Brown Soil Zone



Dark Brown Soil Zone



Black Soil Zone



Specialty Crops



# CROP PLANNING GUIDE 2019

*saskatchewan.ca/agriculture*

Government of Saskatchewan

# CROP PLANNING GUIDE 2019

Each year, Saskatchewan Agriculture makes available the Crop Planning Guide to help producers estimate the costs of producing various crops.

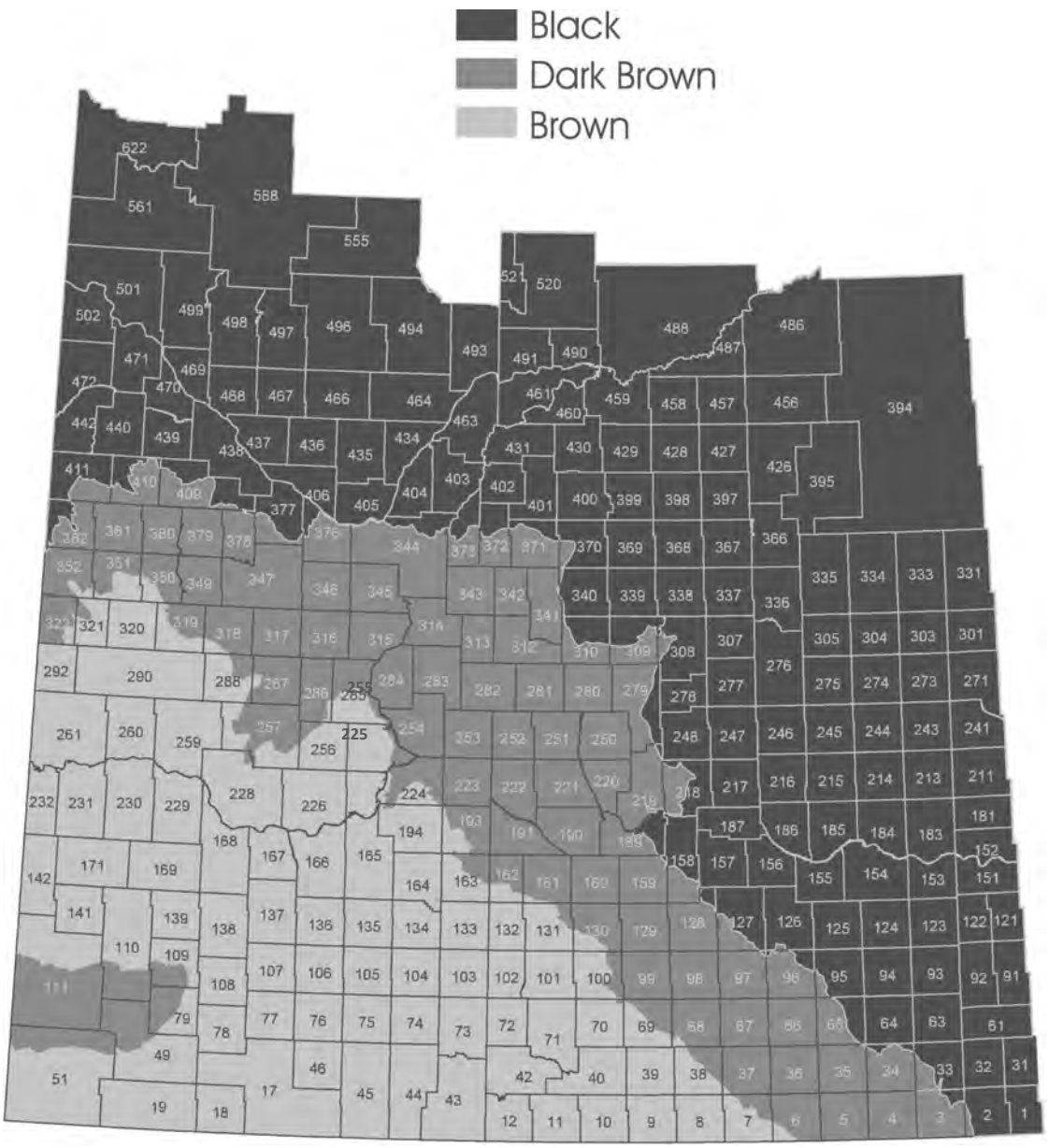
The Guide does not represent actual provincial average cost of production figures. Actual costs and yields on each farm will differ due to the age, amount and type of equipment, the selection of crop protection products and other inputs used, agronomic practices, soil class and weather conditions. Furthermore, producers will use their own risk assessment and cost-benefit calculations in production decisions, which will determine the actual costs of production that will result.

Farm managers can use the blank worksheet at the end of this guide to input their own costs of production in their calculations and decision making. Crop pricing information changes continuously.

Producers should adjust those figures accordingly to reflect their own expectations. A downloadable spreadsheet is also available on saskatchewan.ca/agriculture by searching for "Crop Planner."

The sustained success of any crop relies on good agronomic management including a good crop rotation. If good agronomic practices are not allowed, the expected profitability of a crop will diminish and diseases such as clubroot may be prevalent over time.

Farm managers may also wish to consult with the Ministry's Crops Extension Specialists about the appropriate agronomic practices and cost assumptions that apply to their specific farm situation.



# GENERAL ASSUMPTIONS FOR ALL SOIL ZONES

1. **Crop prices** are based in part on the prices used in the November Farm Income Forecast. Crop pricing information can become outdated very quickly, so producers should continually adjust these figures as seeding approaches.

2. **Estimated crop yields** are based on the five year average production of the top 20 per cent of Saskatchewan Crop Insurance Corporation (SCIC) customers.

3. **Seeding rates** in the following guide are expressed in pounds per acre, with the exception of corn, soybeans, sunflowers and hybrid fall rye. These crops seeding costs are based on recommended plant population and units required to achieve those. Seeding rate conversions to bushels per acre may be made by dividing the stated seeding rate by the appropriate weight per bushel for each crop.

4. **Seeding costs** are for certified seed. Certified seed is assumed to be used for all crops sown.

5. **Fertilizer:** The Saskatchewan Ministry of Agriculture encourages producers to soil test on a consistent basis to measure soil fertility and precisely gauge crop nutrient needs to production expectations. This is consistent with 4R Nutrient Stewardship management practices. The price of key nutrients will fluctuate throughout the year and producers are reminded to continually adjust these figures as seeding approaches.

6. **Chemicals:** Herbicide costs used in this guide reflect the practice of herbicide layering for prevention or management of herbicide-resistant populations. This practice may involve the use of two or more modes of action for control of some weeds in that crop. This guide assumes that commonly encountered insects and crop diseases are controlled through the use of the appropriate pesticides for the crop and pest combinations as a standard practice. The assumptions in this guide are only to demonstrate how the guide can be used to cost a crop protection plan. Producers must use their own costs based on the individual weed, insect and disease pressures. Chemical costs are set using Suggested Retail Price (SRP) costs as well as full rate application. Prices can vary significantly from SRP rates.

7. **Machinery operating costs:** Fuel costs are based on estimated fuel consumptions for the various farming operations with diesel fuel priced at $0.955/litre. Machinery repair rates are based on the Custom Rate and Rental Guide and are set at 2.6 per cent of the yearly machinery investment cost.

8. **Custom work and hired labour** is made up of costs for custom farm operations, such as custom trucking and custom spraying. Skilled labour is assumed to be $22 per hour for 2019.

9. **Crop insurance premiums** are the average of the premiums paid for the soil zone in 2018. The coverage level is assumed to be 70 per cent. The premiums described do not reflect actual producer costs given surcharges and discounts.

10. **Utilities** are electricity, natural gas, water and telephone expenses.

11. **Interest on variable expenses:** Operating interest is calculated on all variable expenses at 3.93 per cent for eight months and for 18 months for hybrid fall rye and winter wheat.

12. **Building repair rates** are assumed to be 2.2 per cent of building investment per acre.

13. **Business overhead** is made up of legal, accounting, insurance, licences and miscellaneous.

14. **Machinery depreciation** is calculated on a straight-line basis at 10.7 per cent of yearly machinery investment.

15. **Building depreciation** is calculated at five per cent per year on a straight-line basis of building investment.

16. **Machinery investment** is calculated at a 7.5 per cent return on investment. It is assumed that a Brown Soil Zone farm has $330.27 per cultivated acre invested in machinery; a Dark Brown Soil Zone farm has $372.43 per cultivated acre invested in machinery; and a Black Soil Zone farm has $421.51 per cultivated acre invested in machinery. These calculations are based on data provided by Statistics Canada.

17. **Building investment cost** is calculated at a three per cent return on investment. It is assumed that a Brown Soil Zone farm has $21 per cultivated acre invested in buildings; a Dark Brown Soil Zone farm has $28 per cultivated acre invested in buildings; and a Black Soil Zone farm has $38 per cultivated acre invested in buildings. These calculations are based on data provided by Statistics Canada.

18. **Land investment cost** is calculated at a 3.53 per cent return on investment of $1,567 per cultivated acre in the Brown Soil Zone; $1,766 per cultivated acre in the Dark Brown Soil Zone; and $1,686 per cultivated acre in the Black Soil Zone.

19. **Labour and management:** These budgets do not include an estimate for owner/operator labour and management. Typical management rates for business of this type are seven per cent of Gross Revenue.

# BROWN SOIL ZONE 2019

### 1. Seeding Rate and Certified Seed Price:

| | Rate/ac. | Price (lb./ plant/unit) |
|---|---|---|
| Spring Wheat | 86 lb. | $0.226 |
| Durum Wheat | 105 lb. | $0.229 |
| Winter Wheat | 113 lb. | $0.200 |
| Malt Barley | 106 lb. | $0.221 |
| Feed Barley | 88 lb. | $0.198 |
| Oats | 88 lb. | $0.224 |
| Corn | 30,000 plants | $0.002 |
| Large Green Lentils | 91 lb. | $0.360 |
| Red Lentils | 56 lb. | $0.300 |
| Edible Yellow Peas | 138 lb. | $0.230 |
| Edible Green Peas | 137 lb. | $0.263 |
| Soybean | 1.4 units | $61.80 |
| Flax | 34 lb. | $0.42 |
| Hybrid Fall Rye | 0.8 units | $66.13 |
| Canola | 5 lb. | $13.24 |

### 2. Fertilizer:

| | lb./ac. | | |
|---|---|---|---|
| | N | P | S |
| Spring Wheat | 85 | 34 | 0 |
| Durum Wheat | 94 | 37 | 0 |
| Winter Wheat | 70 | 34 | 0 |
| Malt Barley | 69 | 30 | 0 |
| Feed Barley | 85 | 37 | 0 |
| Oats | 61 | 25 | 0 |
| Hybrid Fall Rye | 74 | 31 | 0 |
| Corn | 106 | 48 | 0 |
| Large Green Lentils | 4 | 21 | 0 |
| Red Lentils | 5 | 23 | 0 |
| Edible Yellow Peas | 8 | 36 | 0 |
| Edible Green Peas | 8 | 36 | 0 |
| Soybean | 5 | 23 | 0 |
| Flax | 77 | 23 | 0 |
| Canola | 102 | 55 | 17 |

| | Crops | | | | |
|---|---|---|---|---|---|
| **REVENUE PER ACRE** | Spring Wheat | Durum Wheat | Winter Wheat | Malt Barley | Feed Barley |
| Estimated Yield (bu./ac.,lb./ac.) (A) | 51.6 | 57.1 | 61.6 | 65.3 | 79.8 |
| Estimated on Farm Market Price/bu.,lb. (B) | 6.75 | 6.96 | 5.05 | 4.74 | 3.94 |
| **Estimated Gross Revenue/ac. (AxB)=(C)** | **348.30** | **397.42** | **311.08** | **309.52** | **314.41** |
| | | | | | |
| **EXPENSES PER ACRE** | | | | | |
| **Variable Expenses/acre** | | | | | |
| Seed | 19.44 | 24.05 | 22.60 | 23.43 | 17.42 |
| - Seed Treatments/Inoculants | 5.54 | 6.76 | 7.27 | 6.82 | 5.67 |
| Fertilizer - Nitrogen | 49.21 | 54.42 | 40.53 | 39.95 | 49.21 |
| - Phosphorus | 18.74 | 20.39 | 18.74 | 16.53 | 20.39 |
| - Sulphur and Other | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Chemical - Herbicides | 44.56 | 32.47 | 62.32 | 69.71 | 28.32 |
| - Insecticides | 6.07 | 6.07 | 0.00 | 0.00 | 0.00 |
| - Fungicides | 18.00 | 18.00 | 0.00 | 20.07 | 0.00 |
| Machinery Operating - Fuel | 20.81 | 22.02 | 20.81 | 20.75 | 21.80 |
| - Repair | 8.54 | 8.54 | 8.54 | 8.54 | 8.54 |
| Custom Work and Hired Labour | 19.00 | 19.00 | 19.00 | 17.50 | 17.50 |
| Crop Insurance Premium | 5.00 | 7.06 | 9.60 | 6.84 | 6.84 |
| Utilities and Miscellaneous | 3.24 | 3.24 | 3.24 | 3.24 | 3.24 |
| Interest on Variable Expenses | 5.71 | 5.81 | 12.52 | 6.11 | 4.68 |
| **Total Variable Expenses (D)** | **223.85** | **227.82** | **225.17** | **239.50** | **183.62** |
| | | | | | |
| **Other Expenses/acre** | | | | | |
| Building Repair | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 |
| Property Taxes | 3.76 | 3.76 | 3.76 | 3.76 | 3.76 |
| Business Overhead | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 |
| Machinery Depreciation | 35.34 | 35.34 | 35.34 | 35.34 | 35.34 |
| Building Depreciation | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 |
| Machinery Investment | 24.77 | 24.77 | 24.77 | 24.77 | 24.77 |
| Building Investment | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| Land Investment | 55.33 | 55.33 | 55.33 | 55.33 | 55.33 |
| **Total Other Expenses (E)** | **123.42** | **123.42** | **123.42** | **123.42** | **123.42** |
| Labour & Management (F)* | | | | | |
| **Total Expenses (D+E+F)=(G)** | **347.27** | **351.24** | **348.58** | **362.91** | **307.03** |
| | | | | | |
| **RETURN PER ACRE** | | | | | |
| **Return Over Variable Expenses (C-D)** | **124.45** | **169.60** | **85.91** | **70.02** | **130.79** |
| **Return Over Total Expenses (C-G)** | **1.03** | **46.18** | **-37.50** | **-53.39** | **7.38** |
| | | | | | |
| **BREAK-EVEN YIELD PER ACRE** | | | | | |
| **To Cover Variable Expenses** | **33.16** | **32.73** | **44.59** | **50.53** | **46.60** |
| **To Cover Total Expenses** | **51.45** | **50.47** | **69.03** | **76.56** | **77.93** |
| | | | | | |
| **BREAK-EVEN PRICE PER BU./LB.** | | | | | |
| **To Cover Variable Expenses** | **4.34** | **3.99** | **3.66** | **3.67** | **2.30** |
| **To Cover Total Expenses** | **6.73** | **6.15** | **5.66** | **5.56** | **3.85** |

*These budgets do not include an estimate for owner/operator labour and management. Farm managers need to determine their own actual labour and management costs and add it to total expenses.

# BROWN SOIL ZONE 2019 (CON'T)

| | Crops | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **REVENUE PER ACRE** | Hybrid Fall Rye | Oats | Corn** | Large Green Lentils | Red Lentils | Edible Yellow Peas | Edible Green Peas | Soybean | Flax | Canola |
| Estimated Yield (bu./ac.,lb./ac.) (A) | 63.7 | 90.3 | 99.1 | 1879.2 | 2109.0 | 48.0 | 48.0 | 29.9 | 33.0 | 48.2 |
| Estimated on Farm Market Price/bu.,lb. (B) | 5.41 | 3.10 | 4.70 | 0.21 | 0.16 | 6.53 | 8.00 | 10.66 | 12.62 | 11.59 |
| **Estimated Gross Revenue/ac. (AxB)=(C)** | **344.62** | **279.93** | **465.77** | **394.63** | **337.44** | **313.44** | **384.00** | **318.73** | **416.46** | **558.64** |
| | | | | | | | | | | |
| **EXPENSES PER ACRE** | | | | | | | | | | |
| **Variable Expenses/acre** | | | | | | | | | | |
| Seed | 52.91 | 19.71 | 93.60 | 32.76 | 16.80 | 31.74 | 36.03 | 86.52 | 14.11 | 66.19 |
| - Seed Treatments/Inoculants | 0.00 | 2.90 | 0.00 | 13.88 | 13.88 | 16.34 | 16.34 | 14.00 | 1.78 | 0.00 |
| Fertilizer - Nitrogen | 42.85 | 35.32 | 61.37 | 2.57 | 2.82 | 4.41 | 4.41 | 2.82 | 44.58 | 59.06 |
| - Phosphorus | 17.08 | 13.78 | 26.45 | 11.57 | 12.68 | 19.84 | 19.84 | 12.68 | 12.68 | 30.31 |
| - Sulphur and Other | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 7.28 |
| Chemical - Herbicides | 33.36 | 23.70 | 27.07 | 71.11 | 71.11 | 66.21 | 66.21 | 52.34 | 58.34 | 49.99 |
| - Insecticides | 0.00 | 0.00 | 0.00 | 16.30 | 16.30 | 0.00 | 0.00 | 0.00 | 0.00 | 4.83 |
| - Fungicides | 0.00 | 0.00 | 0.00 | 22.50 | 22.50 | 29.26 | 29.26 | 0.00 | 0.00 | 0.00 |
| Machinery Operating - Fuel | 19.19 | 21.55 | 23.93 | 18.02 | 18.90 | 16.93 | 16.93 | 17.95 | 18.88 | 19.77 |
| - Repair | 8.54 | 8.54 | 10.04 | 8.54 | 8.54 | 8.54 | 8.54 | 8.54 | 8.54 | 8.54 |
| Custom Work and Hired Labour | 17.50 | 17.50 | 45.74 | 18.50 | 18.50 | 17.00 | 17.00 | 19.00 | 17.50 | 17.75 |
| Crop Insurance Premium | 9.33 | 7.55 | 10.63 | 17.74 | 11.19 | 6.17 | 6.17 | 6.60 | 10.00 | 17.41 |
| Utilities and Miscellaneous | 3.24 | 3.24 | 3.24 | 3.24 | 3.24 | 3.24 | 3.24 | 3.24 | 3.24 | 3.24 |
| Interest on Variable Expenses | 12.01 | 4.02 | 7.90 | 6.19 | 5.66 | 5.75 | 5.86 | 5.85 | 4.96 | 7.44 |
| **Total Variable Expenses (D)** | **216.01** | **157.82** | **309.97** | **242.92** | **222.11** | **225.42** | **229.82** | **229.53** | **194.60** | **291.81** |
| | | | | | | | | | | |
| **Other Expenses/acre** | | | | | | | | | | |
| Building Repair | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 |
| Property Taxes | 3.76 | 3.76 | 3.76 | 3.76 | 3.76 | 3.76 | 3.76 | 3.76 | 3.76 | 3.76 |
| Business Overhead | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 |
| Machinery Depreciation | 35.34 | 35.34 | 41.53 | 35.34 | 35.34 | 35.34 | 35.34 | 35.34 | 35.34 | 35.34 |
| Building Depreciation | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 |
| Machinery Investment | 24.77 | 24.77 | 29.11 | 24.77 | 24.77 | 24.77 | 24.77 | 24.77 | 24.77 | 24.77 |
| Building Investment | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| Land Investment | 55.33 | 55.33 | 55.33 | 55.33 | 55.33 | 55.33 | 55.33 | 55.33 | 55.33 | 55.33 |
| **Total Other Expenses (E)** | **123.42** | **123.42** | **133.94** | **123.42** | **123.42** | **123.42** | **123.42** | **123.42** | **123.42** | **123.42** |
| Labour & Management (F)* | | | | | | | | | | |
| **Total Expenses (D+E+F)=(G)** | **339.42** | **281.23** | **443.92** | **366.34** | **345.53** | **348.84** | **353.24** | **352.95** | **318.02** | **415.23** |
| | | | | | | | | | | |
| **RETURN PER ACRE** | | | | | | | | | | |
| **Return Over Variable Expenses (C-D)** | **128.61** | **122.11** | **155.80** | **151.71** | **115.33** | **88.02** | **154.18** | **89.20** | **221.86** | **266.83** |
| **Return Over Total Expenses (C-G)** | **5.20** | **-1.30** | **21.85** | **28.29** | **-8.09** | **-35.40** | **30.76** | **-34.22** | **98.44** | **143.41** |
| | | | | | | | | | | |
| **BREAK-EVEN YIELD PER ACRE** | | | | | | | | | | |
| **To Cover Variable Expenses** | **39.93** | **50.91** | **65.95** | **1156.75** | **1388.21** | **34.52** | **28.73** | **21.53** | **15.42** | **25.18** |
| **To Cover Total Expenses** | **62.74** | **90.72** | **94.45** | **1744.45** | **2159.57** | **53.42** | **44.15** | **33.11** | **25.20** | **35.83** |
| | | | | | | | | | | |
| **BREAK-EVEN PRICE PER BU./LB.** | | | | | | | | | | |
| **To Cover Variable Expenses** | **3.39** | **1.75** | **3.13** | **0.13** | **0.11** | **4.70** | **4.79** | **7.68** | **5.90** | **6.05** |
| **To Cover Total Expenses** | **5.33** | **3.11** | **4.48** | **0.19** | **0.16** | **7.27** | **7.36** | **11.80** | **9.64** | **8.61** |

*These budgets do not include an estimate for owner/operator labour and management. Farm managers need to determine their own actual labour and management costs and add it to total expenses.

**As a greater investment in machinery is required for corn production, related per acre machinery costs (repairs, depreciation and investment costs) are also higher, compared to other crops.

| CROP PRODUCTION COSTS ( /ACRE) MY FARM | USE THIS WORKSHEET TO ADJUST THE CROP BUDGET TO YOUR FARM COSTS | | | |
|---|---|---|---|---|
| | | | | |
| **REVENUE PER ACRE** | | | | |
| **A** Estimated yield (bu./ac.or lb./ac.) | | | | |
| **B** Estimated on-farm market price per bushel or per pound | | | | |
| **C Estimated Gross Revenue per acre (AxB)** | | | | |
| | | | | |
| **EXPENSES PER ACRE** | | | | |
| Variable Expenses/acre | | | | |
| Seed | | | | |
| - Seed Treatments/Inoculants | | | | |
| Fertilizer - Nitrogen | | | | |
| - Phosphorus | | | | |
| - Sulphur and Other | | | | |
| Chemical - Herbicides | | | | |
| - Insecticides | | | | |
| - Fungicides | | | | |
| Machinery Operating - Fuel | | | | |
| - Repair | | | | |
| Custom Work and Hired Labour | | | | |
| Crop Insurance Premium | | | | |
| Utilities and Miscellaneous | | | | |
| Interest on Variable Expenses | | | | |
| **D Total Variable Expenses** | | | | |
| | | | | |
| **Other Expenses/acre** | | | | |
| Building Repair | | | | |
| Property Taxes | | | | |
| Business Overhead | | | | |
| Machinery Depreciation | | | | |
| Building Depreciation | | | | |
| Machinery Investment | | | | |
| Building Investment | | | | |
| Land Investment | | | | |
| **E Total Other Expenses** | | | | |
| F Labour and Management | | | | |
| **G Total Expenses (D+E+F)** | | | | |
| | | | | |
| **RETURNS PER ACRE** | | | | |
| **Return Over Variable Expenses (C-D)** | | | | |
| **Return Over Total Expenses (C-G)** | | | | |
| | | | | |
| **BREAK-EVEN YIELD PER ACRE (lb./ac. or bu./ac.)** | | | | |
| **To Cover Variable Expenses** | | | | |
| **To Cover Total Expenses** | | | | |
| | | | | |
| **BREAK-EVEN PRICE PER BU./LB.** | | | | |
| **To Cover Variable Expenses** | | | | |
| **To Cover Total Expenses** | | | | |

## For more information contact:

### Saskatchewan Agriculture Regional Offices

**Kindersley**
306-463-5513

**Moose Jaw**
1-866-457-2377

**North Battleford**
306-446-7962

**Outlook**
306-867-5500

**Prince Albert**
306-953-2363

**Swift Current**
306-778-8285

**Tisdale**
306-878-8842

**Watrous**
306-946-3230

**Weyburn**
306-848-2857

**Yorkton**
306-786-1531

**Agriculture Knowledge Centre (Toll Free): 1-866-457-2377**