

Crop Planning Guide

2020



Crop Planning Guide 2020

Each year, the Ministry of Agriculture develops the Crop Planning Guide to help producers estimate the costs and returns of producing common crops.

The detailed calculations in this guide are based on the inputs and returns associated with attaining a target yield in the top 20 per cent of producers for each soil zone. Actual costs and yields on each farm will differ due to the condition and type of equipment, the selection of crop protection products and other inputs, agronomic practices, soil class and weather conditions. Producers are also expected to set their own target yields. A downloadable spreadsheet is available on saskatchewan.ca/agriculture by searching for Crop Planning Guide.

The general agronomic and economic assumptions that apply to all crops remain consistent with previous years. However, this guide includes several formatting changes to make crop-specific assumptions more transparent and the guide more user-friendly.

Each crop now has its own page with agronomic information and a blank column for producers to input their own costs and revenues. The new format also includes a yield sensitivity analysis that summarizes returns that can be expected if an operation attains an average yield, rather than the target yields used in the detailed calculations. This is intended to help producers baseline their yields and to assess any economic benefits of increasing their inputs and management efforts.

Ministry regional specialists are also available to provide advice about appropriate agronomic practices and cost assumptions.

To provide feedback on this year's Crop Planning Guide, please contact your regional specialist or visit saskatchewan.ca/agriculture.

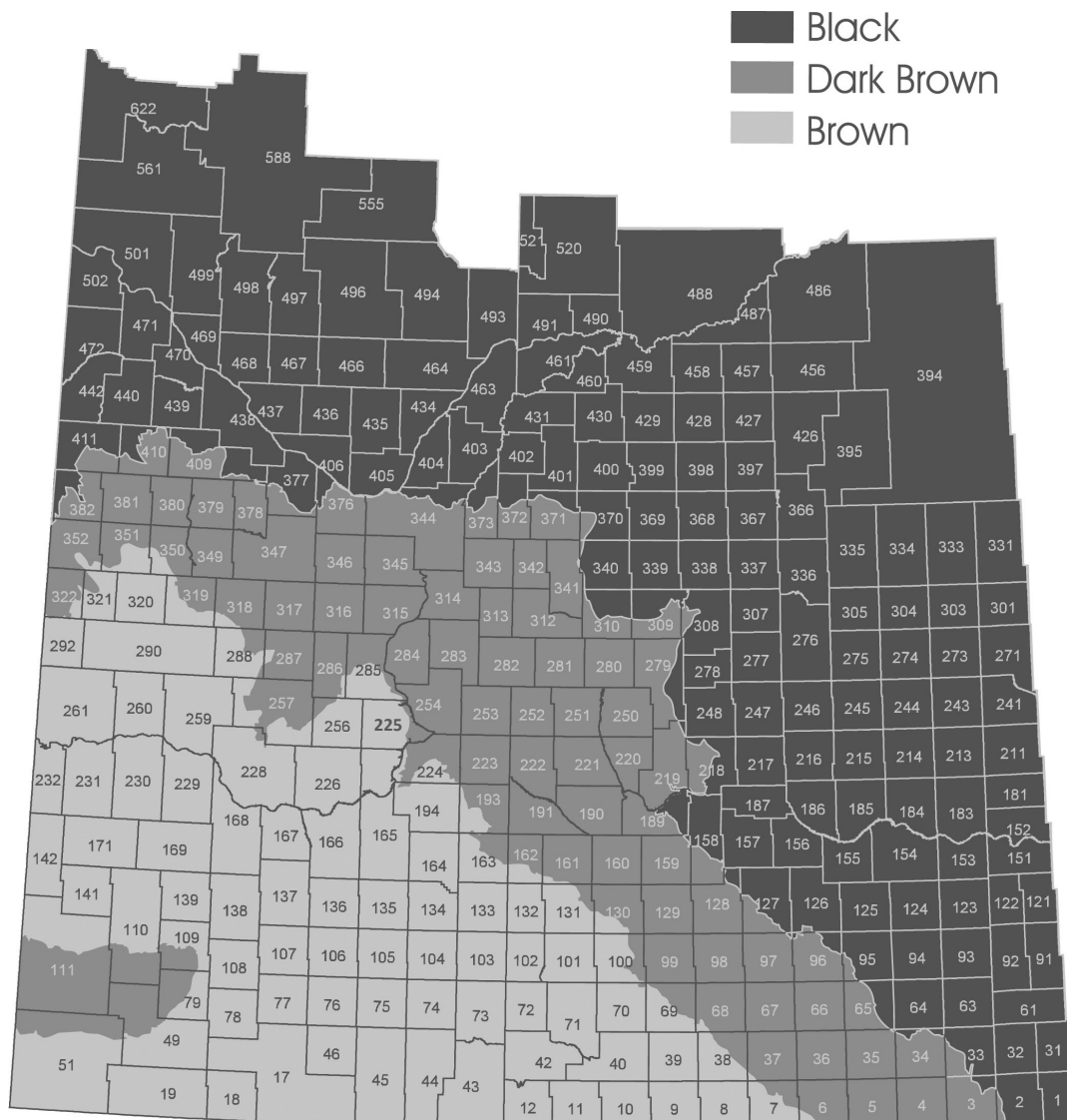


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General Assumptions for All Soil Zones

1. **Crop prices** are the average annual farm gate price adopted from Agriculture and Agri-Food Canada's 2019-20 winter farm income forecast. The farm gate price represents the actual payment received by farmers. This includes crops sold through forward contracts and at spot prices. Crop pricing information can become outdated quickly, so producers should adjust these figures as needed.
2. **Targeted crop yields** represent the top 20 per cent (the 80th percentile) production of the five-year average yield for each crop in each soil zone. These calculations use producer data submitted to Saskatchewan Crop Insurance Corporation. These target yields reflect a higher level of management, improvements in plant genetics and higher input utilization. Producers should adjust the target yield to meet their goals and management style.
3. **Seeding rates** are determined by seed size, expected mortality, germination and desired plant population.
4. **Seed costs** are based on the use of certified seed and low-disturbance, direct seeding.
5. **Variety selection** should be made to best suit the agro-climatic conditions. More information can be found by searching for Varieties of Grain Crops at saskatchewan.ca/agriculture.
6. **Fertilizer** needs are highly variable and must be adjusted to meet conditions. The calculations in this guide are based on prices from a selection of dealers throughout the province and the estimated amount of nutrients removed from the soil in order for the crop to attain the target yield. These are not recommended applications rates for specific operations. The ministry encourages producers to soil test on a consistent basis to measure soil fertility and calculate the total crop nutrient application required to achieve targeted crop yields. This is consistent with 4R Nutrient Stewardship management practices. For pulse crops, producers should focus on applying the correct inoculant. It is recommended to follow the guideline for safe rates of fertilizer applied with the seed when determining the right rate of phosphorous in pulse crops. Producers are reminded to adjust both the volume of nutrients applied, as well as the price of each nutrient.
7. **Crop protection** efforts must be adjusted to meet each producer's conditions. The assumptions in this guide cover common applications to demonstrate potential costs. These are not recommended crop protection applications for specific operations. Producers must cost their individual responses to weed, insect and disease pressures. Please refer to the Guide to Crop Protection available at saskatchewan.ca/agriculture.

The costs of crop protection products are calculated using suggested retail price from a selection of dealers across the province and the full registered rate of application. Prices can vary significantly by vendor. Refer to the Guide to Crop Protection for registered pest control products.

Insect and disease control efforts will be aided by extended crop rotations, which reduce yield losses due to disease. Extended crop rotations also help ensure that management tools, such as resistant varieties and fungicides, remain effective by reducing selection pressure on the pathogen population. 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.

Weed control efforts presented reflect the practice of herbicide layering as much as possible. Herbicide layering helps prevent and manage herbicide-resistant weed populations and may involve the use of two or more modes of action for control of some weeds. The timing and number of applications used in estimating herbicide costs are indicated in a chart on each crop specific page. Below are the descriptions to the applications in the chart:

- **Pre-harvest:** Pre-harvest glyphosate treatment to the previous crop. The benefit of perennial weed control from this application accrues to the crop that is planted after the application.
- **Fall application:** Post-harvest fall application. Typically for winter annual weeds. The benefit of this application will also accrue to the crop that is planted after the application.
- **Pre-seed:** Pre-seed burn off that replaces tillage in a low disturbance direct seeding system. There are two windows of application presented in the chart which represent one or two herbicides used at the pre-seed timing where the primary activity is on emerged weeds. Soil-active herbicides that may be mixed with the burn off applications are treated separately below. Typically, the first application will be glyphosate. When glyphosate is applied alone, it is assumed that this is done at 360 grams of acid equivalent (active) per acre. If a second application is indicated, this will be a tank mix partnered with glyphosate for burn off purposes and has limited residual impact, if any. In a tank mix, the rate of glyphosate is assumed to be 180 grams acid equivalent per acre.
- **Soil application:** Soil-active herbicide that provides residual soil activity for control of emerging weeds beyond emergence and into the crop growth period. These are typically added for herbicide resistance management but also to contribute to increased crop yields by eliminating early weed. Rates of some soil-active herbicides are adjusted for typical organic matter levels in the different soil zones.
- **In-Crop:** In-crop foliar applications. Opportunities are provided for up to three herbicides applied either in a mix or as separate sequential applications where tank mixing is not compatible. There are three windows of application allotted as indicated by each column in the chart.

- **Desiccation:** Harvest aid application prior to harvest. This is done for the purpose of rapid dry down of the crop to facilitate timely harvest. This does not include glyphosate, which may be included as a mix with some harvest aid options.
8. **Machinery operating** costs include fuel usage and repair. Fuel costs are based on estimated fuel consumptions for the various farming operations with diesel fuel priced at \$0.906/litre. Machinery repair rates are based on the Ministry's 2018-19 Custom Rate and Rental Guide and are set at 2.6 per cent of the yearly machinery investment cost.
 9. **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 \$26.40 per hour for 2020.
 10. **Crop insurance premiums** are the five-year average of the premiums paid by producers who attain the top 20 per cent of crop yield for the soil zone. The premiums used in this guide do not reflect actual producers' costs given surcharges and taxes.
 11. **Utilities** include the costs of electricity, natural gas, water and telephone expenses based on the standard farm business rates of major utility providers.
 12. **Interest on variable expenses** is calculated using a rate of 3.63 per cent on all variable expenses. The interest is applied for eight months for all crops except hybrid fall rye and winter wheat. For these two crops, the interest costs are calculated for 12 months.
 13. **Building repair** rates are aligned with the Custom Rate and Rental Guide at 2.2 per cent of building investment.
 14. **Business overhead** is made up of legal, accounting, insurance, licenses and miscellaneous. Business overhead costs are indexed by applying the farm input price index to Statistics Canada's 2016 Census of Agriculture.
 15. **Machinery depreciation** is calculated using a straight-line formula at 10.7 per cent annual depreciation rate.
 16. **Building depreciation** is calculated at five per cent per year on a straight-line basis of building investment.
 17. **Machinery investments** is calculated at 7.5 per cent of investment in machinery. Based on data provided by Statistics Canada, it is estimated that a brown soil zone farm has \$331.34 per cultivated acre invested in machinery, a dark brown soil zone farm has \$373.64 per cultivated acre invested and a black soil zone farm has \$422.88 invested per cultivated acre. Machinery costs are substantial and these are average rates per soil zone. Producers are reminded to adjust these figures to meet their unique circumstances.
 18. **Building investment** cost is calculated at a three per cent of building investment. Based on data provided by Statistics Canada, it is estimated 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 and a black soil zone farm has \$38 per cultivated acre invested.
 19. **Land investment** cost is calculated at a 3.53 per cent return on investment of \$1,567.49 per cultivated acre in the brown soil zone, \$1,766.59 per cultivated acre in the dark brown soil zone and \$1,686.95 per cultivated acre in the black soil zone.
 20. **Labour and management** refers to owner/operator labour and management and is not included in these estimates.

2020 Feed Barley

Economics

Revenue Per Acre

	My Farm	Brown	Dark Brown	Black
Target Yield (bu./ac.) (A)		76.7	81.8	91.9
Estimated Farm Gate Price (\$/bu.) (B)		3.94	3.94	3.94
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		302.20	322.29	362.09

Expenses Per Acre

Variable Expenses/Acre				
Seed		17.60	19.40	22.00
- Seed Treatments/Inoculants		8.05	8.87	10.06
Fertilizer - Nitrogen		40.75	43.76	49.30
- Phosphorus (P ₂ O ₅)		15.82	17.18	19.44
- Sulphur and Other		0.00	0.00	0.00
Plant Protection - Herbicides		29.69	29.69	29.69
- Insecticides		6.07	6.07	6.07
- Fungicides		0.00	0.00	11.85
Machinery Operating - Fuel		12.32	15.40	19.25
- Repair		8.57	9.66	10.94
Custom Work and Hired Labour		20.80	21.05	21.05
Crop Insurance Premium		6.93	4.95	5.11
Utilities and Miscellaneous		3.13	4.11	4.75
Interest on Variable Expenses		3.88	4.12	4.79
Total Variable Expenses (D)		173.61	184.26	214.30

Other Expenses/Acre

Building Repair		0.47	0.63	0.85
Property Taxes		3.91	5.11	7.75
Business Overhead		2.08	3.18	3.73
Machinery Depreciation		35.45	39.98	45.25
Building Depreciation		1.05	1.40	1.90
Machinery Investment		24.85	28.02	31.72
Building Investment		0.75	1.00	1.36
Land Investment		55.33	62.36	59.55
Total Other Expenses (E)		123.89	141.68	152.11
Labour and Management* (F)				
Total Expenses (D+E+F)=(G)		297.50	325.93	366.41

Return Per Acre

Return Over Variable Expenses (C-D)		128.59	138.03	147.79
Return Over Total Expenses (C-G)		4.70	-3.64	-4.32

Break Even Yield (bu./ac.)

To Cover Variable Expenses		44.06	46.77	54.39
To Cover Total Expenses		75.51	82.72	93.00

Break Even Price (\$/bu.)

To Cover Variable Expenses		2.26	2.25	2.33
To Cover Total Expenses		3.88	3.98	3.99

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (bu./ac.)		51.40	58.80	69.40
Return Over Variable Expenses		28.91	47.41	59.14
Return Over Total Expenses		-94.98	-94.26	-92.97

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: Seeding rates are based on a target plant stand in plants per square foot. This guide assumes a producer will seed to achieve 25 plants per square foot in the black soil zone, 22 in the dark brown soil zone and 20 in the brown soil zone, with a thousand kernel weight of 45 and 85 per cent emergence.

Fertilization: Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 98 lb./ac. N and 43 lb./ac. P₂O₅ for the black soil zone, 87 lb./ac. N and 38 lb./ac. P₂O₅ for the dark brown soil zone and 81 lb./ac. N and 35 lb./ac. P₂O₅ for the brown soil zone. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Diverse crop rotations are recommended to help reduce disease pressure and suppress weeds to manage herbicide resistance. Barley is a very competitive crop that will suppress growth of weeds. Feed barley markets may be more tolerant of weed escapes than malt barley.

Crop Protection

Insect control: Cutworms, aphids, thrips, mites, grasshoppers, armyworm, slugs and wireworms might require control. Seed treatments are available for wireworm control.

Disease control: Cereal crops can be affected by both leaf diseases and fusarium head blight (FHB). When disease pressure is moderate, a single application at FHB timing can be effective in managing both types of diseases. This estimation includes the cost of a single fungicide application in the black soil zone. When disease pressure is high, an additional fungicide application for leaf diseases may be required. Fungicide applications should be made based on field history and disease risk during the growing season.

Weed control: Because barley is competitive, growers can often reduce the number of herbicide applications from those listed. Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used								
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop			Desiccation
		1	2		1	2	3	
		✓	✓		✓	✓		

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Malt Barley

Economics

Revenue Per Acre

	My Farm	Brown	Dark Brown	Black
Target Yield (bu./ac.) (A)		62.7	67.0	74.6
Estimated Farm Gate Price (\$/bu.) (B)		4.70	4.70	4.70
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		294.69	314.90	350.62

Expenses Per Acre

Variable Expenses/Acre				
Seed		23.32	25.52	29.04
- Seed Treatments/Inoculants		9.70	10.61	12.07
Fertilizer - Nitrogen		34.71	37.22	40.75
- Phosphorus (P ₂ O ₅)		13.56	14.46	15.82
- Sulphur and Other		0.00	0.00	0.00
Plant Protection - Herbicides		73.77	73.77	73.77
- Insecticides		6.07	6.07	6.07
- Fungicides		11.85	11.85	11.85
Machinery Operating - Fuel		12.32	15.40	19.25
- Repair		8.57	9.66	10.94
Custom Work and Hired Labour		20.80	21.05	21.05
Crop Insurance Premium		4.27	4.08	4.25
Utilities and Miscellaneous		3.13	4.11	4.75
Interest on Variable Expenses		5.08	5.35	5.71
Total Variable Expenses (D)		227.15	239.15	255.32
Other Expenses/Acre				
Building Repair		0.47	0.63	0.85
Property Taxes		3.91	5.11	7.75
Business Overhead		2.08	3.18	3.73
Machinery Depreciation		35.45	39.98	45.25
Building Depreciation		1.05	1.40	1.90
Machinery Investment		24.85	28.02	31.72
Building Investment		0.75	1.00	1.36
Land Investment		55.33	62.36	59.55
Total Other Expenses (E)		123.89	141.68	152.11
Labour and Management* (F)				
Total Expenses (D+E+F)=(G)		351.04	380.83	407.43

Return Per Acre

Return Over Variable Expenses (C-D)		67.54	75.75	95.30
Return Over Total Expenses (C-G)		-56.35	-65.93	-56.81

Break Even Yield (bu./ac.)

To Cover Variable Expenses		48.33	50.88	54.32
To Cover Total Expenses		74.69	81.03	86.69

Break Even Price (\$/bu.)

To Cover Variable Expenses		3.62	3.57	3.42
To Cover Total Expenses		5.60	5.68	5.46

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (bu./ac.)		42.04	48.15	56.35
Return Over Variable Expenses		-29.56	-12.84	9.53
Return Over Total Expenses		-153.45	-154.52	-142.58

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: Seeding rates are based on a target plant stand in plants per square foot. This guide assumes a producer will seed to achieve 25 plants per square foot in the black soil zone, 22 in the dark brown soil zone and 20 brown soil zone, with a thousand kernel weight of 45 and 85 per cent emergence.

Fertilization: Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 81 lb./ac. N and 35 lb./ac. P₂O₅ for the black soil zone, 74 lb./ac. N and 32 lb./ac. P₂O₅ for the dark brown soil zone and 69 lb./ac. N and 30 lb./ac. P₂O₅ for the brown soil zone. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Diverse crop rotations are recommended to help reduce disease pressure and suppress weeds to manage herbicide resistance. Barley is a very competitive crop that will suppress growth of weeds.

Crop Protection

Insect control: Cutworms, aphids, thrips, mites, grasshoppers, armyworm, slugs and wireworms might require control. Seed treatments are available for wireworm control.

Disease control: Cereal crops can be affected by both leaf diseases and fusarium head blight (FHB). When disease pressure is moderate, a single application at FHB timing can be effective in managing both types of diseases. This estimation includes the cost of a single fungicide application. When disease pressure is high, an additional fungicide application for leaf diseases may be required. Fungicide applications should be made based on field history and disease risk during the growing season.

Weed control: Because barley is competitive, growers can often reduce the number of herbicide applications from those listed. A soil-applied herbicide was used to manage Group 1 resistant wild oats. Refer to the Guide to Crop Protection available at saskatchewan.ca/agriculture for more information about Group 1 resistance. Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used								
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop			Desiccation
		1	2		1	2	3	
✓		✓	✓	✓	✓	✓		

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Canola

Economics

Revenue Per Acre

	My Farm	Brown	Dark Brown	Black
Target Yield (bu./ac.) (A)		48.50	50.30	53.80
Estimated Farm Gate Price (\$/bu.) (B)		10.70	10.70	10.70
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		518.95	538.21	575.66

Expenses Per Acre

Variable Expenses/Acre				
Seed		66.19	66.19	66.19
- Seed Treatments/Inoculants		9.00	9.00	9.00
Fertilizer - Nitrogen		51.81	53.32	57.35
- Phosphorus (P ₂ O ₅)		24.86	25.76	27.57
- Sulphur and Other		7.00	7.00	7.59
Plant Protection - Herbicides		59.55	66.40	66.40
- Insecticides		8.00	8.00	8.00
- Fungicides		0.00	34.99	34.99
Machinery Operating - Fuel		13.05	16.31	20.39
- Repair		8.57	9.66	10.94
Custom Work and Hired Labour		20.80	21.05	21.05
Crop Insurance Premium		10.52	9.04	9.72
Utilities and Miscellaneous		3.13	4.11	4.75
Interest on Variable Expenses		6.46	7.56	7.86
Total Variable Expenses (D)		288.94	338.39	351.80
Other Expenses/Acre				
Building Repair		0.47	0.63	0.85
Property Taxes		3.91	5.11	7.75
Business Overhead		2.08	3.18	3.73
Machinery Depreciation		35.45	39.98	45.25
Building Depreciation		1.05	1.40	1.90
Machinery Investment		24.85	28.02	31.72
Building Investment		0.75	1.00	1.36
Land Investment		55.33	62.36	59.55
Total Other Expenses (E)		123.89	141.68	152.11
Labour and Management* (F)				
Total Expenses (D+E+F)=(G)		412.83	480.07	503.91

Return Per Acre

Return Over Variable Expenses (C-D)		230.01	199.82	223.86
Return Over Total Expenses (C-G)		106.12	58.14	71.75

Break Even Yield (bu./ac.)

To Cover Variable Expenses		27.00	31.63	32.88
To Cover Total Expenses		38.58	44.87	47.09

Break Even Price (\$/bu.)

To Cover Variable Expenses		5.96	6.73	6.54
To Cover Total Expenses		8.51	9.54	9.37

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (bu./ac.)		35.30	40.80	41.90
Return Over Variable Expenses		88.77	98.17	96.53
Return Over Total Expenses		-35.12	-43.51	-55.58

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: A seeding rate of 5 lb./ac. is used for each soil zones.

Fertilization: Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 114 lb./ac. N and 61 lb./ac. P₂O₅ and 18.4 lb./ac. S for the black soil zone, 106 lb./ac. N and 57 lb./ac. P₂O₅ and 17 lb./ac. S for the dark brown soil zone and 103 lb./ac. N and 55 lb./ac. P₂O₅ and 17 lb./ac. S for the brown soil zone. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Crop rotation will help to reduce root maggot and pressure from diseases, such as clubroot, by reducing or maintaining low pathogen levels in the field.

Crop Protection

Insect control: Flea beetles, cutworms, lygus bugs, cabbage seedpod weevil, diamondback moth, bertha armyworm, alfalfa looper, cabbage looper, and occasionally imported cabbageworm, grasshoppers and slugs might require control. Seed treatments are available for flea beetle and cutworm control.

Disease control: Sclerotinia stem rot is the main disease managed with the application of foliar fungicides. This estimation includes the cost of a single fungicide application in the dark brown and black soil zones. Disease pressure will vary from year to year and field to field and is influenced by environmental conditions. Fungicide application decisions should be made based on disease risk when the crop is susceptible to infection.

Weed control: A soil-active herbicide to reduce competition from cleavers was included in brown and dark brown soils. This was exchanged for a foliar tank mix option in the black soils. Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used							
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop		
		1	2		1	2	3
✓		✓	✓	✓	✓	✓	✓

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Corn

Economics

Revenue Per Acre

	My Farm	Brown	Dark Brown	Black
Target Yield (bu./ac.) (A)		100.0	72.4	108.2
Estimated Farm Gate Price (\$/bu.) (B)		4.70	4.70	4.70
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		470.00	340.28	508.54

Expenses Per Acre

Variable Expenses/Acre				
Seed		93.60	93.60	93.60
- Seed Treatments/Inoculants		0.00	0.00	0.00
Fertilizer - Nitrogen		53.83	38.73	58.35
- Phosphorus (P ₂ O ₅)		21.70	15.82	23.50
- Sulphur and Other		0.00	0.00	0.00
Plant Protection - Herbicides		30.48	30.48	30.48
- Insecticides		6.07	6.07	6.07
- Fungicides		0.00	0.00	0.00
Machinery Operating - Fuel		13.77	17.21	21.52
- Repair		10.04	11.13	12.40
Custom Work and Hired Labour		49.04	45.48	58.26
Crop Insurance Premium		9.78	9.78	8.02
Utilities and Miscellaneous		3.13	4.11	4.75
Interest on Variable Expenses		6.66	6.23	7.25
Total Variable Expenses (D)		298.10	278.64	324.20
Other Expenses/Acre				
Building Repair		0.47	0.63	0.85
Property Taxes		3.91	5.11	7.75
Business Overhead		2.08	3.18	3.73
Machinery Depreciation		41.53	46.04	51.29
Building Depreciation		1.05	1.40	1.90
Machinery Investment		29.11	32.27	35.97
Building Investment		0.75	1.00	1.36
Land Investment		55.33	62.36	59.55
Total Other Expenses (E)		134.23	151.99	162.40
Labour and Management* (F)				
Total Expenses (D+E+F)=(G)		432.33	430.62	486.60

Return Per Acre

Return Over Variable Expenses (C-D)		171.90	61.64	184.34
Return Over Total Expenses (C-G)		37.67	-90.34	21.94

Break Even Yield (bu./ac.)

To Cover Variable Expenses		63.43	59.28	68.98
To Cover Total Expenses		91.99	91.62	103.53

Break Even Price(\$/bu.)

To Cover Variable Expenses		2.98	3.85	3.00
To Cover Total Expenses		4.32	5.95	4.50

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (bu./ac.)		67.70	55.50	89.70
Return Over Variable Expenses		20.09	-17.79	97.39
Return Over Total Expenses		-114.14	-169.77	-65.01

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Variety Selection: Corn varieties are not listed in the Varieties of Grain Crops found on saskatchewan.ca/agriculture. Please contact your retailer for more information.

Seeding: A plant population of 30,000 plants/ac is used for all three soil zones.

Fertilization: Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 107 lb./ac. N and 48 lb./ac. P₂O₅ for all three soil zones. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Extended crop rotations can be used to reduce disease pressure by allowing infected residue to decompose between host crops. This is particularly important for residue-borne diseases caused by bacteria, such as Goss's Wilt, as fungicides will not protect against this disease. Corn is not competitive with weeds. Some herbicide choices in corn can significantly restrict cropping options the following year.

Crop Protection

Insect control: Cutworms, wireworms, seedcorn maggot, corn rootworm, aphids, spider mite, grasshoppers, European corn borer, corn earworm and armyworms might require control. Seed treatments are available for wireworm and seedcorn maggot control. Varieties resistant to European corn borer, corn earworm, and corn rootworm are available.

Disease control: The cost of fungicide is not included in this estimate. Disease risk assessment is encouraged to guide fungicide application decisions.

Weed control: Corn must be kept free of weeds until 10 leaf tips are visible to prevent significant yield losses. Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used							
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop		
		1	2		1	2	3
		✓		✓	✓	✓	

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Fababeans

Economics

My Farm Black

Revenue Per Acre

Target Yield (lb./ac.) (A)	3,651.20
Estimated Farm Gate Price (\$/lb.) (B)	0.12
Estimated Gross Revenue (\$/ac.) (AxB)=(C)	438.14

Expenses Per Acre

Variable Expenses/Acre	
Seed	40.73
- Seed Treatments/Inoculants	0.00
Fertilizer - Nitrogen	8.51
- Phosphorus (P ₂ O ₅)	36.16
- Sulphur and Other	0.00
Plant Protection - Herbicides	97.50
- Insecticides	5.45
- Fungicides	29.26
Machinery Operating - Fuel	19.93
- Repair	10.94
Custom Work and Hired Labour	19.80
Crop Insurance Premium	6.46
Utilities and Miscellaneous	4.75
Interest on Variable Expenses	6.39
Total Variable Expenses (D)	285.88
Other Expenses/Acre	
Building Repair	0.85
Property Taxes	7.75
Business Overhead	3.73
Machinery Depreciation	45.25
Building Depreciation	1.90
Machinery Investment	31.72
Building Investment	1.36
Land Investment	59.55
Total Other Expenses (E)	152.11
Labour and Management* (F)	
Total Expenses (D+E+F)=(G)	437.99

Return Per Acre

Return Over Variable Expenses (C-D)	152.26
Return Over Total Expenses (C-G)	0.15

Break Even Yield (lbs./ac.)

To Cover Variable Expenses	2,382.34
To Cover Total Expenses	3,649.93

Break Even Price (\$/lb.)

To Cover Variable Expenses	0.08
To Cover Total Expenses	0.12

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (lb./ac.)	2,352.00
Return Over Variable Expenses	-3.64
Return Over Total Expenses	-155.75

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: A seed rate of 181 lb./ac. is used. Faba beans are recommended for the black soil zone.

Fertilization: Inoculant with correct strain of rhizobium should be applied. Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 16.9 lb./ac. N and 80 lb./ac. P₂O₅. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Crop rotation can be used to reduce disease pressure by allowing infected crop residue to decompose between susceptible crops.

Crop Protection

Insect control: Wireworms, cutworms, lygus bugs, potato leafhopper, pea aphid, grasshoppers, and pea leaf weevil might require control. Seed treatments are available for wireworm and pea leaf weevil control. Refer to ministry forecasts of local pea leaf weevil pressures at saskatchewan.ca/agriculture.

Disease control: Chocolate spot is a foliar disease that can result in poor seed set and flower abortion. A single application of fungicides for the management of chocolate spot has been included in this estimate. Fungicide application should be based on disease risk within the growing season.

Weed control: Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used								
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop			Desiccation
		1	2		1	2	3	
✓		✓	✓	✓	✓			✓

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Hybrid Fall Rye

Economics

Revenue Per Acre

	My Farm	Brown	Dark Brown	Black
Target Yield (bu./ac.) (A)		48.8	63.8	66.9
Estimated Farm Gate Price (\$/bu.) (B)		5.23	5.23	5.23
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		255.22	333.67	349.89

Expenses Per Acre

Variable Expenses/Acre				
Seed		69.60	69.60	69.60
- Seed Treatments/Inoculants		0.00	0.00	0.00
Fertilizer - Nitrogen		28.67	37.22	39.24
- Phosphorus (P ₂ O ₅)		10.85	14.01	14.92
- Sulphur and Other		0.00	0.00	0.00
Plant Protection - Herbicides		33.33	33.33	33.33
- Insecticides		0.00	0.00	0.00
- Fungicides		0.00	0.00	0.00
Machinery Operating - Fuel		12.32	15.40	19.25
- Repair		8.57	9.66	10.94
Custom Work and Hired Labour		20.80	21.05	21.05
Crop Insurance Premium		10.10	5.95	5.12
Utilities and Miscellaneous		3.13	4.11	4.75
Interest on Variable Expenses		8.46	9.02	9.36
Total Variable Expenses (D)		205.83	219.35	227.56

Other Expenses/Acre

Building Repair		0.47	0.63	0.85
Property Taxes		3.91	5.11	7.75
Business Overhead		2.08	3.18	3.73
Machinery Depreciation		35.45	39.98	45.25
Building Depreciation		1.05	1.40	1.90
Machinery Investment		24.85	28.02	31.72
Building Investment		0.75	1.00	1.36
Land Investment		55.33	62.36	59.55
Total Other Expenses (E)		123.89	141.68	152.11
Labour and Management* (F)				
Total Expenses (D+E+F)=(G)		329.72	361.03	379.67

Return Per Acre

Return Over Variable Expenses (C-D)		49.39	114.32	122.33
Return Over Total Expenses (C-G)		-74.50	-27.36	-29.78

Break Even Yield (bu./ac.)

To Cover Variable Expenses		39.36	41.94	43.51
To Cover Total Expenses		63.04	69.03	72.59

Break Even Price (\$/bu.)

To Cover Variable Expenses		4.22	3.44	3.40
To Cover Total Expenses		6.76	5.66	5.68

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (bu./ac.)		31.50	39.40	42.50
Return Over Variable Expenses		-41.08	-13.29	-5.28
Return Over Total Expenses		-164.97	-154.97	-157.39

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: Certified seed is needed every year for hybrids. A seeding rate of 0.8 units/ac. is used for all soil zones. One unit is equal to one million viable seed.

Fertilization: Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 78 lb./ac N and 33 lb./ac. P₂O₅ for the black soil zone, 74 lb./ac. N and 31 lb./ac. P₂O₅ for the dark brown soil zone and 57 lb./ac. N and 24 lb./ac. P₂O₅ for the brown soil zone. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Diverse crop rotations are recommended to help reduce disease pressure and suppress weeds to manage herbicide resistance. Fall rye is a very competitive crop that will suppress growth of spring germinating weeds.

Crop Protection

Insect control: Cutworms, aphids, thrips, mites, grasshoppers, armyworm, slugs and wireworms might require control. Seed treatments are available for wireworm control.

Disease control: The cost of fungicide is not included in this estimate. Disease risk assessment is encouraged to guide fungicide application decisions.

Weed control: Rye has very few herbicide options. Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used								
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop			Desiccation
		1	2		1	2	3	
		✓	✓		✓	✓		

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Flax

Economics

Revenue Per Acre

	My Farm	Brown	Dark Brown	Black
Target Yield (bu./ac.) (A)		30.3	33.1	34.3
Estimated Farm Gate Price (\$/bu.) (B)		13.78	13.78	13.78
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		417.53	456.12	472.65

Expenses Per Acre

Variable Expenses/Acre				
Seed		13.60	14.80	15.60
- Seed Treatments/Inoculants		1.78	1.94	2.04
Fertilizer - Nitrogen		35.72	38.73	40.24
- Phosphorus (P ₂ O ₅)		9.49	10.40	10.85
- Sulphur and Other		0.00	0.00	0.00
Plant Protection - Herbicides		64.00	64.00	64.00
- Insecticides		6.07	6.07	6.07
- Fungicides		0.00	29.26	29.26
Machinery Operating - Fuel		12.32	15.40	19.25
- Repair		8.57	9.66	10.94
Custom Work and Hired Labour		20.80	21.05	21.05
Crop Insurance Premium		6.19	5.83	6.76
Utilities and Miscellaneous		3.13	4.11	4.75
Interest on Variable Expenses		4.15	5.06	5.28
Total Variable Expenses (D)		185.83	226.31	236.09
Other Expenses/Acre				
Building Repair		0.47	0.63	0.85
Property Taxes		3.91	5.11	7.75
Business Overhead		2.08	3.18	3.73
Machinery Depreciation		35.45	39.98	45.25
Building Depreciation		1.05	1.40	1.90
Machinery Investment		24.85	28.02	31.72
Building Investment		0.75	1.00	1.36
Land Investment		55.33	62.36	59.55
Total Other Expenses (E)		123.89	141.68	152.11
Labour and Management* (F)				
Total Expenses (D+E+F)=(G)		309.72	367.99	388.20

Return Per Acre

Return Over Variable Expenses (C-D)		231.70	229.81	236.56
Return Over Total Expenses (C-G)		107.81	88.13	84.45

Break Even Yield (bu./ac.)

To Cover Variable Expenses		13.49	16.42	17.13
To Cover Total Expenses		22.48	26.70	28.17

Break Even Price (\$/bu.)

To Cover Variable Expenses		6.13	6.84	6.88
To Cover Total Expenses		10.22	11.12	11.32

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (bu./ac.)		20.10	22.00	22.80
Return Over Variable Expenses		91.15	76.85	78.09
Return Over Total Expenses		-32.74	-64.83	-74.02

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: Seeding rates used are 39 lb./ac. in the black soil zone, 37 lb./ac. in the dark brown soil zone and 34 lb./ac. in the brown soil zone.

Fertilization: Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 80 lb./ac. N and 24 lb./ac. P₂O₅ for the black soil zone, 77 lb./ac. N and 23 lb./ac. P₂O₅ for the dark brown soil zone and 71 lb./ac. N and 21 lb./ac. P₂O₅ for the brown soil zone. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Crop rotation can be used to reduce disease pressure by allowing infected crop residue to decompose between susceptible crops. Flax is not competitive against weeds and very sensitive to herbicide residues in the soil.

Crop Protection

Insect control: Wireworms, cutworms, lygus bugs, potato aphid, grasshoppers, bertha armyworm, armyworm and beet webworm might require control.

Disease control: A single fungicide application for pasmo management has been included in this estimate. Early pasmo infection can result in losses of yield and quality. Fungicide application should be based on disease risk when the crop is susceptible to disease infection.

Weed control: Flax has limited herbicide options. Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used								
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop			Desiccation
		1	2		1	2	3	
		✓	✓	✓	✓	✓		✓

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Large Green Lentils

Economics

Revenue Per Acre

	My Farm	Brown	Dark Brown	Black
Target Yield (lb./ac.) (A)		1,769.60	1,881.60	1,814.40
Estimated Farm Gate Price (\$/lb.) (B)		0.25	0.25	0.25
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		442.40	470.40	453.60

Expenses Per Acre

Variable Expenses/Acre				
Seed		34.13	34.13	34.13
- Seed Treatments/Inoculants		13.01	13.01	13.01
Fertilizer - Nitrogen		2.02	2.23	2.13
- Phosphorus (P ₂ O ₅)		8.59	9.49	9.04
- Sulphur and Other		0.00	0.00	0.00
Plant Protection - Herbicides		75.09	75.09	75.09
- Insecticides		5.45	5.45	5.45
- Fungicides		7.38	7.38	7.38
Machinery Operating - Fuel		13.77	17.21	21.52
- Repair		8.57	9.66	10.94
Custom Work and Hired Labour		21.80	21.05	22.80
Crop Insurance Premium		12.35	14.87	13.90
Utilities and Miscellaneous		3.13	4.11	4.75
Interest on Variable Expenses		4.69	4.89	5.03
Total Variable Expenses (D)		209.98	218.57	225.17
Other Expenses/Acre				
Building Repair		0.47	0.63	0.85
Property Taxes		3.91	5.11	7.75
Business Overhead		2.08	3.18	3.73
Machinery Depreciation		35.45	39.98	45.25
Building Depreciation		1.05	1.40	1.90
Machinery Investment		24.85	28.02	31.72
Building Investment		0.75	1.00	1.36
Land Investment		55.33	62.36	59.55
Total Other Expenses (E)		123.89	141.68	152.11
Labour and Management* (F)				
Total Expenses (D+E+F)=(G)		333.88	360.24	377.29

Return Per Acre

Return Over Variable Expenses (C-D)		232.42	251.83	228.43
Return Over Total Expenses (C-G)		108.52	110.16	76.31

Break Even Yield (lbs./ac.)

To Cover Variable Expenses		839.94	874.26	900.70
To Cover Total Expenses		1,335.50	1,440.98	1,509.15

Break Even Price (\$/lb.)

To Cover Variable Expenses		0.12	0.12	0.12
To Cover Total Expenses		0.19	0.19	0.21

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (lb./ac.)		1,120.00	1,209.60	1,120.00
Return Over Variable Expenses		70.02	83.83	54.83
Return Over Total Expenses		-53.88	-57.84	-97.29

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: A seed rate of 91 lb./ac. is used for all soil zones.

Fertilization: Inoculant with the correct strains of rhizobium should be applied. Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 4.2 lb./ac. N and 20 lb./ac. P₂O₅ for the black soil zone, 4.4 lb./ac. N and 21 lb./ac. P₂O₅ for the dark brown soil zone and 4 lb./ac. N and 19 lb./ac. P₂O₅ for the brown soil zone. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Crop rotation will help to reduce disease pressure by reducing pathogen levels in the field. Extended rotations are essential in fields with risk of aphanomyces root rot. Lentils are not competitive with weeds.

Crop Protection

Insect control: Wireworms, cutworms lygus bugs, potato leafhopper, pea aphid and grasshoppers might require control. Seed treatments are available for wireworm control.

Disease control: Fungicides will offer protection against foliar diseases such as anthracnose. Fungicide application should be based on disease risk. This estimation includes the cost of a single fungicide application. In years with high disease pressure and extended periods of favorable environmental conditions, more than one fungicide application may be required.

Weed control: Lentils need to be kept weed-free until the 10 node stage to minimize yield losses. Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used								
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop			Desiccation
		1	2		1	2	3	
✓		✓	✓	✓	✓	✓	✓	✓

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Red Lentils

Economics

Revenue Per Acre

	My Farm	Brown	Dark Brown	Black
Target Yield (lb./ac.) (A)		2,083.20	2,172.80	2,352.00
Estimated Farm Gate Price (\$/lb.) (B)		0.20	0.20	0.20
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		416.64	434.56	470.40

Expenses Per Acre

Variable Expenses/Acre				
Seed		17.92	17.92	17.92
- Seed Treatments/Inoculants		16.32	16.32	16.32
Fertilizer - Nitrogen		2.45	2.55	2.77
- Phosphorus (P ₂ O ₅)		10.40	10.85	11.75
- Sulphur and Other		0.00	0.00	0.00
Plant Protection - Herbicides		75.09	75.09	75.09
- Insecticides		5.45	5.45	5.45
- Fungicides		7.38	7.38	7.38
Machinery Operating - Fuel		13.77	17.21	21.52
- Repair		8.57	9.66	10.94
Custom Work and Hired Labour		21.80	21.05	22.80
Crop Insurance Premium		12.03	12.39	13.04
Utilities and Miscellaneous		3.13	4.11	4.75
Interest on Variable Expenses		4.44	4.57	4.80
Total Variable Expenses (D)		198.75	204.55	214.53
Other Expenses/Acre				
Building Repair		0.47	0.63	0.85
Property Taxes		3.91	5.11	7.75
Business Overhead		2.08	3.18	3.73
Machinery Depreciation		35.45	39.98	45.25
Building Depreciation		1.05	1.40	1.90
Machinery Investment		24.85	28.02	31.72
Building Investment		0.75	1.00	1.36
Land Investment		55.33	62.36	59.55
Total Other Expenses (E)		123.89	141.68	152.11
Labour and Management* (F)				
Total Expenses (D+E+F)=(G)		322.65	346.23	366.64

Return Per Acre

Return Over Variable Expenses (C-D)		217.89	230.01	255.87
Return Over Total Expenses (C-G)		93.99	88.33	103.76

Break Even Yield (lbs./ac.)

To Cover Variable Expenses		993.77	1,022.76	1,072.63
To Cover Total Expenses		1,613.23	1,731.16	1,833.20

Break Even Price (\$/lb.).

To Cover Variable Expenses		0.10	0.09	0.09
To Cover Total Expenses		0.15	0.16	0.16

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (lb./ac.)		1,366.00	1,411.20	1,568.00
Return Over Variable Expenses		74.45	77.69	99.07
Return Over Total Expenses		-49.45	-63.99	-53.04

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: A seed rate of 56 lb./ac. is used for all soil zones.

Fertilization: Inoculant with the correct strains of rhizobium should be applied. Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 5.5 lb./ac. N and 26 lb./ac. P₂O₅ for the black soil zone, 5.1 lb./ac. N and 24 lb./ac. P₂O₅ for the dark brown soil zone and 4.9 lb./ac. N and 23 lb./ac. P₂O₅ for the brown soil zone. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Crop rotation will help to reduce disease pressure by reducing pathogen levels in the field. Extended rotations are essential in fields with risk of aphanomyces root rot. Lentils are not competitive with weeds.

Crop Protection

Insect control: Wireworms, cutworms, lygus bugs, potato leafhopper, pea aphid and grasshoppers might require control. Seed treatments are available for wireworm control.

Disease control: Fungicides will offer protection against foliar diseases such as anthracnose. Fungicide application should be based on disease risk. This estimation includes the cost of a single fungicide application. In years with high disease pressure and extended periods of favorable environmental conditions, more than one fungicide application may be required.

Weed control: Lentils need to be kept weed free until the 10 node stage to minimize yield losses. Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used								
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop			Desiccation
		1	2		1	2	3	
✓		✓	✓	✓	✓	✓	✓	✓

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Oats

Economics

Revenue Per Acre

	My Farm	Brown	Dark Brown	Black
Target Yield (bu./ac.) (A)		79.1	103.7	139.4
Estimated Farm Gate Price (\$/bu.) (B)		3.02	3.02	3.02
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		238.88	313.17	420.99

Expenses Per Acre

Variable Expenses/Acre				
Seed		21.12	26.40	31.68
- Seed Treatments/Inoculants		8.05	8.87	10.06
Fertilizer - Nitrogen		27.16	35.72	47.79
- Phosphorus (P ₂ O ₅)		9.94	13.11	14.92
- Sulphur and Other		0.00	0.00	0.00
Plant Protection - Herbicides		19.39	19.39	19.39
- Insecticides		6.07	6.07	6.07
- Fungicides		0.00	0.00	10.50
Machinery Operating - Fuel		12.32	15.40	19.25
- Repair		8.57	9.66	10.94
Custom Work and Hired Labour		20.80	21.05	21.05
Crop Insurance Premium		5.52	5.53	6.13
Utilities and Miscellaneous		3.13	4.11	4.75
Interest on Variable Expenses		3.25	3.78	4.63
Total Variable Expenses (D)		145.32	169.09	207.16
Other Expenses/Acre				
Building Repair		0.47	0.63	0.85
Property Taxes		3.91	5.11	7.75
Business Overhead		2.08	3.18	3.73
Machinery Depreciation		35.45	39.98	45.25
Building Depreciation		1.05	1.40	1.90
Machinery Investment		24.85	28.02	31.72
Building Investment		0.75	1.00	1.36
Land Investment		55.33	62.36	59.55
Total Other Expenses (E)		123.89	141.68	152.11
Labour and Management* (F)				
Total Expenses (D+E+F)=(G)		269.21	310.77	359.27

Return Per Acre

Return Over Variable Expenses (C-D)		93.56	144.08	213.83
Return Over Total Expenses (C-G)		-30.33	2.40	61.72

Break Even Yield (bu./ac.)

To Cover Variable Expenses		48.12	55.99	68.60
To Cover Total Expenses		89.14	102.90	118.97

Break Even Price (\$/bu.)

To Cover Variable Expenses		1.84	1.63	1.49
To Cover Total Expenses		3.40	3.00	2.58

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (bu./ac.)		41.50	65.50	99.90
Return Over Variable Expenses		-19.99	28.72	94.54
Return Over Total Expenses		-143.88	-112.96	-57.57

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: Seeding rates are based on a target plant stand in plants per square foot. This guide assumes a producer will seed to achieve 30 plants per square foot in the black soil zone, 25 in the dark brown soil zone and 20 in the brown soil zone, with a thousand kernel weight of 37.5 and 85 per cent emergence.

Fertilization: Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 95 lb./ac. N and 39 lb./ac. P₂O₅ for the black soil zone, 71 lb./ac. N and 29 lb./ac. P₂O₅ for the dark brown soil zone and 54 lb./ac. N and 22 lb./ac. P₂O₅ for the brown soil zone. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Diverse crop rotations are recommended to help reduce disease pressure as well as suppress weeds to manage herbicide resistance. Oat is a very competitive crop that will suppress growth of spring germinating weeds. Wild oats cannot be controlled in tame oat with herbicides.

Crop Protection

Insect control: Cutworms, aphids, thrips, mites, grasshoppers, armyworm, slugs and wireworms might require control. Seed treatments are available for wireworm control.

Disease control: Leaf diseases may result in yield losses in oat crops. Fungicide application can be used to protect leaf tissue from disease infection. This estimation includes the cost of a single fungicide application in the black soil zone. Fungicide application should be based on disease pressure in the field.

Weed control: Because oats are very competitive, growers can often reduce the number of herbicide applications from those listed. Some buyers of milling oats do not allow use of pre-harvest glyphosate in their contracts. Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used							
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop		
		1	2		1	2	3
	✓	✓	✓		✓		

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Edible Green Peas

Economics

Revenue Per Acre

	My Farm	Brown	Dark Brown	Black
Target Yield (bu./ac.) (A)		43.7	51.1	58.4
Estimated Farm Gate Price (\$/bu.) (B)		12.13	12.13	12.13
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		530.08	619.84	708.39

Expenses Per Acre

Variable Expenses/Acre				
Seed		36.99	42.12	47.52
- Seed Treatments/Inoculants		10.88	12.39	13.98
Fertilizer - Nitrogen		3.51	4.15	4.68
- Phosphorus (P ₂ O ₅)		14.92	17.63	19.89
- Sulphur and Other		0.00	0.00	0.00
Plant Protection - Herbicides		72.55	72.55	72.55
- Insecticides		5.45	5.45	5.45
- Fungicides		29.26	29.26	29.26
Machinery Operating - Fuel		13.77	17.21	21.52
- Repair		8.57	9.66	10.94
Custom Work and Hired Labour		20.30	20.30	20.30
Crop Insurance Premium		5.27	5.66	6.25
Utilities and Miscellaneous		3.13	4.11	4.75
Interest on Variable Expenses		5.14	5.50	5.88
Total Variable Expenses (D)		229.74	245.99	262.97
Other Expenses/Acre				
Building Repair		0.47	0.63	0.85
Property Taxes		3.91	5.11	7.75
Business Overhead		2.08	3.18	3.73
Machinery Depreciation		35.45	39.98	45.25
Building Depreciation		1.05	1.40	1.90
Machinery Investment		24.85	28.02	31.72
Building Investment		0.75	1.00	1.36
Land Investment		55.33	62.36	59.55
Total Other Expenses (E)		123.89	141.68	152.11
Labour and Management* (F)				
Total Expenses (D+E+F)=(G)		353.63	387.67	415.08

Return Per Acre

Return Over Variable Expenses (C-D)		300.34	373.85	445.42
Return Over Total Expenses (C-G)		176.45	232.17	293.31

Break Even Yield (bu./ac.)

To Cover Variable Expenses		18.94	20.28	21.68
To Cover Total Expenses		29.15	31.96	34.22

Break Even Price (\$/bu.)

To Cover Variable Expenses		5.26	4.81	4.50
To Cover Total Expenses		8.09	7.59	7.11

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (bu./ac.)		28.70	34.90	40.40
Return Over Variable Expenses		118.39	177.35	227.08
Return Over Total Expenses		-5.50	35.67	74.97

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: A seed rate of 176 lb./ac. is used in the black soil zone, 156 lb/ac in the dark brown soil zone and 137 lb./ac. in the brown soil zone.

Fertilization: Inoculant with the correct strains of rhizobium should be applied. Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 9.3 lb./ac. N and 44 lb./ac. P₂O₅ for the black soil zone, 8.3 lb./ac. N and 39 lb./ac. P₂O₅ for the dark brown soil zone and 7 lb./ac. N and 33 lb./ac. P₂O₅ for the brown soil zone. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Crop rotation will help to reduce pea leaf weevil and disease pressure by reducing pathogen levels in the field. Extended rotations are essential in fields with risk of aphanomyces root rot.

Crop Protection

Insect control: Wireworms, cutworms, lygus bugs, leafhoppers, pea aphid, grasshoppers, alfalfa looper and pea leaf weevil might require control. Seed treatments are available for wireworm and pea leaf weevil control. Refer to the ministry's forecasts of local pea leaf weevil pressures at saskatchewan.ca/agriculture.

Disease control: Fungicides will offer protection against foliar diseases such as mycosphaerella blight. This estimation includes the cost of a single fungicide application. Fungicide application should be based on disease risk.

Weed control: Weeds in peas need to be controlled until 10 to 14 days after emergence to minimize yield losses. Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used							
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop		
		1	2		1	2	3
✓		✓	✓	✓	✓	✓	✓

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Edible Yellow Peas

Economics

Revenue Per Acre

	My Farm	Brown	Dark Brown	Black
Target Yield (bu./ac.) (A)		43.7	51.1	58.4
Estimated Farm Gate Price (\$/bu.) (B)		6.85	6.85	6.85
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		299.35	350.04	400.04

Expenses Per Acre

Variable Expenses/Acre				
Seed		31.74	36.34	40.94
- Seed Treatments/Inoculants		10.96	12.55	14.14
Fertilizer - Nitrogen		3.51	4.15	4.68
- Phosphorus (P ₂ O ₅)		14.92	17.63	19.89
- Sulphur and Other		0.00	0.00	0.00
Plant Protection - Herbicides		72.55	72.55	72.55
- Insecticides		0.00	0.00	0.00
- Fungicides		29.26	29.26	29.26
Machinery Operating - Fuel		13.77	17.21	21.52
- Repair		8.57	9.66	10.94
Custom Work and Hired Labour		20.30	20.30	20.30
Crop Insurance Premium		5.27	5.66	6.25
Utilities and Miscellaneous		3.13	4.11	4.75
Interest on Variable Expenses		4.89	5.25	5.61
Total Variable Expenses (D)		218.87	234.67	250.83
Other Expenses/Acre				
Building Repair		0.47	0.63	0.85
Property Taxes		3.91	5.11	7.75
Business Overhead		2.08	3.18	3.73
Machinery Depreciation		35.45	39.98	45.25
Building Depreciation		1.05	1.40	1.90
Machinery Investment		24.85	28.02	31.72
Building Investment		0.75	1.00	1.36
Land Investment		55.33	62.36	59.55
Total Other Expenses (E)		123.89	141.68	152.11
Labour and Management* (F)				
Total Expenses (D+E+F)=(G)		342.76	376.35	402.94

Return Per Acre

Return Over Variable Expenses (C-D)		80.48	115.37	149.21
Return Over Total Expenses (C-G)		-43.41	-26.31	-2.90

Break Even Yield (bu./ac.)

To Cover Variable Expenses		31.95	34.26	36.62
To Cover Total Expenses		50.04	54.94	58.82

Break Even Price (\$/bu.)

To Cover Variable Expenses		5.01	4.59	4.29
To Cover Total Expenses		7.84	7.36	6.90

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (bu./ac.)		28.70	34.90	40.40
Return Over Variable Expenses		-22.27	4.40	25.91
Return Over Total Expenses		-146.16	-137.28	-126.20

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: A seed rate of 178 lb./ac. is used in the black soil zone, 158 lb./ac. in the dark brown soil zone and 138 lb./ac. in the brown soil zone.

Fertilization: Inoculant with the correct strains of rhizobium should be applied. Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 9.3 lb./ac. N and 44 lb./ac. P₂O₅ for the black soil zone, 8.3 lb./ac. N and 39 lb./ac. P₂O₅ for the dark brown soil zone and 7 lb./ac. N and 33 lb./ac. P₂O₅ for the brown soil zone. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Crop rotation will help to reduce pea leaf weevil and disease pressure by reducing pathogen levels in the field. Extended rotations are essential in fields with risk of aphanomyces root rot.

Crop Protection

Insect control: Wireworms, cutworms, lygus bugs, leafhoppers, pea aphid, grasshoppers, alfalfa looper and pea leaf weevil might require control. Seed treatments are available for wireworm and pea leaf weevil control. Refer to the ministry's forecasts of local pea leaf weevil pressures at saskatchewan.ca/agriculture.

Disease control: Fungicides will offer protection against foliar diseases, such as mycosphaerella blight. This estimation includes the cost of a single fungicide application. Fungicide application should be based on disease risk.

Weed control: Weeds in peas need to be controlled until 10 to 14 days after emergence to minimize yield losses. Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used								
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop			Desiccation
		1	2		1	2	3	
✓		✓	✓	✓	✓	✓		✓

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Soybean

Economics

Revenue Per Acre

	My Farm	Brown	Dark Brown	Black
Target Yield (bu./ac.) (A)		31.6	33.4	37.1
Estimated Farm Gate Price (\$/bu.) (B)		10.66	10.66	10.66
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		336.86	356.04	395.49

Expenses Per Acre

Variable Expenses/Acre				
Seed		98.00	98.00	98.00
- Seed Treatments/Inoculants		14.00	14.00	14.00
Fertilizer - Nitrogen		2.55	2.66	2.98
- Phosphorus (P ₂ O ₅)		10.85	11.30	12.66
- Sulphur and Other		0.00	0.00	0.00
Plant Protection - Herbicides		57.24	57.24	57.24
- Insecticides		5.45	5.45	5.45
- Fungicides		0.00	0.00	0.00
Machinery Operating - Fuel		13.77	17.21	21.52
- Repair		8.57	9.66	10.94
Custom Work and Hired Labour		23.05	22.05	22.30
Crop Insurance Premium		7.52	6.28	6.52
Utilities and Miscellaneous		3.13	4.11	4.75
Interest on Variable Expenses		5.58	5.67	5.86
Total Variable Expenses (D)		249.71	253.63	262.22

Other Expenses/Acre

Building Repair		0.47	0.63	0.85
Property Taxes		3.91	5.11	7.75
Business Overhead		2.08	3.18	3.73
Machinery Depreciation		35.45	39.98	45.25
Building Depreciation		1.05	1.40	1.90
Machinery Investment		24.85	28.02	31.72
Building Investment		0.75	1.00	1.36
Land Investment		55.33	62.36	59.55
Total Other Expenses (E)		123.89	141.68	152.11
Labour and Management* (F)				
Total Expenses (D+E+F)=(G)		373.60	395.31	414.34

Return Per Acre

Return Over Variable Expenses (C-D)		87.15	102.41	133.27
Return Over Total Expenses (C-G)		-36.74	-39.27	-18.85

Break Even Yield (bu./ac.)

To Cover Variable Expenses		23.43	23.79	24.60
To Cover Total Expenses		35.05	37.08	38.87

Break Even Price (\$/bu.)

To Cover Variable Expenses		7.90	7.59	7.07
To Cover Total Expenses		11.82	11.84	11.17

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (bu./ac.)		19.80	22.40	27.20
Return Over Variable Expenses		-38.64	-14.85	27.73
Return Over Total Expenses		-162.53	-156.53	-124.39

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: A plant population of four to five per square foot is recommended. This corresponds to 150,000 to 200,000 plants per acre. Seed survivability averages 75 per cent, which is usually achieved when using a drill. Solid seeded soybeans with narrow rows (eight to 10 in.) improve crop yields, raise the height of bottom pods and reduce the need for multiple in-crop herbicide applications for weed control.

Fertilization: Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 5.9 lb./ac. N and 28 lb./ac. P₂O₅ for the black soil zone, 5.3 lb./ac. N and 25 lb./ac. P₂O₅ for the dark brown soil zone and 5.1 lb./ac. N and 24 lb./ac. P₂O₅ for the brown soil zone. Producers are encouraged to use their own rates based on soil tests. Soybean requires a specific species of rhizobia not native to Saskatchewan soil. Double inoculation is recommended on new fields. Most varieties come pre-treated and pre-liquid inoculated. Addition of a second inoculant of granular or peat is recommended.

Crop Rotation: Crop rotation will help to reduce disease pressure by reducing or maintaining low pathogen levels in the field. Soybeans are not competitive with weeds.

Crop Protection

Insect control: Wireworms, seedcorn maggot, cutworms, soybean aphid, leafhoppers, lygus bugs, spider mites, armyworms, corn earworm and grasshoppers might require control. Seed treatments are available for wireworm and seedcorn maggot control.

Disease control: The cost of fungicide is not included in this estimate. Disease risk assessment is encouraged to guide fungicide application decisions.

Weed control: Soybeans need to be kept free of weeds from the first trifoliate leaf to the third trifoliate leaf to minimize yield losses. Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used								
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop			Desiccation
		1	2		1	2	3	
		✓	✓		✓	✓		✓

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Durum Wheat

Economics

Revenue Per Acre

	My Farm	Brown	Dark Brown
Target Yield (bu./ac.) (A)		52.9	60.6
Estimated Farm Gate Price (\$/bu.) (B)		6.61	6.61
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		349.67	400.57

Expenses Per Acre

Variable Expenses/Acre			
Seed		27.30	30.16
- Seed Treatments/Inoculants		9.60	10.61
Fertilizer - Nitrogen		43.76	50.30
- Phosphorus (P ₂ O ₅)		15.37	17.63
- Sulphur and Other		0.00	0.00
Plant Protection - Herbicides		34.80	34.80
- Insecticides		6.07	6.07
- Fungicides		11.85	11.85
Machinery Operating - Fuel		12.32	15.40
- Repair		8.57	9.66
Custom Work and Hired Labour		22.30	22.05
Crop Insurance Premium		5.20	5.89
Utilities and Miscellaneous		3.11	4.11
Interest on Variable Expenses		4.58	5.00
Total Variable Expenses (D)		204.83	223.53
Other Expenses/Acre			
Building Repair		0.47	0.63
Property Taxes		3.91	5.11
Business Overhead		2.08	3.18
Machinery Depreciation		35.45	39.98
Building Depreciation		1.05	1.40
Machinery Investment		24.85	28.02
Building Investment		0.75	1.00
Land Investment		55.33	62.36
Total Other Expenses (E)		123.89	141.68
Labour and Management* (F)			
Total Expenses (D+E+F)=(G)		328.72	365.21

Return Per Acre

Return Over Variable Expenses (C-D)	144.84	177.04
Return Over Total Expenses (C-G)	20.95	35.36

Break Even Yield (bu./ac.)

To Cover Variable Expenses	30.99	33.82
To Cover Total Expenses	49.73	55.25

Break Even Price(\$/bu.)

To Cover Variable Expenses	3.87	3.69
To Cover Total Expenses	6.21	6.03

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (bu./ac.)	42.30	37.50
Return Over Variable Expenses	74.77	24.35
Return Over Total Expenses	-49.12	-117.33

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: Seeding rates are based on a target plant stand in plants per square foot. This guide assumes a producer will seed to achieve 22 plants per square foot in dark brown soil zone and 20 in the brown soil zone, with a thousand kernel weight of 42.1 and 85 per cent emergence. Durum is recommended in the brown and dark brown soil zones.

Fertilization: Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 100 lb./ac. N and 39 lb./ac. P₂O₅ for the dark brown soil zone and 87 lb./ac. N and 34 lb./ac. P₂O₅ for the brown soil zone. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Diverse crop rotations are recommended to help reduce disease pressure and suppress weed growth. Like all cereals, durum is relatively competitive crop against weeds.

Crop Protection

Insect control: Wheat midge, cutworms, aphids, thrips, mite, grasshoppers, armyworms, slugs, wheat stem sawfly and wireworms might require control. Varietal blends with resistance are available if heavy wheat midge pressures are anticipated. Wheat stem sawfly-resistant varieties are available. Seed treatments are available for wireworm control. An insecticide application to control wheat midge is assumed, but in practice should be made based on scouting to determine economic risk. No insecticide applications for wheat midge would be required for midge tolerant varieties.

Disease control: Cereal crops can be affected by both leaf diseases and fusarium head blight (FHB). When disease pressure is moderate, a single application at FHB timing can be effective in managing both types of diseases. This estimation includes the cost of a single fungicide application. When disease pressure is high an additional fungicide application for leaf diseases might be required. Fungicide applications should be made based on field history and disease risk during the growing season.

Weed control: Durum lacks many options for soil-applied herbicides for herbicide layering programs. Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used							
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop		
		1	2		1	2	3
		✓	✓		✓	✓	

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Spring Wheat

Economics

Revenue Per Acre

	My Farm	Brown	Dark Brown	Black
Target Yield (bu./ac.) (A)		38.9	57.0	64.7
Estimated Farm Gate Price (\$/bu.) (B)		6.42	6.42	6.42
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		249.74	365.94	415.37

Expenses Per Acre

Variable Expenses/Acre				
Seed		19.78	21.85	24.84
- Seed Treatments/Inoculants		7.87	8.69	9.88
Fertilizer - Nitrogen		32.19	47.29	53.83
- Phosphorus (P ₂ O ₅)		11.30	17.63	18.98
- Sulphur and Other		0.00	0.00	0.00
Plant Protection - Herbicides		45.24	45.24	45.24
- Insecticides		6.07	6.07	6.07
- Fungicides		11.85	11.85	11.85
Machinery Operating - Fuel		12.32	15.40	19.25
- Repair		8.57	9.66	10.94
Custom Work and Hired Labour		22.30	22.05	23.05
Crop Insurance Premium		3.84	3.99	4.91
Utilities and Miscellaneous		3.13	4.11	4.75
Interest on Variable Expenses		4.22	4.89	5.34
Total Variable Expenses (D)		188.67	218.71	238.93
Other Expenses/Acre				
Building Repair		0.47	0.63	0.85
Property Taxes		3.91	5.11	7.75
Business Overhead		2.08	3.18	3.73
Machinery Depreciation		35.45	39.98	45.25
Building Depreciation		1.05	1.40	1.90
Machinery Investment		24.85	28.02	31.72
Building Investment		0.75	1.00	1.36
Land Investment		55.33	62.36	59.55
Total Other Expenses (E)		123.89	141.68	152.11
Labour and Management* (F)				
Total Expenses (D+E+F)=(G)		312.57	360.39	391.04

Return Per Acre

Return Over Variable Expenses (C-D)		61.07	147.23	176.44
Return Over Total Expenses (C-G)		-62.83	5.55	24.33

Break Even Yield (bu./ac.)

To Cover Variable Expenses		29.39	34.07	37.22
To Cover Total Expenses		48.69	56.14	60.91

Break Even Price (\$/bu.)

To Cover Variable Expenses		4.85	3.84	3.69
To Cover Total Expenses		8.04	6.32	6.04

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (bu./ac.)		34.20	42.60	49.60
Return Over Variable Expenses		30.89	54.78	79.50
Return Over Total Expenses		-93.01	-86.90	-72.61

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: Seeding rates are based on a target plant stand in plants per square foot. This guide assumes a producer will seed to achieve 25 plants per square foot in the black soil zone, 22 in the dark brown soil zone and 20 in the brown soil zone, with a thousand kernel weight of 34.5 grams and 85 per cent emergence.

Fertilization: Fertility costs are based on nutrient removal rates given the target yield. These are: 107 lb./ac. N and 42 lb./ac. P₂O₅ for the black soil zone, 94 lb./ac. N and 37 lb./ac. P₂O₅ for the dark brown soil zone and 64 lb./ac. N and 25 lb./ac. P₂O₅ for the brown soil zone. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Rotation plays an important role in the suppression of weed growth. A break between cereal crops will help reduce disease pressure by allowing infested crop residue to decompose.

Crop Protection

Insect control: Wheat midge, cutworms, aphids, thrips, mites, grasshoppers, armyworms, slugs, wheat stem sawfly and wireworms might require control. An insecticide application to control wheat midge is assumed, but in practice should be made based on scouting to determine economic risk. No insecticide application for wheat midge would be required for midge tolerant varieties. Please refer to the Guide to Crop Protection available at saskatchewan.ca/agriculture for registered pest control products for specific pests.

Disease control: Cereal crops can be affected by both leaf diseases and fusarium head blight (FHB). When disease pressure is moderate, a single application at FHB timing can be effective in managing both types of diseases. This estimation includes the cost of a single fungicide application. When disease pressure is high, an additional fungicide application for leaf diseases may be required. Fungicide applications should be made based on field history and disease risk during the growing season.

Weed control: Spring wheat has many herbicide options to choose from. Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used							
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop		
		1	2		1	2	3
		✓	✓	✓	✓	✓	

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Winter Wheat

Economics

Revenue Per Acre

	My Farm	Brown	Dark Brown	Black
Target Yield (bu./ac.) (A)		56.2	60.6	68.3
Estimated Farm Gate Price (\$/bu.) (B)		5.05	5.05	5.05
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		283.81	306.03	344.92

Expenses Per Acre

Variable Expenses/Acre				
Seed		24.86	27.72	29.70
- Seed Treatments/Inoculants		7.27	8.11	8.69
Fertilizer - Nitrogen		32.19	34.71	39.24
- Phosphorus (P ₂ O ₅)		14.01	15.37	17.18
- Sulphur and Other		0.00	0.00	0.00
Plant Protection - Herbicides		65.27	65.27	65.27
- Insecticides		6.07	6.07	6.07
- Fungicides		0.00	0.00	10.50
Machinery Operating - Fuel		12.32	15.40	19.25
- Repair		8.57	9.66	10.94
Custom Work and Hired Labour		22.30	22.05	23.05
Crop Insurance Premium		6.93	4.95	5.11
Utilities and Miscellaneous		3.13	4.11	4.75
Interest on Variable Expenses		8.70	9.15	10.28
Total Variable Expenses (D)		211.63	222.57	250.03
Other Expenses/Acre				
Building Repair		0.47	0.63	0.85
Property Taxes		3.91	5.11	7.75
Business Overhead		2.08	3.18	3.73
Machinery Depreciation		35.45	39.98	45.25
Building Depreciation		1.05	1.40	1.90
Machinery Investment		24.85	28.02	31.72
Building Investment		0.75	1.00	1.36
Land Investment		55.33	62.36	59.55
Total Other Expenses (E)		123.89	141.68	152.11
Labour and Management* (F)				
Total Expenses (D+E+F)=(G)		335.52	364.25	402.14

Return Per Acre

Return Over Variable Expenses (C-D)		72.18	83.46	94.89
Return Over Total Expenses (C-G)		-51.71	-58.22	-57.22

Break Even Yield (bu./ac.)

To Cover Variable Expenses		41.91	44.07	49.51
To Cover Total Expenses		66.44	72.13	79.63

Break Even Price (\$/bu.)

To Cover Variable Expenses		3.77	3.67	3.66
To Cover Total Expenses		5.97	6.01	5.89

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (bu./ac.)		38.60	42.30	50.70
Return Over Variable Expenses		-16.70	-8.95	6.01
Return Over Total Expenses		-140.59	-150.63	-146.10

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: Seeding rates are based on a target plant stand in plants per square foot. This guide assumes a producer will seed to achieve 30 plants per square foot in the black soil zone, 28 in the dark brown soil zone and 25 in the brown soil zone, with a thousand kernel weight of 36 and 85 per cent emergence.

Fertilization: Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 78 lb./ac. N and 38 lb./ac. P₂O₅ for the black soil zone, 69 lb./ac. N and 34 lb./ac. P₂O₅ for the dark brown soil zone and 64 lb./ac. N and 31 lb./ac. P₂O₅ for the brown soil zone. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Diverse crop rotations are recommended to help reduce disease pressure and suppress weeds to manage herbicide resistance. Winter wheat is a very competitive crop that will suppress growth of spring germinating weeds.

Crop Protection

Insect control: Wheat midge, cutworms, aphids, thrips, mites, grasshoppers, armyworms, slugs and wireworms might require control. Seed treatments are available for wireworm control. Winter wheat can be affected by both leaf diseases and fusarium head blight (FHB). However, winter wheat crops typically pass the susceptible growth stage when conditions favor FHB development.

Disease control: Fungicide applications in winter wheat typically target leaf diseases. This estimation includes the cost of a single fungicide application for leaf diseases in the black soil zone. Fungicide applications should be made based on field history and disease risk during the growing season.

Weed control: Winter wheat is prone to infestation with winter annual weeds, particularly downy and Japanese brome. Herbicide choices were made with this weed in mind, but should be adjusted on individual farms based on the weeds present. Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used								
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop			Desiccation
		1	2		1	2	3	
✓		✓	✓	✓	✓	✓		

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Camelina

Economics

	My Farm	Brown
Revenue Per Acre		
Target Yield (lbs./ac.) (A)		1,568.00
Estimated Farm Gate Price (\$/lb.) (B)		0.25
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		392.00
Expenses Per Acre		
Variable Expenses/Acre		
Seed		21.00
- Seed Treatments/Inoculants		0.00
Fertilizer - Nitrogen		36.22
- Phosphorus (P ₂ O ₅)		9.04
- Sulphur and Other		6.17
Plant Protection - Herbicides		7.81
- Insecticides		0.00
- Fungicides		0.00
Machinery Operating - Fuel		19.03
- Repair		8.57
Custom Work and Hired Labour		20.30
Crop Insurance Premium		3.17
Utilities and Miscellaneous		3.13
Interest on Variable Expenses		3.07
Total Variable Expenses (D)		137.51
Other Expenses/Acre		
Building Repair		0.47
Property Taxes		3.91
Business Overhead		2.08
Machinery Depreciation		35.45
Building Depreciation		1.05
Machinery Investment		24.85
Building Investment		0.75
Land Investment		55.33
Total Other Expenses (E)		123.89
Labour and Management* (F)		
Total Expenses (D+E+F)=(G)		261.41
Return Per Acre		
Return Over Variable Expenses (C-D)		254.49
Return Over Total Expenses (C-G)		130.59
Break Even Yield (lbs./ac.)		
To Cover Variable Expenses		550.06
To Cover Total Expenses		1,045.62
Break Even Price (\$/lb.)		
To Cover Variable Expenses		0.09
To Cover Total Expenses		0.17

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (lb./ac.)	1,209.00
Return Over Variable Expenses	164.74
Return Over Total Expenses	40.84

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: A seed rate of 6 lb./ac. is used. Camelina is commonly grown in the brown soil zone.

Fertilization: Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 72 lb./ac. N, 20 lb./ac. P₂O₅ and 15 lb./ac. S. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Crop rotation can be used to reduce disease pressure by allowing infected crop residue to decompose between susceptible crops.

Crop Protection

Insect control: Only one biological insecticide, with efficacy against bertha armyworm and diamondback moth, is registered for this crop.

Disease control: The cost of fungicide is not included in this estimate. Disease risk assessment is encouraged to guide fungicide application decisions.

Weed control: Camelina has no registered herbicide options other than a pre-harvest application of glyphosate in the previous crop to manage perennial weeds as well as a glyphosate burn off prior to seeding.

Application Timing Window Used							
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop		
		1	2		1	2	3
✓							

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Canaryseed

Economics

	My Farm	Dark Brown
Revenue Per Acre		
Target Yield (lbs./ac.) (A)		1,926.00
Estimated Farm Gate Price (\$/lb.) (B)		0.26
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		500.76
Expenses Per Acre		
Variable Expenses/Acre		
Seed		18.50
- Seed Treatments/Inoculants		0.00
Fertilizer - Nitrogen		32.19
- Phosphorus (P ₂ O ₅)		24.41
- Sulphur and Other		18.85
Plant Protection - Herbicides		46.15
- Insecticides		19.95
- Fungicides		10.05
Machinery Operating - Fuel		18.12
- Repair		9.66
Custom Work and Hired Labour		19.80
Crop Insurance Premium		5.49
Utilities and Miscellaneous		4.11
Interest on Variable Expenses		5.20
Total Variable Expenses (D)		232.48
Other Expenses/Acre		
Building Repair		0.63
Property Taxes		5.11
Business Overhead		3.18
Machinery Depreciation		39.98
Building Depreciation		1.40
Machinery Investment		28.02
Building Investment		1.00
Land Investment		62.36
Total Other Expenses (E)		141.68
Labour and Management* (F)		
Total Expenses (D+E+F)=(G)		374.16
Return Per Acre		
Return Over Variable Expenses (C-D)		268.28
Return Over Total Expenses (C-G)		126.60
Break Even Yield (lbs./ac.)		
To Cover Variable Expenses		894.14
To Cover Total Expenses		1,439.06
Break Even Price (\$/lb.)		
To Cover Variable Expenses		0.12
To Cover Total Expenses		0.19
Yield Sensitivity (same expenses, but average yield)		
Provincial Average Yield (lb./ac.)		1,299.00
Return Over Variable Expenses		105.26
Return Over Total Expenses		-36.42

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: A seeding rate of 37 lb/ac is assumed. Canary is grown in all soil zones, but heavy clay soil is preferred.

Fertilization: Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 64 lb./ac. N, 54 lb./ac. P₂O₅, 33 lb./ac. K₂O and 17 lb./ac. S. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Crop rotation can be used to reduce disease pressure by allowing infected crop residue to decompose between susceptible crops.

Crop Protection

Insect control: Canaryseed is susceptible to aphids, so an insecticide application to manage for aphids is assumed.

Disease control: Septoria leaf mottle is a foliar disease of canaryseed that can result in yield losses when environmental conditions favor disease development. A single fungicide application for septoria leaf mottle has been included in this estimate. Fungicide application decisions should be made based on disease risk during the growing season.

Weed control: Canaryseed has limited herbicide options for grass control making application of a soil-active for wild oat control a necessity. Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used								
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop			Desiccation
		1	2		1	2	3	
✓		✓	✓	✓	✓	✓		

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Caraway

Economics

Revenue Per Acre

Target Yield (lbs./ac.) (A)		784.00
Estimated Farm Gate Price (\$/lb.) (B)		0.45
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		352.80

Expenses Per Acre

Variable Expenses/Acre

Seed		5.76
- Seed Treatments/Inoculants		0.63
Fertilizer - Nitrogen		20.62
- Phosphorus (P ₂ O ₅)		14.46
- Sulphur and Other		6.82
Plant Protection - Herbicides		38.36
- Insecticides		0.00
- Fungicides		10.05
Machinery Operating - Fuel		36.24
- Repair		21.87
Custom Work and Hired Labour		19.80
Crop Insurance Premium		23.31
Utilities and Miscellaneous		4.75
Interest on Variable Expenses		4.63

Total Variable Expenses (D) 207.30

Other Expenses/Acre (for two years since biennial)

Building Repair		1.71
Property Taxes		15.50
Business Overhead		7.46
Machinery Depreciation		90.50
Building Depreciation		3.80
Machinery Investment		63.43
Building Investment		2.68
Land Investment		119.10

Total Other Expenses (E) 304.18**

Labour and Management* (F)

Total Expenses (D+E+F)=(G) 511.48

Return Per Acre (after two years)

Return Over Variable Expenses (C-D)		145.50
Return Over Total Expenses (C-G)		-158.68

Break Even Yield (lbs./ac.)

To Cover Variable Expenses		460.67
To Cover Total Expenses		1,136.62

Break Even Price (\$/lb.)

To Cover Variable Expenses		0.26
To Cover Total Expenses		0.65

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (lb./ac.)		537.60
Return Over Variable Expenses		34.62
Return Over Total Expenses		-269.56

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: Seed rate of 12 lb./ac. is used. Caraway is primarily a biennial crop and typically seeded with a companion crop so that the field provides a return in both crop years. Caraway and Coriander have the same management cost. Therefore, if no companion crop is sown, include production costs used for coriander, with the exception of seeding, harvest and handling, to account for management costs of caraway in the first year. Recommended soil is black.

Fertilization: Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 41 lb./ac. N, 32 lb./ac. P₂O₅ and 19 lb./ac. K₂O. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Crop rotation can be used to reduce disease pressure by allowing infected crop residue to decompose between susceptible crops. Crops in the carrot family are very sensitive to Group 2 residues in the soil. Please refer to the ministry's Guide to Crop Protection available at saskatchewan.ca/agriculture for more information.

Crop Protection

Insect control: A limited number of registered products is available for slugs in field crops.

Disease control: Blossom blight can result in yield losses when conditions favor disease development. A single application of a fungicide is included in this estimate.

Weed control: Herbicide costs below are only for the second year of production. If caraway is not companion cropped in the first year, it requires the same weed control as coriander. Refer to the coriander section for more information. Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used (Second Year Only)							
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop		
		1	2		1	2	3
					✓	✓	

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

**These other costs are carried for two years because caraway is a biennial crop. If a cover crop is grown and harvested in the first year, these costs could be halved.

2020 Desi Chickpea

Economics

Revenue Per Acre

Target Yield (lbs./ac.) (A)		1,792.00
Estimated Farm Gate Price (\$/lb.) (B)		0.16
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		286.72

Expenses Per Acre

Variable Expenses/Acre		
Seed		34.41
- Seed Treatments/Inoculants		13.81
Fertilizer - Nitrogen		3.02
- Phosphorus (P ₂ O ₅)		13.56
- Sulphur and Other		0.00
Plant Protection - Herbicides		93.85
- Insecticides		5.45
- Fungicides		37.52
Machinery Operating - Fuel		19.93
- Repair		8.57
Custom Work and Hired Labour		19.80
Crop Insurance Premium		14.59
Utilities and Miscellaneous		3.13
Interest on Variable Expenses		6.12
Total Variable Expenses (D)		273.76
Other Expenses/Acre		
Building Repair		0.47
Property Taxes		3.91
Business Overhead		2.08
Machinery Depreciation		35.45
Building Depreciation		1.05
Machinery Investment		24.85
Building Investment		0.75
Land Investment		55.33
Total Other Expenses (E)		123.89
Labour and Management* (F)		
Total Expenses (D+E+F)=(G)		397.65

Return Per Acre

Return Over Variable Expenses (C-D)		12.96
Return Over Total Expenses (C-G)		-110.93

Break Even Yield (lbs./ac.)

To Cover Variable Expenses		1,711.00
To Cover Total Expenses		2,485.32

Break Even Price (\$/lb.)

To Cover Variable Expenses		0.15
To Cover Total Expenses		0.22

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (lb./ac.)		1,254.00
Return Over Variable Expenses		-73.12
Return Over Total Expenses		-197.01

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: Seed rates for the Desi Chickpea is 93 lb./ac. The brown soil zone is recommended.

Fertilization: Inoculant with the correct strains of rhizobium should be applied. Fertility cost is based on nutrient removal rates given the targeted crop yield. These are 6 lb./ac. N and 30 lb./ac. P₂O₅. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Diverse crop rotations are recommended to help reduce disease pressure and suppress weed growth.

Crop Protection

Insect control: Wireworms, cutworms, pea aphid, potato leafhopper and grasshoppers might require control. Seed treatments are available for wireworm control.

Disease control: Ascochyta blight is a foliar disease that can result in yield losses when environmental conditions favour disease development. When disease pressure is high more than one fungicide application may be required. Two fungicide applications are included in this estimate. Fungicide application decisions should be based on disease risk during the growing season.

Weed control: Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used								
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop			Desiccation
		1	2		1	2	3	
✓		✓	✓	✓	✓	✓	✓	✓

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Kabuli Chickpea, Large

Economics

Revenue Per Acre

Target Yield (lbs./ac.) (A)		2,531.20
Estimated Farm Gate Price (\$/lb.) (B)		0.23
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		582.18

Expenses Per Acre

Variable Expenses/Acre		
Seed		62.35
- Seed Treatments/Inoculants		13.81
Fertilizer - Nitrogen		4.02
- Phosphorus (P ₂ O ₅)		18.08
- Sulphur and Other		0.00
Plant Protection - Herbicides		93.85
- Insecticides		5.45
- Fungicides		37.52
Machinery Operating - Fuel		19.93
- Repair		8.57
Custom Work and Hired Labour		16.50
Crop Insurance Premium		16.61
Utilities and Miscellaneous		3.13
Interest on Variable Expenses		6.86

Total Variable Expenses (D) **306.68**

Other Expenses/Acre

Building Repair		0.47
Property Taxes		3.91
Business Overhead		2.08
Machinery Depreciation		35.45
Building Depreciation		1.05
Machinery Investment		24.85
Building Investment		0.75
Land Investment		55.33

Total Other Expenses (E) **123.89**

Labour and Management* (F)

Total Expenses (D+E+F)=(G) **430.57**

Return Per Acre

Return Over Variable Expenses (C-D)		275.50
Return Over Total Expenses (C-G)		151.61

Break Even Yield (lbs./ac.)

To Cover Variable Expenses		1,333.37
To Cover Total Expenses		1,872.03

Break Even Price (\$/lb.)

To Cover Variable Expenses		0.12
To Cover Total Expenses		0.17

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (lb./ac.)		1,590.00
Return Over Variable Expenses		59.02
Return Over Total Expenses		-64.87

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: A seed rate is 145 lb./ac. is used. The brown soil zone is recommended.

Fertilization: Inoculant with the correct strains of rhizobium should be applied. Fertility cost is based on nutrient removal rates given the targeted crop yield. These are 8 lb./ac. N and 40 lb./ac. P₂O₅. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Crop rotation can be used to reduce disease pressure.

Crop Protection

Insect control: Wireworms, cutworms, pea aphid, potato leafhopper and grasshoppers might require control. Seed treatments are available for wireworm control.

Disease control: Ascochyta blight is a foliar disease that can result in yield losses when environmental conditions favor disease development. When disease pressure is high more than once fungicide application may be required. Two fungicide applications are included in this estimate. Fungicide application decisions should be based on disease risk during the growing season.

Weed control: Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used								
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop			Desiccation
		1	2		1	2	3	
✓		✓	✓	✓	✓	✓	✓	✓

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Kabuli Chickpea, Small

Economics

	My Farm	Brown
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Revenue Per Acre

Target Yield (lbs./ac.) (A)		2,307.20
Estimated Farm Gate Price (\$/lb.) (B)		0.16
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		369.15

Expenses Per Acre

Variable Expenses/Acre		
Seed		40.33
- Seed Treatments/Inoculants		13.81
Fertilizer - Nitrogen		4.02
- Phosphorus (P ₂ O ₅)		15.82
- Sulphur and Other		0.00
Plant Protection - Herbicides		93.85
- Insecticides		5.45
- Fungicides		37.52
Machinery Operating - Fuel		19.93
- Repair		8.57
Custom Work and Hired Labour		16.50
Crop Insurance Premium		15.96
Utilities and Miscellaneous		3.13
Interest on Variable Expenses		6.29

Total Variable Expenses (D) **281.18**

Other Expenses/Acre

Building Repair		0.47
Property Taxes		3.91
Business Overhead		2.08
Machinery Depreciation		35.45
Building Depreciation		1.05
Machinery Investment		24.85
Building Investment		0.75
Land Investment		55.33
Total Other Expenses (E)		123.89

Labour and Management* (F)

Total Expenses (D+E+F)=(G) **405.07**

Return Per Acre

Return Over Variable Expenses (C-D)		87.97
Return Over Total Expenses (C-G)		-35.92

Break Even Yield (lbs./ac.)

To Cover Variable Expenses		1,757.35
To Cover Total Expenses		2,531.67

Break Even Price (\$/lb.)

To Cover Variable Expenses		0.12
To Cover Total Expenses		0.18

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (lb./ac.)		1,433.60
Return Over Variable Expenses		-51.80
Return Over Total Expenses		-175.69

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: A seed rate is 109 lb./ac. is used. The brown soil zone is recommended.

Fertilization: Inoculant with the correct strains of rhizobium should be applied. Fertility cost is based on nutrient removal rates given the targeted crop yield. These are 8 lb./ac. N and 35 lb./ac. P₂O₅. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Crop rotation can be used to reduce disease pressure.

Crop Protection

Insect control: Wireworms, cutworms, pea aphid, potato leafhopper and grasshoppers might require control. Seed treatments are available for wireworm control.

Disease control: Ascochyta blight is a foliar disease that can result in yield losses when environmental conditions favour disease development. When disease pressure is high, more than one fungicide application may be required. Two fungicide applications are included in this estimate. Fungicide application decisions should be based on disease risk during the growing season.

Weed control: Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used								
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop			Desiccation
		1	2		1	2	3	
✓		✓	✓	✓	✓	✓	✓	✓

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Coriander

Economics

Revenue Per Acre

Target Yield (lbs./ac.) (A)		1,344.00
Estimated Farm Gate Price (\$/lb.) (B)		0.40
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		537.60

Expenses Per Acre

Variable Expenses/Acre

Seed		9.50
- Seed Treatments/Inoculants		1.31
Fertilizer - Nitrogen		35.72
- Phosphorus (P ₂ O ₅)		18.08
- Sulphur and Other		0.00
Plant Protection - Herbicides		59.08
- Insecticides		0.00
- Fungicides		34.99
Machinery Operating - Fuel		18.12
- Repair		9.66
Custom Work and Hired Labour		19.80
Crop Insurance Premium		13.16
Utilities and Miscellaneous		4.11
Interest on Variable Expenses		5.11

Total Variable Expenses (D) **228.64**

Other Expenses/Acre

Building Repair		0.63
Property Taxes		5.11
Business Overhead		3.18
Machinery Depreciation		39.98
Building Depreciation		1.40
Machinery Investment		28.02
Building Investment		1.00
Land Investment		62.36

Total Other Expenses (E) **141.68**

Labour and Management* (F)

Total Expenses (D+E+F)=(G) **370.32**

Return Per Acre

Return Over Variable Expenses (C-D)		308.96
Return Over Total Expenses (C-G)		167.28

Break Even Yield (lbs./ac.)

To Cover Variable Expenses		571.60
To Cover Total Expenses		925.80

Break Even Price (\$/lb.)

To Cover Variable Expenses		0.17
To Cover Total Expenses		0.28

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (lb./ac.)		1,052.80
Return Over Variable Expenses		192.48
Return Over Total Expenses		50.80

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: A seed rate of 25 lb./ac. is used. The dark brown soil zone is recommended.

Fertilization: Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 71 lb./ac. N and 40 lb./ac. P₂O₅. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Crop rotation can be used to reduce disease pressure. Crops in the carrot family are very sensitive to Group 2 residues in the soil. Please refer to the Ministry's Guide to Crop Protection available at saskatchewan.ca/agriculture for more information.

Crop Protection

Insect control: A limited number of insecticides are registered for aphid and slug control.

Disease control: Blossom blight can result in yield losses when conditions favour disease development. A single application of fungicide for blossom blight management is included in this estimate. Fungicide applications should be made based on disease risk during the growing season.

Weed control: Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used							
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop		
		1	2		1	2	3
✓		✓		✓	✓	✓	

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Fenugreek

Economics

	My Farm	Brown
Revenue Per Acre		
Target Yield (lbs./ac.) (A)		1,175.00
Estimated Farm Gate Price (\$/lb.) (B)		0.24
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		282.00
Expenses Per Acre		
Variable Expenses/Acre		
Seed		15.00
- Seed Treatments/Inoculants		0.00
Fertilizer - Nitrogen		1.17
- Phosphorus (P ₂ O ₅)		4.97
- Sulphur and Other		0.00
Plant Protection - Herbicides		22.84
- Insecticides		0.00
- Fungicides		0.00
Machinery Operating - Fuel		15.40
- Repair		9.66
Custom Work and Hired Labour		19.80
Crop Insurance Premium		0.00
Utilities and Miscellaneous		3.13
Interest on Variable Expenses		2.10
Total Variable Expenses (D)		94.07
Other Expenses/Acre		
Building Repair		0.47
Property Taxes		3.91
Business Overhead		2.08
Machinery Depreciation		35.45
Building Depreciation		1.05
Machinery Investment		24.85
Building Investment		0.75
Land Investment		55.33
Total Other Expenses (E)		123.89
Labour and Management* (F)		
Total Expenses (D+E+F)=(G)		217.96
Return Per Acre		
Return Over Variable Expenses (C-D)		187.93
Return Over Total Expenses (C-G)		64.04
Break Even Yield (lbs./ac.)		
To Cover Variable Expenses		391.97
To Cover Total Expenses		908.18
Break Even Price (\$/lb.)		
To Cover Variable Expenses		0.08
To Cover Total Expenses		0.19
Yield Sensitivity (same expenses, but average yield)		
Provincial Average Yield (lb./ac.)		740.25
Return Over Variable Expenses		83.59
Return Over Total Expenses		-40.30

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: A seed rate of 30 lb./ac. is used. The brown soil zone is recommended.

Fertilization: Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 2.3 lb./ac. N and 11 lb./ac. P₂O₅. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Crop rotation can be used to reduce disease pressure and pathogen levels in the field.

Crop Protection

Disease control: The cost of fungicide is not included in this estimate. Disease risk assessment is encouraged to guide fungicide application decisions.

Weed control: Fenugreek has limited herbicide options. Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used							
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop		
		1	2		1	2	3
✓		✓			✓	✓	

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Brown Mustard

Economics

My Farm	Brown
---------	-------

Revenue Per Acre

Target Yield (lbs./ac.) (A)		1,321.60
Estimated Farm Gate Price (\$/lb.) (B)		0.30
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		396.48

Expenses Per Acre

Variable Expenses/Acre		
Seed		26.40
- Seed Treatments/Inoculants		0.50
Fertilizer - Nitrogen		25.65
- Phosphorus (P ₂ O ₅)		12.66
- Sulphur and Other		6.17
Plant Protection - Herbicides		80.91
- Insecticides		0.00
- Fungicides		0.00
Machinery Operating - Fuel		19.03
- Repair		8.57
Custom Work and Hired Labour		20.30
Crop Insurance Premium		8.63
Utilities and Miscellaneous		3.13
Interest on Variable Expenses		4.85
Total Variable Expenses (D)		216.80
Other Expenses/Acre		
Building Repair		0.47
Property Taxes		3.91
Business Overhead		2.08
Machinery Depreciation		35.45
Building Depreciation		1.05
Machinery Investment		24.85
Building Investment		0.75
Land Investment		55.33
Total Other Expenses (E)		123.89
Labour and Management* (F)		
Total Expenses (D+E+F)=(G)		340.69

Return Per Acre

Return Over Variable Expenses (C-D)		179.68
Return Over Total Expenses (C-G)		55.79

Break Even Yield (lbs./ac.)

To Cover Variable Expenses		722.66
To Cover Total Expenses		1,135.63

Break Even Price (\$/lb.)

To Cover Variable Expenses		0.16
To Cover Total Expenses		0.26

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (lb./ac.)		873.60
Return Over Variable Expenses		45.28
Return Over Total Expenses		-78.61

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: A seed rate of 6 lb./ac. is used. The brown soil zone is recommended.

Fertilization: Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 51 lb./ac. N, 28 lb./ac. P₂O₅ and 15 lb./ac. S. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Diverse crop rotations are recommended to help reduce disease pressure and suppress weed growth.

Crop Protection

Insect control: Flea beetles, cutworms, lygus bugs, cabbage seedpod weevil, diamondback moth, bertha armyworm, cabbage looper and occasionally imported cabbageworm, grasshoppers and slugs might require control. Seed treatments are available for flea beetle and cutworm control.

Disease control: The cost of fungicide is not included in this estimate. Disease risk assessment is encouraged to guide fungicide application decisions.

Weed control: Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used								
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop			Desiccation
		1	2		1	2	3	
✓		✓	✓	✓	✓	✓		✓

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Oriental Mustard

Economics

Revenue Per Acre

Target Yield (lbs./ac.) (A)		1,456.00
Estimated Farm Gate Price (\$/lb.) (B)		0.25
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		364.00

Expenses Per Acre

Variable Expenses/Acre

Seed		26.40
- Seed Treatments/Inoculants		0.50
Fertilizer - Nitrogen		27.67
- Phosphorus (P ₂ O ₅)		13.11
- Sulphur and Other		6.17
Plant Protection - Herbicides		80.91
- Insecticides		0.00
- Fungicides		0.00
Machinery Operating - Fuel		19.03
- Repair		8.57
Custom Work and Hired Labour		20.30
Crop Insurance Premium		8.70
Utilities and Miscellaneous		3.13
Interest on Variable Expenses		4.90

Total Variable Expenses (D) 219.39

Other Expenses/Acre

Building Repair		0.47
Property Taxes		3.91
Business Overhead		2.08
Machinery Depreciation		35.45
Building Depreciation		1.05
Machinery Investment		24.85
Building Investment		0.75
Land Investment		55.33

Total Other Expenses (E) 123.89

Labour and Management* (F)

Total Expenses (D+E+F)=(G) 343.29

Return Per Acre

Return Over Variable Expenses (C-D)		144.61
Return Over Total Expenses (C-G)		20.71

Break Even Yield (lbs./ac.)

To Cover Variable Expenses		877.58
To Cover Total Expenses		1,373.15

Break Even Price (\$/lb.)

To Cover Variable Expenses		0.15
To Cover Total Expenses		0.24

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (lb./ac.)		985.60
Return Over Variable Expenses		27.01
Return Over Total Expenses		-96.89

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: A seed rate of 6 lb./ac. is used. The brown soil zone is recommended.

Fertilization: Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 55 lb./ac. N, 29 lb./ac. P₂O₅ and 15 lb./ac. S. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Crop rotation can be used to reduce disease pressure and pathogen levels in the field.

Crop Protection

Insect control: Flea beetles, cutworms, lygus bugs, cabbage seedpod weevil, diamondback moth, bertha armyworm, cabbage looper and occasionally imported cabbageworm, grasshoppers and slugs might require control. Seed treatments are available for flea beetle and cutworm control.

Disease control: The cost of fungicide is not included in this estimate. Disease risk assessment is encouraged to guide fungicide application decisions.

Weed control: Mustards are relatively resilient to weed competition. Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used								
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop			Desiccation
		1	2		1	2	3	
✓		✓	✓	✓	✓	✓		✓

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Yellow Mustard

Economics

Revenue Per Acre

	My Farm	Brown
Target Yield (lbs./ac.) (A)		1,097.60
Estimated Farm Gate Price (\$/lb.) (B)		0.40
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		439.04

Expenses Per Acre

Variable Expenses/Acre

Seed		44.00
- Seed Treatments/Inoculants		1.00
Fertilizer - Nitrogen		21.13
- Phosphorus (P ₂ O ₅)		10.40
- Sulphur and Other		6.17
Plant Protection - Herbicides		76.78
- Insecticides		0.00
- Fungicides		0.00
Machinery Operating - Fuel		19.03
- Repair		8.57
Custom Work and Hired Labour		20.30
Crop Insurance Premium		8.83
Utilities and Miscellaneous		3.13
Interest on Variable Expenses		5.02
Total Variable Expenses (D)		224.36

Other Expenses/Acre

Building Repair		0.47
Property Taxes		3.91
Business Overhead		2.08
Machinery Depreciation		35.45
Building Depreciation		1.05
Machinery Investment		24.85
Building Investment		0.75
Land Investment		55.33
Total Other Expenses (E)		123.89
Labour and Management* (F)		
Total Expenses (D+E+F)=(G)		348.25

Return Per Acre

Return Over Variable Expenses (C-D)		214.68
Return Over Total Expenses (C-G)		90.79

Break Even Yield (lbs./ac.)

To Cover Variable Expenses		560.89
To Cover Total Expenses		870.62

Break Even Price (\$/lb.)

To Cover Variable Expenses		0.20
To Cover Total Expenses		0.32

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (lb./ac.)		694.40
Return Over Variable Expenses		53.40
Return Over Total Expenses		-70.49

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: A seed rate of 10 lb./ac. is used. The brown soil zone is recommended.

Fertilization: Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 42 lb./ac. N, 23 lb./ac. P₂O₅ and 15 lb./ac. S. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Crop rotation can be used to reduce disease pressure and pathogen levels in the field.

Crop Protection

Insect control: Flea beetles, cutworms, lygus bugs, cabbage seedpod weevil, diamondback moth, bertha armyworm, cabbage looper and occasionally imported cabbageworm, grasshoppers and slugs might require control. Seed treatments are available for flea beetle and cutworm control.

Disease control: The cost of fungicide is not included in this estimate. Disease risk assessment is encouraged to guide fungicide application decisions.

Weed control: Yellow mustard has limited herbicide options. Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used								
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop			Desiccation
		1	2		1	2	3	
✓		✓		✓	✓			✓

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Pinto Bean/Dry Edible Bean

Economics

Revenue Per Acre

Target Yield (lb./ac.) (A)		1,396.00
Estimated Farm Gate Price (\$/lb.) (B)		0.34
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		474.64

Expenses Per Acre

Variable Expenses/Acre		
Seed		111.87
- Seed Treatments/Inoculants		19.60
Fertilizer - Nitrogen		11.57
- Phosphorus (P ₂ O ₅)		3.62
- Sulphur and Other		0.00
Plant Protection - Herbicides		89.30
- Insecticides		0.00
- Fungicides		11.60
Machinery Operating - Fuel		17.21
- Repair		9.66
Custom Work and Hired Labour		19.80
Crop Insurance Premium		12.84
Utilities and Miscellaneous		4.11
Interest on Variable Expenses		7.12
Total Variable Expenses (D)		318.30
Other Expenses/Acre		
Building Repair		0.63
Property Taxes		5.11
Business Overhead		3.18
Machinery Depreciation		39.98
Building Depreciation		1.40
Machinery Investment		28.02
Building Investment		1.00
Land Investment		62.36
Total Other Expenses (E)		141.68
Labour and Management* (F)		
Total Expenses (D+E+F)=(G)		459.97

Return Per Acre

Return Over Variable Expenses (C-D)		156.34
Return Over Total Expenses (C-G)		14.67

Break Even Yield (lbs./ac.)

To Cover Variable Expenses		936.16
To Cover Total Expenses		1,352.87

Break Even Price (\$/lb.)

To Cover Variable Expenses		0.23
To Cover Total Expenses		0.33

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (lb./ac.)		879.48
Return Over Variable Expenses		-19.28
Return Over Total Expenses		-160.95

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: A seed rate of 99 lb./ac. is used. The dark brown soil zone is recommended.

Fertilization: Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 23 lb./ac. N and 8 lb./ac. P₂O₅. Producers are encouraged to use their own rates based on soil tests. Dry beans do not respond well to inoculant.

Crop Rotation: Crop rotation can be used to reduce disease pressure and pathogen levels in the field.

Crop Protection

Insect control: Aphids, leafhoppers, cutworms, corn borer and lygus bugs might require control.

Disease control: White mould and common bacterial blight are the most common diseases of dry bean. This estimate includes a single fungicide application for white mould management.

Weed control: Dry beans need to be maintained weed free between the second trifoliate stage and the onset of flowering (three weeks to five or six weeks after emergence) to minimize yield loss. Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used								
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop			Desiccation
		1	2		1	2	3	
✓		✓		✓	✓			✓

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Quinoa

Economics

	My Farm	Black
Revenue Per Acre		
Target Yield (lbs./ac.) (A)		1,000.00
Estimated Farm Gate Price (\$/lb.) (B)		0.70
Estimated Gross Revenue (\$/ac.) (AxB)=(C)		700.00
Expenses Per Acre		
Variable Expenses/Acre		
Seed		60.00
- Seed Treatments/Inoculants		0.50
Fertilizer - Nitrogen		21.13
- Phosphorus (P ₂ O ₅)		8.14
- Sulphur and Other		2.47
Plant Protection - Herbicides		7.81
- Insecticides		8.00
- Fungicides		0.00
Machinery Operating - Fuel		15.40
- Repair		10.94
Custom Work and Hired Labour		19.80
Crop Insurance Premium		20.93
Utilities and Miscellaneous		4.75
Interest on Variable Expenses		4.11
Total Variable Expenses (D)		183.98
Other Expenses/Acre		
Building Repair		0.85
Property Taxes		7.75
Business Overhead		3.73
Machinery Depreciation		45.25
Building Depreciation		1.90
Machinery Investment		31.72
Building Investment		1.36
Land Investment		59.55
Total Other Expenses (E)		152.11
Labour and Management* (F)		
Total Expenses (D+E+F)=(G)		336.10
Return Per Acre		
Return Over Variable Expenses (C-D)		516.02
Return Over Total Expenses (C-G)		363.90
Break Even Yield (lbs./ac.)		
To Cover Variable Expenses		262.83
To Cover Total Expenses		480.14
Break Even Price (\$/lb.)		
To Cover Variable Expenses		0.18
To Cover Total Expenses		0.34
Yield Sensitivity (same expenses, but average yield)		
Provincial Average Yield (lb./ac.)		630.00
Return Over Variable Expenses		257.02
Return Over Total Expenses		104.90

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: A seed rate of 10 lb./ac. is used. The black soil zone is recommended.

Fertilization: Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 42 lb./ac. N, 18 lb./ac. P₂O₅, 11 lb./ac. K₂O and 6 lb./ac. S. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: Crop rotation can be used to reduce disease pressure and pathogen levels in the field.

Crop Protection

Insect control: A limited number of insecticides are registered for European corn borer control.

Disease control: The cost of fungicide is not included in this estimate. Disease risk assessment is encouraged to guide fungicide application decisions.

Weed control: Quinoa has no registered herbicide options. However, producers can apply a pre-harvest application of glyphosate in the previous crop to manage perennial weeds, as well as a glyphosate burn off prior to seeding. Please see below chart and refer to general assumptions for details on pre-harvest glyphosate application.

Application Timing Window Used								
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop			Desiccation
		1	2		1	2	3	
✓								

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.

2020 Sunflower Oilseed (EMSS)

Economics

Revenue Per Acre

Target Yield (lbs./ac.) (A)		2,038.40
Estimated Farm Gate Price (\$/lb.) (B)		0.27
Estimated Gross Revenue \$/ac.) (AxB)=(C)		550.37

Expenses Per Acre

Variable Expenses/Acre

Seed		40.28
- Seed Treatments/Inoculants		0.00
Fertilizer - Nitrogen		37.73
- Phosphorus (P ₂ O ₅)		13.56
- Sulphur and Other		28.66
Plant Protection - Herbicides		75.15
- Insecticides		0.00
- Fungicides		0.00
Machinery Operating - Fuel		19.93
- Repair		9.66
Custom Work and Hired Labour		20.80
Crop Insurance Premium		7.24
Utilities and Miscellaneous		4.11
Interest on Variable Expenses		5.88

Total Variable Expenses (D) **263.00**

Other Expenses/Acre

Building Repair		0.63
Property Taxes		5.11
Business Overhead		3.18
Machinery Depreciation		39.98
Building Depreciation		1.40
Machinery Investment		28.02
Building Investment		1.00
Land Investment		62.36

Total Other Expenses (E) **141.68**

Labour and Management* (F)

Total Expenses (D+E+F)=(G) **404.68**

Return Per Acre

Return Over Variable Expenses (C-D)		287.37
Return Over Total Expenses (C-G)		145.69

Break Even Yield (lbs./ac.)

To Cover Variable Expenses		974.07
To Cover Total Expenses		1,498.81

Break Even Price (\$/lb.).

To Cover Variable Expenses		0.13
To Cover Total Expenses		0.20

Yield Sensitivity (same expenses, but average yield)

Provincial Average Yield (lb./ac.)		1,742.00
Return Over Variable Expenses		207.34
Return Over Total Expenses		65.66

Agronomics

Note: refer to the online calculator on saskatchewan.ca/agriculture for the "My Farm" column. Calculations provided are for the top 20 per cent yield.

Seeding: This guide assumes a producer will seed to achieve a plant population of 26,000/ac. This estimation is for the moist long season area with both dark brown and black soil, located in the south-east of the province.

Fertilization: Fertility costs are based on nutrient removal rates given the targeted crop yield. These are: 75 lb./ac. N, 30 lb./ac. P₂O₅, 50 lb./ac. K₂O and 26 lb. S. Producers are encouraged to use their own rates based on soil tests.

Crop Rotation: If a sunflower midge infestation is anticipated, new fields should be established away from fields damaged the previous season. Crop rotation can be used to reduce insects and disease pressure and pathogen levels in the field.

Crop Protection

Insect control: Wireworms, cutworms, sunflower beetle, grasshoppers, lygus bugs, sunflower seed weevil, banded sunflower moth and sunflower moth might require control. Seed treatments are available for wireworm and sunflower beetle control.

Disease control: The cost of fungicide is not included in this estimate. Disease risk assessment is encouraged to guide fungicide application decisions.

Weed control: Herbicide costs are based on the following herbicide timings. Please refer to general assumptions for details.

Application Timing Window Used								
Pre-harvest	Fall-applied	Pre-seed		Soil	In-crop			Desiccation
		1	2		1	2	3	
✓		✓		✓	✓	✓		✓

*Farm managers need to determine their own actual labour and management costs and add it to total expenses.



Looking for personalized help?

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