

The following pages represent a single crop budget but at 3 levels of detail and for 3 planning yield levels

Abstract level budget - The most summarized version of a budget. (e.g., a single line represents all fertilizer costs)

Summary level budget - A more detailed crop budget. (e.g., Fertilizer is broken out into N, P, K)

Detailed level budget - All the detail for producing a crop. (e.g., The specific fertilizers are listed).

Middle yield - The basic crop budget for a region and crop.

A detailed, summary, and abstract level budget are included for the middle yield.

Low and High yield - Budgets based on the middle yield but with a lower/higher yield goal (and irrigation level).

These high and low yield level budgets only include the abstract level budgets.

The 2 tables below are sensitivity tables that show the returns over direct costs and the returns over total costs

The tables have the basic budget price in the middle column

On either side of the base price are potential prices 5% and 10% above and below this base price

For irrigated budgets the 3 yield levels are also associated with different irrigation levels

8.5 inches of water for LOW yields

10.0 inches of water for MIDDLE yields

11.5 inches of water for HIGH yields

TABLE 1. RETURNS OVER DIRECT COSTS

| | | Prices | | | | | |
|--------|----------|--------|--------|--------|--------|--------|--------------|
| | | \$4.55 | \$4.81 | \$5.06 | \$5.31 | \$5.57 | |
| | 144.0 ll | \$375 | \$412 | \$448 | \$484 | \$521 | Low yield |
| Yields | 160.0 ll | \$411 | \$452 | \$492 | \$533 | \$573 | Middle yield |
| | 172.0 ll | \$471 | \$514 | \$558 | \$601 | \$645 | High yield |

TABLE 2. RETURNS OVER TOTAL COSTS

| | | Prices | | | | | |
|--------|----------|--------|--------|--------|--------|--------|--------------|
| | | \$4.55 | \$4.81 | \$5.06 | \$5.31 | \$5.57 | |
| | 144.0 ll | -\$58 | -\$22 | \$15 | \$51 | \$87 | Low yield |
| Yields | 160.0 ll | -\$22 | \$18 | \$59 | \$99 | \$140 | Middle yield |
| | 172.0 ll | \$37 | \$81 | \$124 | \$168 | \$211 | High yield |

2024 Irrigated Grain Sorghum (center-pivot) Cost-Return Budget

-----South Central KS - MIDDLE YIELDS

Gregg Ibendahl, Daniel O'Brien, and Sarah Lancaster

Budget abstract

Date: Nov-01-2023

| item | unit | price | quantity | amount | Sub-total | your farm |
|---|------|-------------------------------|----------|----------|-----------|-----------|
| INCOME | | | | | | |
| Product | | | | | | |
| Grain Sorghum - South Central KS | bu | \$5.06 | 160.00 | \$809.65 | \$809.65 | _____ |
| --TOTAL INCOME-- | | | | | \$809.65 | _____ |
| DIRECT EXPENSES | | | | | | |
| Additional labor | | | | | \$0.93 | _____ |
| Crop consulting | | | | | \$7.28 | _____ |
| Crop insurance | | | | | \$27.25 | _____ |
| Custom Operations | | | | | \$18.18 | _____ |
| Diesel | | | | | \$14.82 | _____ |
| Fertilizers | | | | | \$112.93 | _____ |
| Herbicides | | | | | \$46.55 | _____ |
| Irrigation energy (NG) | | | | | \$15.28 | _____ |
| Irrigation labor | | | | | \$6.80 | _____ |
| Miscellaneous | | | | | \$12.10 | _____ |
| Operator labor | | | | | \$7.08 | _____ |
| Repair & Maintenance | | | | | \$17.77 | _____ |
| Seeds | | | | | \$18.12 | _____ |
| Interest on operating capital | | 8% percent on direct expenses | | | \$12.20 | _____ |
| --TOTAL DIRECT EXPENSES-- | | | | | \$317.28 | _____ |
| -----Total direct expenses per bu \$1.98 | | | | | | |
| FIXED EXPENSES | | | | | | |
| Cash rent | | | | | \$195.00 | _____ |
| Capital recovery (depreciation + interest) | | | | | \$238.43 | _____ |
| --TOTAL FIXED EXPENSES-- | | | | | \$433.43 | _____ |
| -----Total expenses per bu \$4.69 | | | | | | |
| RETURNS ABOVE DIRECT EXPENSES | | | | | \$492.37 | ===== |
| RETURNS ABOVE TOTAL SPECIFIED EXPENSES | | | | | \$58.94 | |

10 acre-inches of water applied
 150 foot well depth
 \$ 1.53 fuel cost per acre-inch of water applied
 .4 Mcf of natural gas per acre-inch of water applied
 \$ 3.78 per Mcf for cost of natural gas
 4.04 Mcf of fuel used in total

2024 Irrigated Grain Sorghum (center-pivot) Cost-Return Budget

-----South Central KS - MIDDLE YIELDS

Gregg Ibendahl, Daniel O'Brien, and Sarah Lancaster

Summary page(s)

Date: Nov-01-2023

| item | unit | price | quantity | amount | Sub-total | your farm |
|----------------------------------|-------|--------|----------|----------|-----------|-----------|
| INCOME | | | | | | |
| Product | | | | | | |
| Grain Sorghum - South Central KS | bu | \$5.06 | 160.00 | \$809.65 | \$809.65 | _____ |
| --TOTAL INCOME-- | | | | | \$809.65 | _____ |
| DIRECT EXPENSES | | | | | | |
| Irrigation | ----- | | | | | _____ |
| Additional labor | | | | | | |
| Fertilizer application | ----- | | | \$0.14 | | |
| Planting | ----- | | | \$0.49 | | |
| Spraying | ----- | | | \$0.30 | \$0.93 | _____ |
| Crop consulting | ----- | | | \$7.28 | \$7.28 | _____ |
| Crop insurance | ----- | | | \$27.25 | \$27.25 | _____ |
| Custom Operations | | | | | | |
| Fertilizer application | ----- | | | \$18.18 | \$18.18 | _____ |
| Diesel | | | | | | |
| Fertilizer application | ----- | | | \$0.84 | | |
| Harvesting | ----- | | | \$6.75 | | |
| Hauling | ----- | | | \$3.95 | | |
| Planting | ----- | | | \$1.26 | | |
| Spraying | ----- | | | \$2.02 | \$14.82 | _____ |
| Fertilizers | | | | | | |
| Nitrogen | lbs | \$0.52 | 142.00 | \$73.25 | | |
| Phosphorus | lbs | \$0.64 | 62.00 | \$39.68 | | |
| Potassium | lbs | \$0.00 | 0.00 | \$0.00 | | |
| Lime | lbs | \$0.00 | 0.00 | \$0.00 | \$112.93 | _____ |
| Herbicides | ----- | | | \$46.55 | \$46.55 | _____ |
| Irrigation energy (NG) | | | | | | |
| Irrigation | ----- | | | \$15.28 | \$15.28 | _____ |
| Irrigation labor | | | | | | |
| Irrigation | ----- | | | \$6.80 | \$6.80 | _____ |
| Miscellaneous | ----- | | | \$12.10 | \$12.10 | _____ |
| Operator labor | | | | | | |
| Fertilizer application | ----- | | | \$0.44 | | |
| Harvesting | ----- | | | \$2.45 | | |
| Hauling | ----- | | | \$2.45 | | |
| Planting | ----- | | | \$0.79 | | |
| Spraying | ----- | | | \$0.95 | \$7.08 | _____ |
| Repair & Maintenance | | | | | | |
| Fertilizer application | ----- | | | \$1.43 | | |
| Harvesting | ----- | | | \$7.04 | | |
| Hauling | ----- | | | \$2.25 | | |
| Irrigation | ----- | | | \$3.60 | | |

2024 Irrigated Grain Sorghum (center-pivot) Cost-Return Budget

-----South Central KS - MIDDLE YIELDS

Gregg Ibendahl, Daniel O'Brien, and Sarah Lancaster

Summary page(s)

Date: Nov-01-2023

| item | unit | price | quantity | amount | Sub-total | your farm |
|--|-------------------------------|-------|----------|----------|-----------|-----------|
| Planting | ----- | | | \$2.82 | | |
| Spraying | ----- | | | \$0.62 | \$17.77 | _____ |
| Seeds | ----- | | | \$18.12 | \$18.12 | _____ |
| Interest on operating capital | 8% percent on direct expenses | | | \$12.20 | \$12.20 | _____ |
| --TOTAL DIRECT EXPENSES-- | | | | | \$317.28 | |
| -----Total direct expenses per bu \$1.98 | | | | | | |
| FIXED EXPENSES | | | | | | |
| Cash rent | ----- | | | \$195.00 | \$195.00 | _____ |
| Capital recovery (depreciation + interest) | | | | | | |
| Fertilizer application | ----- | | | \$3.68 | | |
| Harvesting | ----- | | | \$29.83 | | |
| Hauling | ----- | | | \$9.31 | | |
| Irrigation | ----- | | | \$182.82 | | |
| Planting | ----- | | | \$7.97 | | |
| Spraying | ----- | | | \$4.82 | \$238.43 | _____ |
| --TOTAL FIXED EXPENSES-- | | | | | \$433.43 | |
| -----Total expenses per bu \$4.69 | | | | | | |
| RETURNS ABOVE DIRECT EXPENSES | | | | | \$492.37 | |
| RETURNS ABOVE TOTAL SPECIFIED EXPENSES | | | | | \$58.94 | |

10 acre-inches of water applied
 150 foot well depth
 \$ 1.53 fuel cost per acre-inch of water applied
 .4 Mcf of natural gas per acre-inch of water applied
 \$ 3.78 per Mcf for cost of natural gas
 4.04 Mcf of fuel used in total

2024 Irrigated Grain Sorghum (center-pivot) Cost-Return Budget

-----South Central KS - MIDDLE YIELDS

Gregg Ibendahl, Daniel O'Brien, and Sarah Lancaster

Detailed budget page(s)

Date: Nov-01-2023

| item | unit | price | quantity | amount | Sub-total | your farm |
|---|------|---------|----------|----------|-----------|-----------|
| INCOME | | | | | | |
| Product | | | | | | |
| Grain Sorghum - South Central KS | bu | \$5.06 | 160.00 | \$809.65 | \$809.65 | _____ |
| Other | | | | | | |
| Govt payments, indemnity payments, etc. | | | | | | _____ |
| --TOTAL INCOME-- | | | | | \$809.65 | _____ |
| DIRECT EXPENSES | | | | | | |
| Irrigation | | | | | | |
| | hour | | ? | | | _____ |
| Additional labor | | | | | | |
| Fertilizer application | | | | | | |
| Nutrient applicator_60 ft with Tractor(200-249hp)CB | hour | \$15.00 | 0.01 | \$0.14 | | |
| Planting | | | | | | |
| NT Plant-Folding_24R-30 with Tractor(180-199hp)CB | hour | \$15.00 | 0.03 | \$0.49 | | |
| Spraying | | | | | | |
| Sprayer 800gal_80' 250hp with Sprayer 800gal | hour | \$15.00 | 0.02 | \$0.30 | \$0.93 | _____ |
| Crop consulting | | | | | | |
| ----- | | | | | | |
| Grain Sorghum_West_Irr | acre | \$7.28 | 1.00 | \$7.28 | \$7.28 | _____ |
| Crop insurance | | | | | | |
| ----- | | | | | | |
| Grain Sorghum_West_Irr | acre | \$27.25 | 1.00 | \$27.25 | \$27.25 | _____ |
| Custom Operations | | | | | | |
| Fertilizer application | | | | | | |
| Application of Anhydrous Ammonia | acre | \$18.18 | 1.00 | \$18.18 | \$18.18 | _____ |
| Diesel | | | | | | |
| Fertilizer application | | | | | | |
| Nutrient applicator_60 ft with Tractor(200-249hp)CB | gal | \$3.95 | 0.21 | \$0.84 | | |
| Harvesting | | | | | | |
| Header Wheat/Sorghum_25' Rigid with Combine (300-349 | gal | \$3.95 | 1.71 | \$6.75 | | |
| Hauling | | | | | | |
| Grain Cart Wht/Sor_700 bu with Tractor(180-199hp)CB | gal | \$3.95 | 1.00 | \$3.95 | | |
| Planting | | | | | | |
| NT Plant-Folding_24R-30 with Tractor(180-199hp)CB | gal | \$3.95 | 0.32 | \$1.26 | | |
| Spraying | | | | | | |
| Sprayer 800gal_80' 250hp with Sprayer 800gal | gal | \$3.95 | 0.51 | \$2.02 | \$14.82 | _____ |
| Fertilizers | | | | | | |
| ----- | | | | | | |
| Anhydrous | lb | \$0.41 | 146.00 | \$59.13 | | |
| MAP (11-52-0) | lb | \$0.40 | 120.00 | \$48.00 | | |
| Urea | lb | \$0.29 | 20.00 | \$5.80 | \$112.93 | _____ |
| - - - ACTUAL POUNDS - 142 lb - N, 62 lb - P, 0 lb - K | | | | | | |
| Herbicides | | | | | | |
| ----- | | | | | | |
| Bicep II Magnum | qt | \$11.47 | 1.60 | \$18.34 | | |
| Dicamba | oz | \$0.69 | 16.00 | \$11.11 | | |
| Glyphosate | oz | \$0.43 | 32.00 | \$13.81 | | |
| Huskie | oz | \$0.82 | 4.00 | \$3.29 | \$46.55 | _____ |
| Irrigation energy (NG) | | | | | | |

2024 Irrigated Grain Sorghum (center-pivot) Cost-Return Budget

-----South Central KS - MIDDLE YIELDS

Gregg Ibendahl, Daniel O'Brien, and Sarah Lancaster

Detailed budget page(s)

Date: Nov-01-2023

| item | unit | price | quantity | amount | Sub-total | your farm |
|--|-------|----------|----------|-------------------------------|-----------|-----------|
| Irrigation | | | | | | |
| Well, pump, and gearhead | ac-in | \$1.53 | 10.00 | \$15.28 | \$15.28 | _____ |
| Irrigation labor | | | | | | |
| Irrigation | | | | | | |
| Well, pump, and gearhead | hour | \$17.00 | 0.40 | \$6.80 | \$6.80 | _____ |
| Miscellaneous | | | | | | |
| ----- | | | | | | |
| Grain Sorghum_West_Irr | acre | \$12.10 | 1.00 | \$12.10 | \$12.10 | _____ |
| Operator labor | | | | | | |
| Fertilizer application | | | | | | |
| Nutrient applicator_60 ft with Tractor(200-249hp)CB | hour | \$20.00 | 0.02 | \$0.44 | | |
| Harvesting | | | | | | |
| Header Wheat/Sorghum_25' Rigid with Combine (300-349 | hour | \$20.00 | 0.12 | \$2.45 | | |
| Hauling | | | | | | |
| Grain Cart Wht/Sor_700 bu with Tractor(180-199hp)CB | hour | \$20.00 | 0.12 | \$2.45 | | |
| Planting | | | | | | |
| NT Plant-Folding_24R-30 with Tractor(180-199hp)CB | hour | \$20.00 | 0.04 | \$0.79 | | |
| Spraying | | | | | | |
| Sprayer 800gal_80' 250hp with Sprayer 800gal | hour | \$20.00 | 0.05 | \$0.95 | \$7.08 | _____ |
| Repair & Maintenance | | | | | | |
| Fertilizer application | | | | | | |
| Nutrient applicator_60 ft with Tractor(200-249hp)CB | Hour | \$77.85 | 0.02 | \$1.43 | | |
| Harvesting | | | | | | |
| Header Wheat/Sorghum_25' Rigid with Combine (300-349 | Hour | \$68.95 | 0.10 | \$7.04 | | |
| Hauling | | | | | | |
| Grain Cart Wht/Sor_700 bu with Tractor(180-199hp)CB | Hour | \$22.08 | 0.10 | \$2.25 | | |
| Irrigation | | | | | | |
| Well, pump, and gearhead | ac-in | ? | 10.00 | | | |
| Well, pump, and gearhead | ac-in | \$0.36 | 10.00 | \$3.60 | | |
| Planting | | | | | | |
| NT Plant-Folding_24R-30 with Tractor(180-199hp)CB | Hour | \$86.10 | 0.03 | \$2.82 | | |
| Spraying | | | | | | |
| Sprayer 800gal_80' 250hp with Sprayer 800gal | Hour | \$46.93 | 0.01 | \$0.62 | \$17.77 | _____ |
| Seeds | | | | | | |
| ----- | | | | | | |
| Milo - concep treated | lb | \$3.40 | 5.33 | \$18.12 | \$18.12 | _____ |
| Interest on operating capital | | | | | | |
| | | | | 8% percent on direct expenses | \$12.20 | _____ |
| --TOTAL DIRECT EXPENSES-- | | | | | | |
| -----Total direct expenses per bu | | | | | \$317.28 | |
| -----Total direct expenses per bu | | | | | | \$1.98 |
| FIXED EXPENSES | | | | | | |
| Cash rent | | | | | | |
| ----- | | | | | | |
| All crops_SC_Irr | acre | \$195.00 | 1.00 | \$195.00 | \$195.00 | _____ |
| Capital recovery (depreciation + interest) | | | | | | |
| Fertilizer application | | | | | | |
| Nutrient applicator_60 ft with Tractor(200-249hp)CB | Hour | \$200.66 | 0.02 | \$3.68 | | |
| Harvesting | | | | | | |
| Header Wheat/Sorghum_25' Rigid with Combine (300-349 | Hour | \$291.96 | 0.10 | \$29.83 | | |
| Hauling | | | | | | |
| Grain Cart Wht/Sor_700 bu with Tractor(180-199hp)CB | Hour | \$91.12 | 0.10 | \$9.31 | | |
| Irrigation | | | | | | |
| Irrigation - Center Pivot | acre | \$89.25 | 1.00 | \$89.25 | | |

2024 Irrigated Grain Sorghum (center-pivot) Cost-Return Budget

-----South Central KS - MIDDLE YIELDS

Gregg Ibendahl, Daniel O'Brien, and Sarah Lancaster

Detailed budget page(s)

Date: Nov-01-2023

| item | unit | price | quantity | amount | Sub-total | your farm |
|---|------|----------|----------|---------|-----------|-----------|
| Power unit | acre | \$17.67 | 1.00 | \$17.67 | | |
| Well, pump, and gearhead | acre | \$75.90 | 1.00 | \$75.90 | | |
| Planting | | | | | | |
| NT Plant-Folding_24R-30 with Tractor(180-199hp)CB | Hour | \$243.59 | 0.03 | \$7.97 | | |
| Spraying | | | | | | |
| Sprayer 800gal_80' 250hp with Sprayer 800gal | Hour | \$364.94 | 0.01 | \$4.82 | \$238.43 | _____ |
| --TOTAL FIXED EXPENSES-- | | | | | \$433.43 | |
| -----Total expenses per bu \$4.69 | | | | | | |
| RETURNS ABOVE DIRECT EXPENSES | | | | | \$492.37 | |
| RETURNS ABOVE TOTAL SPECIFIED EXPENSES | | | | | \$58.94 | |

10 acre-inches of water applied
 150 foot well depth
 \$ 1.53 fuel cost per acre-inch of water applied
 .4 Mcf of natural gas per acre-inch of water applied
 \$ 3.78 per Mcf for cost of natural gas
 4.04 Mcf of fuel used in total

2024 Irrigated Grain Sorghum (center-pivot) Cost-Return Budget

-----South Central KS - LOW YIELDS

Gregg Ibendahl, Daniel O'Brien, and Sarah Lancaster

Budget abstract

Date: Nov-01-2023

| item | unit | price | quantity | amount | Sub-total | your farm |
|--|------|-------------------------------|----------|----------|-----------|-----------|
| INCOME | | | | | | |
| Product | | | | | | |
| Grain Sorghum - South Central KS | bu | \$5.06 | 144.00 | \$728.69 | \$728.69 | _____ |
| | | | | | ----- | |
| --TOTAL INCOME-- | | | | | \$728.69 | _____ |
| DIRECT EXPENSES | | | | | | |
| Additional labor | | | | | \$0.93 | _____ |
| Crop consulting | | | | | \$7.28 | _____ |
| Crop insurance | | | | | \$27.25 | _____ |
| Custom Operations | | | | | \$0.00 | _____ |
| Diesel | | | | | \$14.82 | _____ |
| Fertilizers | | | | | \$101.64 | _____ |
| Herbicides | | | | | \$46.55 | _____ |
| Irrigation energy (NG) | | | | | \$12.99 | _____ |
| Irrigation labor | | | | | \$5.78 | _____ |
| Miscellaneous | | | | | \$12.10 | _____ |
| Operator labor | | | | | \$7.08 | _____ |
| Repair & Maintenance | | | | | \$17.23 | _____ |
| Seeds | | | | | \$16.31 | _____ |
| Interest on operating capital | | 8% percent on direct expenses | | | \$10.80 | _____ |
| | | | | | ----- | |
| --TOTAL DIRECT EXPENSES-- | | | | | \$280.74 | |
| -----Total direct expenses per bu \$1.95 | | | | | | |
| FIXED EXPENSES | | | | | | |
| Cash rent | | | | | \$195.00 | _____ |
| Capital recovery (depreciation + interest) | | | | | \$238.43 | _____ |
| | | | | | ----- | |
| --TOTAL FIXED EXPENSES-- | | | | | \$433.43 | |
| -----Total expenses per bu \$4.96 | | | | | | |
| | | | | | ===== | |
| RETURNS ABOVE DIRECT EXPENSES | | | | | \$447.95 | |
| RETURNS ABOVE TOTAL SPECIFIED EXPENSES | | | | | \$14.51 | |

8.5 acre-inches of water applied
 150 foot well depth
 \$ 1.53 fuel cost per acre-inch of water applied
 .4 Mcf of natural gas per acre-inch of water applied
 \$ 3.78 per Mcf for cost of natural gas
 3.44 Mcf of fuel used in total

2024 Irrigated Grain Sorghum (center-pivot) Cost-Return Budget

-----South Central KS - HIGH YIELDS

Gregg Ibendahl, Daniel O'Brien, and Sarah Lancaster

Budget abstract

Date: Nov-01-2023

| item | unit | price | quantity | amount | Sub-total | your farm |
|---|------|-------------------------------|----------|----------|-----------|-----------|
| INCOME | | | | | | |
| Product | | | | | | |
| Grain Sorghum - South Central KS | bu | \$5.06 | 172.00 | \$870.38 | \$870.38 | _____ |
| --TOTAL INCOME-- | | | | | \$870.38 | _____ |
| DIRECT EXPENSES | | | | | | |
| Additional labor | | | | | \$0.93 | _____ |
| Crop consulting | | | | | \$7.28 | _____ |
| Crop insurance | | | | | \$27.25 | _____ |
| Custom Operations | | | | | \$0.00 | _____ |
| Diesel | | | | | \$14.82 | _____ |
| Fertilizers | | | | | \$121.40 | _____ |
| Herbicides | | | | | \$46.55 | _____ |
| Irrigation energy (NG) | | | | | \$17.57 | _____ |
| Irrigation labor | | | | | \$7.82 | _____ |
| Miscellaneous | | | | | \$12.10 | _____ |
| Operator labor | | | | | \$7.08 | _____ |
| Repair & Maintenance | | | | | \$18.31 | _____ |
| Seeds | | | | | \$19.48 | _____ |
| Interest on operating capital | | 8% percent on direct expenses | | | \$12.02 | _____ |
| --TOTAL DIRECT EXPENSES-- | | | | | \$312.60 | _____ |
| -----Total direct expenses per bu \$1.82 | | | | | | |
| FIXED EXPENSES | | | | | | |
| Cash rent | | | | | \$195.00 | _____ |
| Capital recovery (depreciation + interest) | | | | | \$238.43 | _____ |
| --TOTAL FIXED EXPENSES-- | | | | | \$433.43 | _____ |
| -----Total expenses per bu \$4.34 | | | | | | |
| RETURNS ABOVE DIRECT EXPENSES | | | | | \$557.77 | ===== |
| RETURNS ABOVE TOTAL SPECIFIED EXPENSES | | | | | \$124.34 | |

11.5 acre-inches of water applied
 150 foot well depth
 \$ 1.53 fuel cost per acre-inch of water applied
 .4 Mcf of natural gas per acre-inch of water applied
 \$ 3.78 per Mcf for cost of natural gas
 4.65 Mcf of fuel used in total