# Holos Model Mapping

## Holos Base Model

### Revenues $/*kg*

1. Crop Price

### Direct Costs $/ha

1. Seed, cleaning and treatment
2. Fertilizer
3. Chemical
4. Trucking and Marketing
5. Fuel, Oil, And Lube
6. Machinery and repairs
7. Crop insurance
8. Building repairs
9. Custom work
10. Labour (paid and unpaid)
11. Utilities
12. Operating Interest

### Totals $/ha

1. Total Fixed Cost
2. Total Variable Cost

## Saskatchewan: Based on the 2021 Crop Production guide

### Revenues $/*kg*

1. Crop Price:
   1. Name on Source: **Crop prices**
   2. Name on File: **Expected market price $/unit**
   3. *Notes: $/bu* *Average annual farm gate price adopted from the AAFC’s 2019-20 winter farm income forecast. Farm gate prices include all payments received by farmers regardless of if they are from forward contracts or spot prices.*

### Direct Costs $/ha

1. Seed, cleaning and treatment:
   1. Name on Source: **Seed, cleaning and treatment**
   2. Name on File: **Seed, cleaning and treatment**
   3. *Notes: $/Acre.**Includes Seed Treatments/Inoculants.*
2. Fertilizer:
   1. Name on Source: **Fertilizer**
   2. Name on File: **Fertilizer**
   3. *Notes****:*** *$/Acre.**Includes Nitrogen, Phosphorus, Sulphur and Other*
3. Chemical:
   1. Name on Source: **Plant Protection**
   2. Name on File: **Chemical**
   3. *Notes: $/Acre. Includes Herbicide, Insecticide and Fungicides*
4. Trucking and marketing:
   1. Name on Source: **-**
   2. Name on File: **Trucking and Marketing**
   3. *Notes****:*** *Not available on the source.*
5. Fuel, oil, and lube:
   1. Name on Source: **Machinery Operating: Fuel**
   2. Name on File: **Fuel Oil Lube**
   3. *Notes: $/Acre. estimated fuel consumption at $0.906/litre. Does not account for trucking and marketing.*
6. Machinery and repairs:
   1. Name on Source: **Machinery Operating: Repair**
   2. Name on File: **Machinery Repairs**
   3. *Notes: $/Acre.**Based on the Ministry’s 2020-21 Custom Rate and Rental Guide and are set at 2.6 per cent of the yearly machinery investment cost.*
7. Crop insurance:
   1. Name on Source: **Crop Insurance Premium**
   2. Name on File: **Hail/ Crop Insurance.**
   3. *Notes****:*** *$/Acre.**Includes crop and hail insurance.*
8. Building repairs:
   1. Name on Source: **Building Repairs**
   2. Name on File: **Building Repairs**
   3. *Notes: $/Acre. rates are 2.3 per cent of building investment per acre. This is a per acre estimate*
9. Custom work:
   1. Name on Source: **Custom Work and Hired Labour**
   2. Name on File: **Custom Work**
   3. *Notes: $/Acre. Custom farm operations, like custom trucking/spraying. Estimated with a wage rate of $26.40/hr 2021*
10. Labour (paid and unpaid):
    1. Name on Source: **Labour and Management**
    2. Name on File: **Labour (paid and unpaid)**
    3. *Notes: Left blank, suggested that farmers fill in their own information*
11. Utilities:
    1. Name on Source: **Utilities and Miscellaneous**
    2. Name on File: **Utilities and Miscellaneous**
    3. *Notes: $/Acre. – Cost of electricity, natural gas, water and telephone expenses based on standard farm business rates of major utilities.*
12. Operating Interest:
    1. Name on Source: **Interest on Variable Expenses**
    2. Name on File: **Operating Interest**
    3. *Notes: calculated at a rate of 2.95% for all variable expenses, Calculated for 8 months except for hybrid fall rye and winter rye.*

### Totals $/ha

1. Total Fixed Cost:
   1. Name on Source: **Total Other Expenses (E)**
   2. Name on File: **Fixed Cost $/ Acre**
   3. *Notes: Building Repair + Property Taxes + Business Overhead + Machinery Depreciation + Building Depreciation + Machinery Investment + Building Investment + Land Investment*

***\*****Overhead- legal, accounting, and other misc. fees; they are indexed by applying the farm input price index to Statistic’s Canada 2016 Census of Agriculture.*

***\**** *Machinery Depreciation- straight-line 10.7% annually.*

***\*****Building Depreciation- Straight-line 5%*

***\*****Machinery Investment – allocation of 75% on machinery investment and 25% on opportunity cost of the down payment for machinery loans. As per the Ministry of Agriculture’s Custom Rate and Rental Guide assumptions an interest rate of 5% and a 1.5% opportunity cost rate. Brown Soil has an investment of $346.25/ acre, dark brown of $346.25/acre, and black of $441.91/ acre*

***\*****Building Investment- 2.19% interest on $21/acre for brown soil, $28/acre for dark brown soil, and $38/acre for black soil.*

***\*****Land Investment - 2.19% interest on $1,633.33/acre for brown soil, $1,840.79/acre for dark brown soil, and $1,757.80/acre for black soil.*

1. Total Variable Cost:
   1. Name on Source: **Total Variable Expenses (D)**
   2. Name on File: **Variable Cost $/Acre**
   3. *Notes:* *Seed + Seed Treatments/Inoculants + Fertilizer [Nitrogen + Phosphorus (P2O5) + Sulphur and Other] + Plant Protection [Herbicides + Insecticides + Fungicides] + Machinery Operating [Fuel + Repair] + Custom Work and Hired Labour + Crop Insurance Premium + Utilities and Miscellaneous + Interest on Variable Expenses*

## Manitoba: Based on the 2021 Crop Production Guide

### Revenues $/*kg*

1. Crop Price:
   1. Name on Source: **Target Price $ per unit**
   2. Name on File: **Expected market price $/unit**
   3. *Notes: $/bu. Estimated farmgate prices*

### Direct Costs $/ha

1. Seed, cleaning and treatment:
   1. Name on Source: **Seed & Treatment**
   2. Name on File: **Seed, cleaning and treatment**
   3. *Notes: $/Acre. Estimated Seed cost \* Estimated Seeding rate per Acre*
2. Fertilizer:
   1. Name on Source: **Fertilizer**
   2. Name on File: **Fertilizer**
   3. *Notes****:*** *$/Acre. Bulk Price per Tonne*
3. Chemical:
   1. Name on Source: **Pesticide**
   2. Name on File: **Chemical**
   3. *Notes: $/Acre. Weed Control, Disease Control, Insect Control.*
4. Trucking and marketing:
   1. Name on Source: **-**
   2. Name on File: **Trucking and marketing**
   3. *Notes****:*** *$/Acre.**Not included on the budget.*
5. Fuel, oil, and lube:
   1. Name on Source: **Fuel**
   2. Name on File: **Fuel Oil Lube**
   3. *Notes: $/Acre. estimated fuel consumption at $0.85/litre. \* check field fuel usage table\**
6. Machinery and repairs:
   1. Name on Source: **Machinery Operating & Lease**
   2. Name on File: **Machinery Repairs**
   3. *Notes: $/Acre.**Includes costs for maintenance, repairs, licenses and insurance*
7. Crop insurance:
   1. Name on Source: **Crop Insurance + Hail Insurance**
   2. Name on File: **Hail/ Crop Insurance.**
   3. *Notes****:*** *$/Acre.**- Crop Insurance is 80% Insured Value, based on MASC Risk Areas 2,4,6, &12, $50/acre excess moisture Insurance and additional hail insurance at $200/acre*
8. Building repairs:
   1. Name on Source: **-**
   2. Name on File: **Building Repairs**
   3. *Notes: Not included on the budget*
9. Custom work:
   1. Name on Source: **-**
   2. Name on File: Custom work
   3. *Notes: Not included on the budget*
10. Labour (paid and unpaid):
    1. Name on Source: **Labour - Hired**
    2. Name on File: **Labour (paid and unpaid)**
    3. *Notes: 0.2 hrs/acre at a labor rate of $24*
11. Utilities:
    1. Name on Source: **Drying & Other Costs**
    2. Name on File: **Utilities and Miscellaneous**
    3. *Notes: $/Acre. Includes Overhead expenses- hydro, telephone, accounting, buildings, supplies and insurance, etc. Also includes drying costs for crops that need to be dried.*
12. Operating Interest:
    1. Name on Source: **Interest on Operating**
    2. Name on File: **Operating Interest**
    3. *Notes: $/Acre. Interest charges on operating costs are calculated at 4.5% per 6 months.*

### Totals $/ha

1. Total Fixed Cost:
   1. Name on Source: **Total Fixed**
   2. Name on File: **Fixed Cost $/ Acre**
   3. *Notes: $/Acre Land Costs + Machinery Costs*

***\*****Land costs assume 15% financed at 4% for 25 years, plus 1.5% land equity opportunity cost.*

***\**** *Based on approximate average machinery values, budget assumes 45% financed at 4.5% for 7 years, depreciation costs over 15 years over 25% residual value, plus 1.5% machinery equity opportunity cost.*

1. Total Variable Cost:
   1. Name on Source: **Total Operating**
   2. Name on File: **Variable Cost $/Acre**
   3. *Notes: $/Acre. Seed & Treatment + Fertilizer + Pesticide + Fuel + Machinery Operating & Lease + Labour Hired + Crop Insurance + Hail Insurance + Drying & Other Costs + Land Taxes + Storage Costs + Interests on Operating*

*\*Land Taxes are $15/Acre with an assumed land value of $3,100/Acre*

*\*Storage Cost budget assumed at 60% financed at 4% for 20 years. Farm storage requirements were assumed to cost $1.75/bushel for 15% storage, $2.4 /bushel for 70% aerated storage and $4.20/bushel for 15% hopper storage.*

## Alberta: Based on the 2020 Crop Production Guide

### Revenues $/*kg*

1. Crop Price:
   1. Name on Source: **Expected market price $/unit**
   2. Name on File: **Expected market price $/unit**
   3. *Notes:* *$/bu*

### Direct Costs $/ha

1. Seed, cleaning and treatment:
   1. Name on Source: **Seed, Cleaning & Treatment**
   2. Name on File: **Seed, cleaning and treatment**
   3. *Notes: $/Acre. Estimated Seeding rate allocation per Acre. Seeding rates for each soil are based on 1,000 kernel weight, 90-95 % germination, 3-5% emergence mortality, and 9” spacing.*
2. Fertilizer:
   1. Name on Source: **Fertilizer**
   2. Name on File: **Fertilizer**
   3. *Notes****:*** *$/Acre. Prices based on fall prices for 2019 and fertilizer cost indications for spring 2020. Nitrogen $520/tonne, Phosphorus $645/tonne, Potassium $515/tonne, Sulphur $465/tonne.*
3. Chemical:
   1. Name on Source: **Chemical**
   2. Name on File: **Chemical**
   3. *Notes: $/Acre. PreSeed, In Crop, F/I/PH/D. The 2020 chemical costs on stubble-seeded crops include a non-selective, pre-seed burn-off, and one in-crop herbicide application for broadleaf weeds, grassy weeds or both. For red lentils, 2019 chemical costs were used.*
4. Trucking and marketing:
   1. Name on Source: **Trucking & Marketing**
   2. Name on File: **Trucking and marketing**
   3. *Notes****:*** *$/Acre. For grains and oilseeds, trucking and marketing are an average of long-haul and short-haul rates from cost supplies. For hay, estimates are from suppliers assuming bales are 1,500lbs between 50-100 km in transportation. For silage, estimates are last year’s costs indexed for this year.*
5. Fuel, oil, and lube:
   1. Name on Source: **Fuel Oil Lube**
   2. Name on File: **Fuel Oil Lube**
   3. *Notes: $/Acre.*
6. Machinery and repairs:
   1. Name on Source: **Machinery Repairs**
   2. Name on File: **Machinery Repairs**
   3. *Notes: $/Acre.**Includes costs for maintenance, repairs, licenses and insurance*
7. Crop insurance:
   1. Name on Source: **Hail/ Crop Insurance.**
   2. Name on File: **Hail/ Crop Insurance.**
   3. *Notes****:*** *$/Acre.**- Based on Agricultural Financial Services Corporation (AFSC)*
8. Building repairs:
   1. Name on Source: **Building Repairs**
   2. Name on File: **Building Repairs**
   3. *Notes: $/Acre.*
9. Custom work:
   1. Name on Source: **Custom Work**
   2. Name on File: **Custom work**
   3. *Notes: $/Acre*
10. Labour (paid and unpaid):
    1. Name on Source: **Labour (paid and unpaid)**
    2. Name on File: **Labour (paid and unpaid)**
    3. *Notes: $/Acre*
11. Utilities:
    1. Name on Source: **Utilities and Miscellaneous**
    2. Name on File: **Utilities and Miscellaneous**
    3. *Notes: $/Acre.*
12. Operating interest:
    1. Name on Source: **Operating Interest**
    2. Name on File: **Operating Interest**
    3. *Notes: $/Acre. %5 per annum for inputs financed.*

### Totals $/ha

1. Total Fixed Cost:
   1. Name on Source: **Total Capital Costs**
   2. Name on File: **Fixed Cost $/ Acre**
   3. *Notes: $/Acre. Average fixed cost profiles by enterprise vary, and the capital costs are indexed to reflect costs for 2020 year. Split into Forages and Crops, with Crop Share/ Cash Share + Licenses and Insurance + Depreciation + Paid Capital Interest*
2. Total Variable Cost:
   1. Name on Source: **Total Direct Expenses**
   2. Name on File: **Variable Cost $/Acre**
   3. *Notes: $/Acre. Seed, Cleaning & Treatment + Fertilizer + Chemical + Hail/Crop Insurance + Trucking & Marketing + Fuel, Oil & Lube + Machinery Repairs + Building Repairs + Custom Work + Labour (Paid and Unpaid) + Utilities & Miscellaneous + Operating Interest*

## Ontario: Based on the 2020 Crop Production Guide

### Revenues $/*kg*

1. Crop Price:
   1. Name on Source: **Expected market price $/unit**
   2. Name on File: **Expected market price $/unit**
   3. *Notes:$/bu* *Projected yields are based on 5-year average yields (2014 to 2018) as reported through Production Insurance. Not Provided, Check AGRICORP*

### Direct Costs $/ha

1. Seed, cleaning and treatment:
   1. Name on Source: **Seed / Cleaning and Treatment**
   2. Name on File: **Seed, cleaning and treatment**
   3. *Notes: $/Acre.**Seed costs, except for the Bacillus thuringiensis (Bt), Roundup Ready (RR) and herbicide tolerant corn, spring canola and soybeans, are for non-genetically enhanced varieties*
2. Fertilizer:
   1. Name on Source: **Fertilizer**
   2. Name on File: **Fertilizer**
   3. *Notes****:*** *$/Acre.* *Fertility : Region+ Crop Removal + `Expense for Straw`: Fertility (Crop removal)*

*\*Operating expenses and Expenses for Straw use different basis for cost projection, be very careful when combining them.*

1. Chemical:
   1. Name on Source: **Chemical**
   2. Name on File: **Chemical**
   3. *Notes: $/Acre. Herbicide + Fungicide.*
2. Trucking and marketing:
   1. Name on Source: **Trucking and Marketing**
   2. Name on File: **Trucking and Marketing**
   3. *Notes****:*** *Marketing Board Fee + Trucking ($9/tonne)*
3. Fuel, oil, and lube:
   1. Name on Source: : **Fuel Oil Lube**
   2. Name on File: **Fuel Oil Lube**
   3. *Notes: $/Acre. Operating expense; Tractor and Machine*

*Expense (Fuel and Lubricants)*

*+ Expense for Straw; Tractor and Machine*

*Expense (Fuel and Lubricants)*

*\*Operating Expenses and Expenses for Straw use different basis for forecasting, therefore, we should be careful when working with both of these together.*

1. Machinery and repairs:
   1. Name on Source: **Machinery Repairs**
   2. Name on File: **Machinery Repairs**
   3. *Notes: $/Acre. Operating Expense; Tractor and Machinery*

*Expenses: repairs and maintenance +*

*Expense for Straw; Tractor and Machinery*

*Expense: repairs and maintenance*

1. Crop insurance:
   1. Name on Source: **Production Insurance**
   2. Name on File: **Hail/ Crop Insurance.**
   3. *Notes****:*** *$/Acre.**Includes crop, hail and other insurance*
2. Building repairs:
   1. Name on Source: **-**
   2. Name on File: **Building Repairs**
   3. *Notes: Not given by source*
3. Custom work:
   1. Name on Source: **Custom Work**
   2. Name on File: **Custom Work**
   3. *Notes: $/Acre. fertilizer application, mixing and delivery + pesticide application x n + harvest + other*
4. Labour (paid and unpaid):
   1. Name on Source: **Operator Labour (self or hired)**
   2. Name on File: **Labour (paid and unpaid)**
   3. *Notes: $/Acre*
5. Utilities:
   1. Name on Source: **-**
   2. Name on File: **Utilities and Miscellaneous**
   3. *Notes: Not given by source*
6. Operating Interest:
   1. Name on Source: **Operating Interest**
   2. Name on File: **Operating Interest**
   3. *Notes: $/Acre. Calculated at 3.45%*

### Totals $/ha

1. Total Fixed Cost:
   1. Name on Source: **-**
   2. Name on File: **Fixed Cost $/ Acre**
   3. *Notes: Not included in source*
2. Total Variable Cost:
   1. Name on Source: **-**
   2. Name on File: **Variable Cost $/Acre**
   3. *Notes:* *Not given by source. Total Inputs + Total Machinery + Total Overhead*

*\*Total Inputs = Seed + Seed Treatment + Fertility + Pesticides*

*\*Total Machinery = Tillage + Planting + Spraying + Fertilizing + Harvesting & Trucking*

*\*Total Overhead = Drying + Production Insurance + Risk Management + Interest @ 3.45% + Marketing & Other*