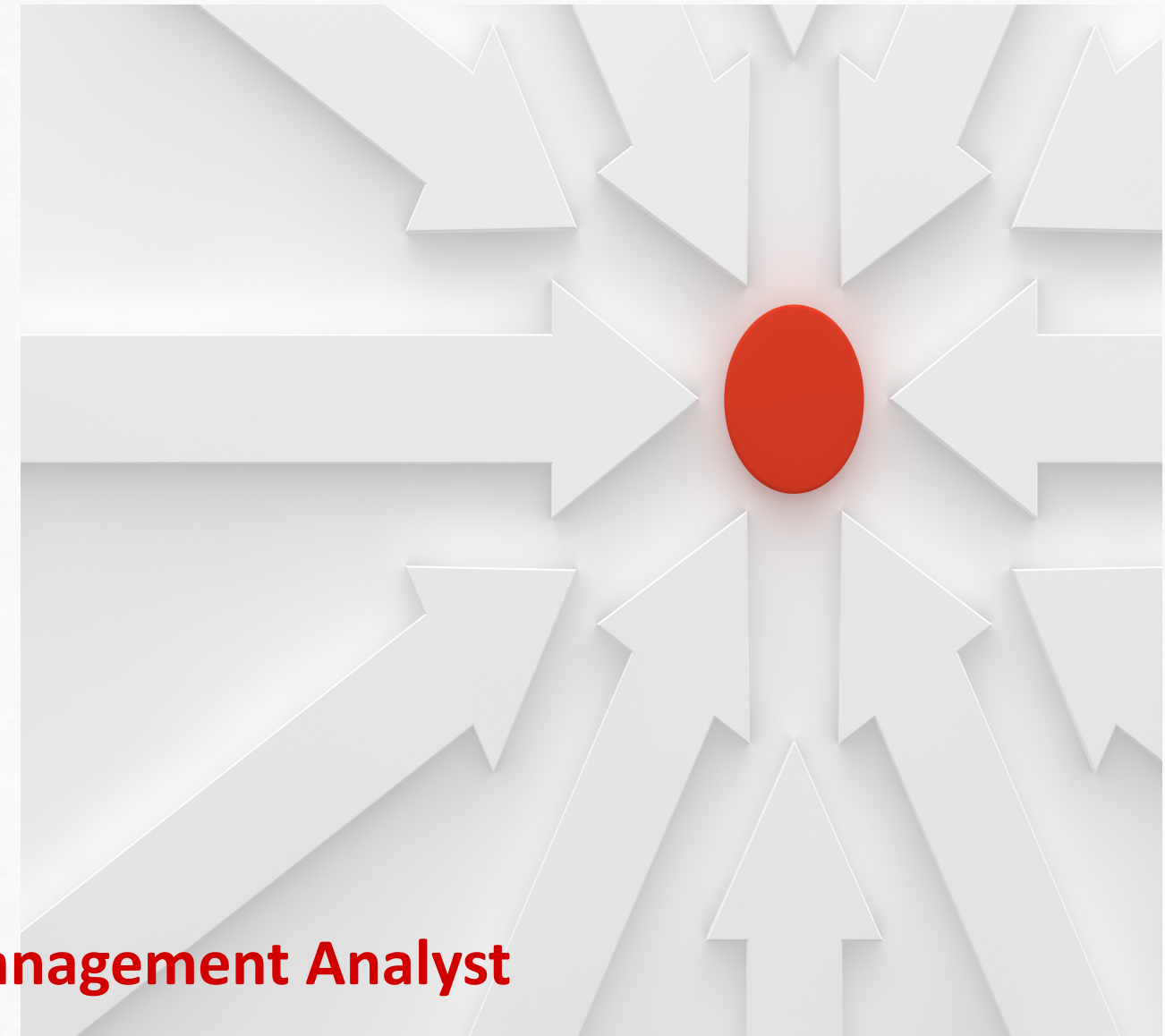
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Pricing / Marketing Decisions

- ✓ **Cash Costs**
- ✓ **Economic or Total Costs**
- ✓ **Operating Costs**
- ✓ **Total Operating and Ownership Costs**



Ag Budget Calculator Enterprise Budget Reports

2023 Feb Corn - North Qtr (dryland)
Total acres: 150 Yield per acre: 160 bushels

Economic Enterprise Budget

Category	amt applied	cost per unit	cost per acre	Enterprise Total
Revenue		Value / bushel	Value / acre	Total
Value of Production		\$6.75/bu	\$1,080.00	\$162,000.00
▼ Additional Revenue			\$0.00	\$0.00
Government Income			\$0.00	\$0.00
Insurance Income			\$0.00	\$0.00
Crop Residue Income			\$0.00	\$0.00
Other Income			\$0.00	\$0.00
Total Gross Revenue		\$6.75/bu	\$1,080.00	\$162,000.00
Operating Costs	Amount / acre	Cost / unit	Cost / acre	Total
▼ Seed			\$65.33	\$9,798.75
Corn Seed Bt, ECB, & RIB	20.1 kseed	\$3.25 / kseed	\$65.33	\$9,799.50
▼ Fertilizer			\$124.20	\$18,630.00
10-34-0	6 gallon	\$4.20 / gallon	\$25.20	\$3,780.00
32-0-0	90 lbsN	\$1.10 / lbsN	\$99.00	\$14,850.00
▼ Pesticide			\$90.47	\$13,570.51
Crop Oil Concentrate	2.4 pint	\$15.00 / gallon	\$4.50	\$675.00
UAN	2.4 pint	\$2.55 / gallon	\$0.77	\$115.50
21-0-0-24S	3.35 pound	\$0.60 / pound	\$2.01	\$301.50
Brigade 2EC	0.512 ounce	\$1.17 / ounce	\$0.60	\$90.00
Mustang Maxx	0.2 ounce	\$1.48 / ounce	\$0.30	\$45.00
2,4-D Ester LV4	1 pint	\$21.00 / gallon	\$2.63	\$394.50
Acuron	2.5 quart	\$57.00 / gallon	\$35.63	\$5,344.50
Status	4 ounce	\$4.70 / ounce	\$18.80	\$2,820.00
Glyphosate 5# w/ Surfactant	32 ounce	\$57.00 / gallon	\$14.25	\$2,137.50
Roundup PowerMax 3	25.6 ounce	\$55.00 / gallon	\$11.00	\$1,650.00
▼ Custom Services			\$28.30	\$4,245.00
Spray Insecticide	100 %	\$7.50 / acre	\$7.50	\$1,125.00
Truck Grain	160 bushel	\$0.13 / bushel	\$20.80	\$3,120.00
▼ Labor			\$29.51	\$4,427.25
Labor (Paid)			\$8.64	\$1,295.77
Labor (Unpaid)			\$5.55	\$831.88
Reconciled Labor			\$15.33	\$2,299.60
▼ Fuel and Energy			\$28.45	\$4,267.16
Originally Allocated			\$21.51	\$3,226.16
Reconciled Difference			\$6.94	\$1,041.00
▼ Repairs and Maintenance			\$14.90	\$2,235.00
Originally Allocated			\$21.37	\$3,205.64
Reconciled Difference			\$-6.47	\$-970.64
▼ Other:			\$53.36	\$8,004.00
Crop Insurance			\$38.00	\$5,700.00
Crop Marketing		\$0.03	\$4.80	\$720.00
Crop Scouting			\$8.00	\$1,200.00
Crop Drying		\$0.02	\$2.56	\$384.00
Crop Storage		\$0.00	\$0.00	\$0.00
Other Materials			\$0.00	\$0.00
Interest on Operating Capital			\$20.02	\$3,002.80
Total Operating Costs		\$2.84/bu	\$454.54	\$68,180.47

Category	amt applied	cost per unit	cost per acre	Enterprise Total
Net Return Above Total Operating		\$3.91/bu	\$625.46	\$93,819.53
Ownership and Overhead Costs		Cost / bushel	Cost / acre	Total
General Overhead			\$35.00	\$5,250.00
Facility Cash Costs			\$13.81	\$2,070.81
Vehicle Cash Costs			\$17.20	\$2,580.17
▼ Land Rent:			\$0.00	\$0.00
Cash Rent			\$0.00	\$0.00
Allocated Land Rent			\$0.00	\$0.00
▼ Real Estate Taxes:			\$112.00	\$16,800.00
Direct R.E. Taxes			\$112.00	\$16,800.00
Indirect R.E. Taxes			\$0.00	\$0.00
Equipment Depreciation			\$47.84	\$7,175.44
Facility Depreciation			\$5.38	\$807.35
Equipment Opportunity Cost			\$16.16	\$2,423.36
Facility Opportunity Cost			\$2.77	\$415.37
Land Opportunity Cost			\$200.00	\$30,000.00
Total Ownership and Overhead Costs		\$2.81/bu	\$450.15	\$67,522.50
Total Economic Cost		\$5.65/bu	\$904.69	\$135,702.97
Net Return Above Total Costs		\$1.10/bu	\$175.31	\$26,297.03



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How Do Overhead Costs Fit In?

- Accounting
- Legal
- Office Supplies
- Dues/Subscriptions
- Utilities
- Plus, more...



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Allocate Overhead Costs to Your Various Enterprises



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Allocate Overhead Expenses in ABC

Use **Advanced Overhead Allocation** to enter specific cash overhead costs and then allocate those costs across your enterprise budgets.



Check here to use Advanced Overhead Allocation

Advanced Overhead Allocation

Enter the estimated annual cost of your cash overhead expenses (accounting, legal, supplies, office). After you make changes to the total cost for expense categories, click the 'Save Costs' button to update your records before allocating expenses to your enterprises.

All or part of the overhead expenses may be allocated to various crops or livestock enterprises. If any portion of an expense has not yet been allocated, that amount will appear in the 'Unallocated' column. Click on an expense category name or an unallocated amount to open the allocation calculator for that overhead expense.

Click on a category name to allocate costs

Category	Total Annual Cost	Amount Allocated	Unallocated
Accounting	\$ 1600	\$0.00	\$1,600.00
Legal	\$ 650	\$0.00	\$650.00
Office	\$ 1200	\$0.00	\$1,200.00
Supplies	\$ 450	\$0.00	\$450.00
Utilities	\$ 3600	\$0.00	\$3,600.00
Personal Property Taxes	\$ 2200	\$0.00	\$2,200.00
Property and Liability Insurance	\$ 3200	\$0.00	\$3,200.00
Interest on Liabilities	\$ 26000	\$0.00	\$26,000.00
Non-Farmland Rent	\$ 1200	\$0.00	\$1,200.00

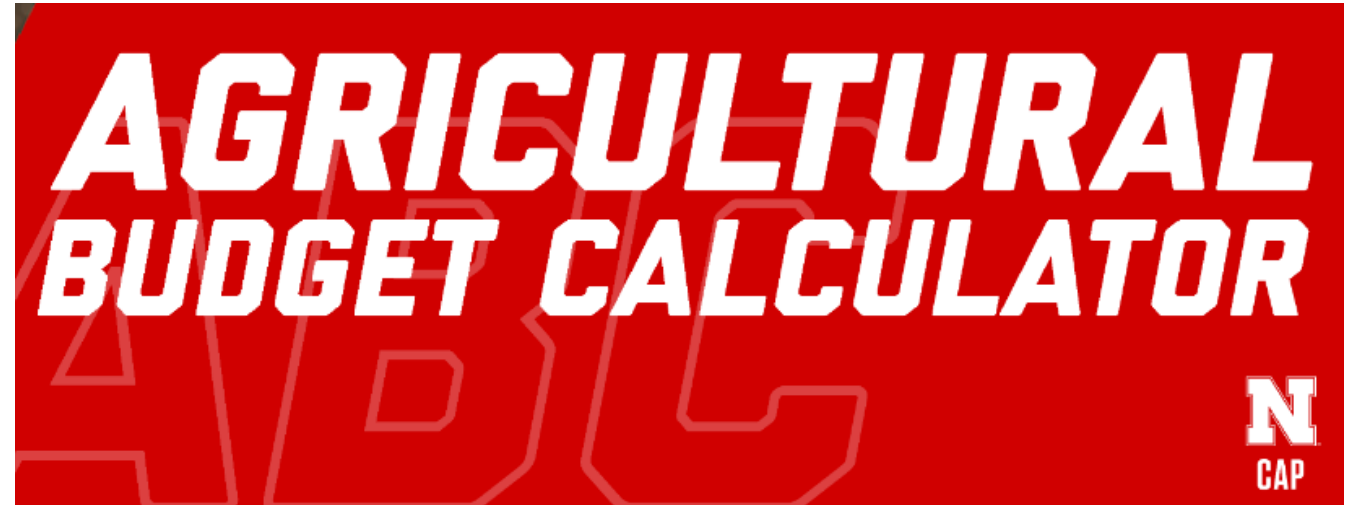
Comparing Crop Enterprises

Equate the net income of each alternative crop enterprise with a base crop



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ABC Crop Comparison Analysis



Alternative Crop #1 Corn - dryland (McClure cash rent) ▼

Alternative Crop #2 Soybeans #59, Dryland, No Till (McClure cash rented) ▼

Alternative Crop #3 (No crop selected) ▼

Alternative Crop #4 (No crop selected) ▼

Base crop enterprise: **Corn - North Qtr (dryland)**

Net return above operating costs: **\$625.79**

Base crop yield: **160 bushels**

Base crop price: **\$6.75 / bushel**

Gross Margin Equivalent Yield Analysis

Alternative Crop	Projected Price	Equivalent Yield*
<u>Corn - dryland (McClure cash rent)</u>	@ \$6.75 / bu	157.0 bu
<u>Soybeans #59, Dryland, No Till (McClure cash rented)</u>	@ \$13.00 / bu	71.5 bu

* Given the projected price, you would have to produce this yield per acre to match the gross margin of the base crop.

Gross Margin Equivalent Price Analysis

Alternative Crop	Projected Yield	Equivalent Price*
<u>Corn - dryland (McClure cash rent)</u>	@ 170 bu/ac	\$6.24 / bu
<u>Soybeans #59, Dryland, No Till (McClure cash rented)</u>	@ 65 bu/ac	\$14.31 / bu

* Given the projected yield, you would have to receive this price to match the gross margin of the base crop.

Equipment Purchases Vs. Custom Hire

- Inputting machinery data to estimate operation costs
- Comparing your cost per acre versus current custom rates



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Cost per Hour of Operation Details

Power Unit Details

Big Red

Budget Year: 2023 Feb

Summary

Usage

Edit

Big Red

List Price:
\$488,798.00

Purchase Price:
\$192,926.00

Max PTO:
100

Est. Hours / Year:
600 Hrs

Repair Cost / Hour:
\$8.33

Depreciation / Hour:
\$14.10

Fuel Type:
Diesel

Fuel Used / Hour:
10 Gallons

Fuel Cost / Hour:
\$38.00



Implement Costs

Implement Details

Boom Sprayer

Budget Year: 2023 Feb

Summary

Usage

Edit

Boom Sprayer

Purchase Price:

\$30,000.00

List Price:

\$48,000.00

Coverage Rate:

24 Acres/Hr

Est. Acres / Year:

2500 Acres

Repair Cost / Acre:

\$0.43

Depreciation / Acre:

\$0.69



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Field Operation Costs

2023 Feb Corn - dryland (McClure cash rent)

Total acres: 155 Yield per acre: 170 bushels

Field Operation Costs / Acre

Field Operation	Labor	Fuel	Repairs	Deprec.	Opp.	Total / acre
Spray Spring Burndown Herbicide	Labor	Fuel	Repairs	Deprec.	Opp.	Total / acre
Big Red	1.25	1.82	0.35	0.59	0.36	
Boom Sprayer			0.43	0.69	0.26	
	\$1.25	\$1.82	\$0.78	\$1.28	\$0.61	\$5.74
Spray Fertilizer	Labor	Fuel	Repairs	Deprec.	Opp.	Total / acre
UNL Medium Tractor >80 hp	0.83	0.96	0.51	0.54	0.18	
UNL Boom Sprayer			0.80	0.85	0.44	
	\$0.83	\$0.96	\$1.31	\$1.39	\$0.62	\$5.10
Plant - No Till	Labor	Fuel	Repairs	Deprec.	Opp.	Total / acre
Big Red	3.03	4.37	0.83	1.41	0.86	
UNL Planter - no till			7.61	2.18	1.37	
	\$3.03	\$4.37	\$8.44	\$3.59	\$2.23	\$21.66
Spray Herbicide	Labor	Fuel	Repairs	Deprec.	Opp.	Total / acre
Big Red	1.25	1.82	0.35	0.59	0.36	
Boom Sprayer			0.43	0.69	0.26	
	\$1.25	\$1.82	\$0.78	\$1.28	\$0.61	\$5.74
Spray Herbicide	Labor	Fuel	Repairs	Deprec.	Opp.	Total / acre
UNL Medium Tractor >80 hp	1.00	1.17	0.61	0.66	0.22	
Boom Sprayer			0.34	0.55	0.20	
	\$1.00	\$1.17	\$0.96	\$1.21	\$0.42	\$4.76
Combine	Labor	Fuel	Repairs	Deprec.	Opp.	Total / acre
UNL Combine 3	2.52	5.13	5.56	14.83	3.51	
UNL Corn Head 3			1.00	7.67	2.32	
	\$2.52	\$5.13	\$6.56	\$22.50	\$5.84	\$42.54
Grain Cart	Labor	Fuel	Repairs	Deprec.	Opp.	Total / acre
UNL Large Tractor >150 hp	4.30	6.24	1.22	5.04	2.30	
UNL Grain Cart			1.34	1.13	0.59	
	\$4.30	\$6.24	\$2.56	\$6.17	\$2.89	\$22.17
Operations Totals:	\$14.18	\$21.51	\$21.37	\$37.42	\$13.23	\$107.72



Sensitivity Analysis & Breakeven What-if's

- Expected crop yield changes
- Price changes

Breakeven Analysis

☐ View Breakeven Crop Prices

☒ View Breakeven Crop Yields

Breakeven Yield is the yield needed to cover costs based on various price levels and other income from the crop enterprise.

Choose to view breakeven prices above cash costs only, or above economic (cash and non-cash) costs.

☐ Cash Only

☒ Economic

☒ Adjust costs to include income beyond crop sales

% change in Crop Price:

15



%

Breakeven Yields Above Economic Costs

	-15%	Base Price	+15%
Cost Category	\$5.74	\$6.75	\$7.76
Breakeven Above Operating Costs	76.7	65.2	56.7
Breakeven Above Ownership Costs	54.1	46.0	40.0
Breakeven Above Ownership and Operating Costs	130.8	111.2	96.7



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Sensitivity Chart - Expected Net Return

Total Cost per Acre:
Expected Crop Price:
Expected Yield:
Expected Crop Revenue:
Additional Revenue:
Expected Net Return:

\$889.10
\$6.75 / bushel
160 bushel / acre
\$1,080.00 / acre
\$0.00 / acre
\$190.90 / acre

Check to include income beyond crop sales:
☒ Additional income:

\$0/ acre

		Sales Price (\$/bushel)										
Yield/Acre		-25%	-20%	-15%	-10%	-5%	0%	5%	10%	15%	20%	25%
(bushels)		\$5.06	\$5.40	\$5.74	\$6.08	\$6.41	\$6.75	\$7.09	\$7.43	\$7.76	\$8.10	\$8.44
-25%	120.00	\$-281.60	\$-241.10	\$-200.60	\$-160.10	\$-119.60	\$-79.10	\$-38.60	\$1.90	\$42.40	\$82.90	\$123.40
-20%	128.00	\$-241.10	\$-197.90	\$-154.70	\$-111.50	\$-68.30	\$-25.10	\$18.10	\$61.30	\$104.50	\$147.70	\$190.90
-15%	136.00	\$-200.60	\$-154.70	\$-108.80	\$-62.90	\$-17.00	\$28.90	\$74.80	\$120.70	\$166.60	\$212.50	\$258.40
-10%	144.00	\$-160.10	\$-111.50	\$-62.90	\$-14.30	\$34.30	\$82.90	\$131.50	\$180.10	\$228.70	\$277.30	\$325.90
-5%	152.00	\$-119.60	\$-68.30	\$-17.00	\$34.30	\$85.60	\$136.90	\$188.20	\$239.50	\$290.80	\$342.10	\$393.40
0%	160.00	\$-79.10	\$-25.10	\$28.90	\$82.90	\$136.90	\$190.90	\$244.90	\$298.90	\$352.90	\$406.90	\$460.90

Risk Analysis Using Various Crop Insurance Coverage Levels



- Estimates risk exposure based on yield or price changes for corn and soybeans in Nebraska
- Provides some historical data by crop reporting district
- Projected disaster budget (how is net return affected)



Risk Analysis

How to think about rare financially devastating events?

[Read More](#)

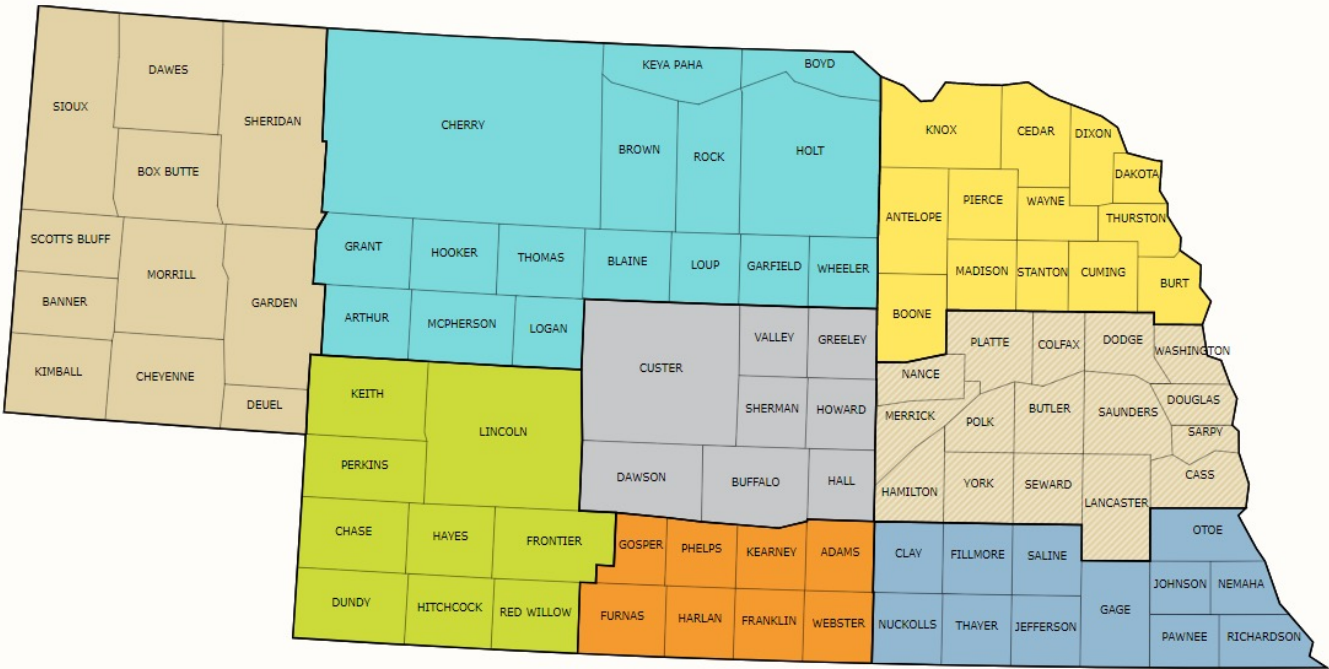
Why consider the role of risk?

Failure to can lead to financial ruin.

[Read More](#)

Click on the county where this enterprise is located to view and analyze risk exposure.

↓ Click on your county below to begin ↓



LANCASTER COUNTY

Crop Reporting District: East

Corn - dryland (McClure cash rent)
(Non-irrigated Corn)

☒ View Yield Exposure Values

☐ View Price Exposure Values

Select a yield estimate to open the Disaster Revenue Calculator.

Open calculator with Expected Yield

Expected Yield:

170 bu/acre

Represents the yield you expect to have at harvest. You entered this information when creating this enterprise budget.

Open calculator with NASS Average

NASS Average:

164.8 bu/acre

Represents the National Agricultural Statistics Service (NASS) expected yield for the Crop Reporting District (CRD) you are located in

Open calculator with Regional Low

Regional Low:

83.4 bu/acre

Represents the lowest CRD yield generated from looking at historical NASS yields.

The lowest yield in your CRD came in 2012.

[What happened in 2012?](#)



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Projected Disaster Budget

2023 Feb Corn - dryland (McClure cash rent)
Total acres: 155

Projected Disaster Values

Risk values you selected from the Disaster Revenue Protection Calculator are used to generate projected budget outcomes.

Risk Yield / Acre: **90 bu**

Risk Price / Bushel: **\$6.50**

Insurance Premium / Acre: **\$9.64**

Insurance Indemnity / Acre: **\$227.81**

	Projected Disaster Outcomes		Original Projections	
	Per Acre	Total	Per Acre	Total
Total Gross Revenue	\$812.81	\$125,985.94	\$1,105.00	\$171,275.00
Total Operating Costs	\$407.80	\$63,209.33	\$439.84	\$68,175.44
Net Return Above Total Operating	\$405.01	\$62,776.60	\$665.16	\$103,099.56
Total Economic Costs	\$718.46	\$111,360.65	\$750.50	\$116,326.76
Net Return Above Total Costs	\$94.36	\$14,625.29	\$354.50	\$54,948.24

Please note: In addition to crop insurance premiums entered in this disaster budget, there may be other changes to costs associated with a disaster event which are not accounted for here, e.g. harvest and hauling costs.



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Reports to Help Plan Input Purchases

List of material inputs needed with:

- Amounts,
- Price per unit, and
- Total projected costs for each material input



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Farm Detail Reports ?

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Select Budget Year: 2023 Feb

[Return to Whole Farm](#)

[Labor](#)

[Power Units](#)

[Implements](#)

[Materials](#)

Annual Material Use: 2023 Feb

Material Name	Category	Price	Total Used	Total Cost
21-0-0-24S	Additive	\$0.60 / pound	3,141.40 pounds	\$1,884.84
Crop Oil Concentrate	Additive	\$15.00 / gallon	128.63 gallons	\$1,929.38
UAN	Additive	\$2.55 / gallon	144.15 gallons	\$367.58
10-34-0	Fertilizer	\$4.20 / gallon	2,676.00 gallons	\$11,239.20
32-0-0	Fertilizer	\$1.10 / lbsN	27,720.00 lbsNs	\$30,492.00
32-0-0 (Applied by R2)	Fertilizer	\$1.10 / lbsN	27,600.00 lbsNs	\$30,360.00
Aproach Prima	Fungicide	\$290.00 / gallon	2.91 gallons	\$842.81
Stratego YLD	Fungicide	\$936.00 / gallon	1.29 gallons	\$1,210.95
2,4-D Ester LV4	Herbicide	\$21.00 / gallon	93.25 gallons	\$1,958.25
Acuron	Herbicide	\$57.00 / gallon	278.75 gallons	\$15,888.75
Armezon Pro	Herbicide	\$1.33 / ounce	1,932.00 ounces	\$2,569.56
Atrazine 90 DF	Herbicide	\$4.50 / pound	138.00 pounds	\$621.00
Authority MTZ	Herbicide	\$40.00 / pound	300.00 pounds	\$12,000.00
Glyphosate 5# w/ Surfactant	Herbicide	\$57.00 / gallon	336.50 gallons	\$19,180.50

Building an Annual Cash Flow Using ABC



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Start with cash flow needs

Adjust to reflect estimated cash payments and receipts



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ABC Cash Flow Feature

Production Year Cash Flow Summary:

Category	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Beginning Cash	\$6,500	\$6,500	\$29,390	\$20,327	\$-74,304	\$-166,463	\$-181,999	\$-193,371	\$-175,301	\$-162,326	\$-148,298	\$-148,298
<u>Revenue</u>	--	\$22,890	--	--	--	--	--	\$19,440	\$19,440	\$19,440	--	\$920,120
<u>Labor</u>	--	--	\$477	\$1,858	\$1,792	\$216	\$2,595	\$528	\$3,135	\$1,910	--	--
<u>Fuel</u>	--	--	\$762	\$2,883	\$23,500	\$288	\$3,894	\$843	\$3,330	\$3,502	--	--
<u>Materials</u>	--	--	\$7,824	\$89,890	\$66,867	\$15,032	\$4,883	--	--	--	--	--
<u>Overhead</u>	--	--	--	--	--	--	--	--	--	--	--	--
Total Expenses	--	--	\$9,063	\$94,631	\$92,159	\$15,536	\$11,372	\$1,371	\$6,465	\$5,412	--	--
Ending Cash Balance	\$6,500	\$29,390	\$20,327	\$-74,304	\$-166,463	\$-181,999	\$-193,371	\$-175,301	\$-162,326	\$-148,298	\$-148,298	\$771,822

Irrigation cost information

What does it cost to add an inch of water?



Decision Point

What is my cost to add another inch of water?

Estimated cost to apply one additional inch of water

Enterprise	Fuel Cost	Labor Cost ¹	Combined Cost ²
Irr. Soybeans - Jones place	\$321.16	\$103.13	\$424.29

1 - 'Labor Cost' is based on the calculated cost per hour for the assigned worker(s). For workers who are salaried or unpaid, the added cost may be 0.

2 - 'Combined Cost' estimate does not include any increases to repairs, ownership, or opportunity costs that may result from applying more water.



Sign up for an account and start using the
FREE Ag Budget Calculator program.

agbudget.unl.edu

For more information and workshop
schedule visit: cap.unl.edu/abc

Thank you for participating!



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