

University of Idaho

College of Agricultural *and* Life Sciences



2009 Direct Seed Crop Rotation Budgets Lewis County, Idaho

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INSTRUCTIONS AND ASSUMPTIONS

General Instructions:

A color coding system is used to indicate the source of the data for each budget and to show which data can be adjusted. Orange cells can be changed without affecting the underlying equations in this cost calculator. Data in yellow cells are from the Summary sheet (click on yellow Summary tab or select it from the TabSelect drop-down menu). In the Summary sheet both crop price and yield are in orange cells. Adjusting any of those numbers will automatically update all calculations throughout the spreadsheet. You can quickly compare price and yield changes by crop and rotation on net returns and land costs. You can also see rotational impacts. For example, if you know that a crop will have a higher yield in a particular sequence, adjust the crop yield in the upper table and see the rotational impact in the second table. You can save the file with this data, then create another scenario and save it as a different file. The graphical tab will illustrate the results of these changes automatically.

Input Prices:

By entering input prices on the Input Prices sheet (click on the green Input Prices tab), all of the cost calculations will be automatically updated. Input cost changes can also be made on individual crop price sheets, over-riding the input cost formulae on that particular crop budget. Fertilizer prices are based on current (Apr 09) quotes, but they are subject to uncertainty. Chemical input prices are based on February, 2009, quotes from chemical and seed dealers. These prices are subject to change, however, and will affect profitability of different crops.

Crop Prices:

Crop prices can be adjusted on the Summary tab and the effects of this change will be reflected throughout all the budgets. (Yields can be adjusted similarly.) Grain prices are based on futures prices for July and August 2009, as of April 2009, FOB Lind, Washington. (Source: Union Elevator, <http://www.unionelevator.com>). Canola cash prices are from northerncanola.com for Apr 2009.

Machinery Costs:

The machinery complement and associated hourly machinery cost data are in the last two sheets. The hourly machinery cost data are used to create the individualized machinery cost data for each budget, located in a separate tab for each crop. In the crop budget sheets, entries in blue cells are calculated by the machinery cost program and come from the associated Machinery Cost sheet for that crop. Machinery fixed costs include capital recovery costs, property taxes, insurance, and housing. For the overall farm operation, these costs do not vary by crop, given the ownership of a specific machinery complement, and are incurred whether or not crops are grown. Your per acre fixed costs will change if the farm size differs significantly from the size used in these budgets.

Land Costs:

Land costs, included either as real or as opportunity costs, are based on a typical share rental arrangement. We calculate net land rental cost as a cost share as follows:

$$\frac{1}{3} \text{ Crop Value} - (\frac{1}{3} \text{ Fertilizer Cost} + \frac{1}{3} \text{ Chemical Cost} + \frac{1}{3} \text{ Crop Insurance} + \text{Land Taxes})$$

A typical lease agreement in the areas surveyed is a one-third land owner and two-third tenant crop share, with the land owner paying land taxes, one-third of the fertilizer cost, one-third of the chemical cost, and one-third of the crop insurance. The tenant covers all other production expenses. **This crop-share percentage can be adjusted in the crop worksheets.** If the percentage is adjusted on the Summary tab, it is changed for all crops. If you want different crop-share percentages for different crops, adjust the percentage on the budget sheet for that crop. This valuable tool reveals how factors such as crop and input price increases as well as cropping choices affect revenue for landlords and operators differently.

While the owner-operator will not actually experience a land rental cost, this cost represents the minimum return owner-operators must realize to justify growing the crop themselves. To determine the profitability of crop production relative to other activities, the owner-operator may want to consider these forgone rental returns along with the usual production expenses.

General Assumptions:

Since farming is inherently variable and constantly changing, we hope that this spreadsheet format will be helpful in adjusting these budgets to reflect your particular operation. Enterprise costs and returns vary from one location to the next and over time for any particular farming operation.

Variability stems from differences in the following:

- Capital, labor, and natural resources
- Type and size of machinery complement
- Cultural practices
- Size of farm enterprise
- Crop yields
- Input prices
- Commodity prices
- Management skill

Please examine closely the assumptions we have used and make adjustments to reflect your particular operation. Adjustments in the variable costs can easily be made without affecting the overall accuracy of the budget information. Machinery costs are more difficult to adjust, due to the underlying complexity of machinery cost calculations. A separate machinery cost calculator program is used to develop the costs used in these budgets, which are based on specific machinery widths, tractor horsepower, type of operation, etc. The machinery cost program and data sets specific to this budget are available upon request.

Acknowledgments:

I wish to thank everyone who helped gather all of the information needed to create these worksheets. First and foremost, I thank the farmers who were willing to take the time to share their enterprise information in order to create this worksheet. Without their assistance we would not be able to provide this critical information to others. However, I take responsibility for any errors in these budgets.

Budget spreadsheets are available at the following link:

<http://www.webpages.uidaho.edu/~kpainter/>

Legend: Follow directions below to preserve equations in this spreadsheet.
Yellow Cells: Data are from Summary page (yellow tab).
Orange Cells: Revise this data here to reflect your situation.
Green Cells: Data are from Input Costs page (green tab).
Blue Cells: Data are from the Machinery page (blue tab).

Summary of Returns by Crop and Rotation (\$/acre/yr)

In the spreadsheet version, you may adjust yield, price, and crop-share % information in orange cells.
All land cost (crop-share) and other data will adjust automatically throughout.

By Crop:	Unit	Yield per acre	Price* per unit	Revenue per acre	Total Cost of Operation	Returns over TC (\$/acre)	Total Variable Costs	Returns over VC (\$/acre)	Crop & Cost Share**	
									Operator:	Owner:
Soft White Winter Wheat (SWWW)	bu	74	\$4.88	\$361	\$344	\$17	\$212	\$149	67%	Operator
Hard Red Winter Wheat (HRWW)	bu	74	\$5.73	\$424	\$391	\$33	\$12	\$412	33%	Owner
Soft White Spring Wheat (SWSW)	bu	58	\$4.88	\$283	\$300	-\$17	\$192	\$91		
Hard Red Spring Wheat (HRSW)	bu	58	\$6.79	\$394	\$363	\$31	\$217	\$177		
Bluegrass Establishment (BGE)	lb			\$0	\$86	-\$86	\$58	-\$58		
Bluegrass Production (BG)	lb	675	\$0.65	\$439	\$459	-\$20	\$283	\$156		
Spring Canola (SC)	lb	1300	\$0.17	\$215	\$294	-\$80	\$205	\$9		
Chem Fallow (CF)	lb			\$0	\$78	-\$78	\$52	-\$52		

*August 2009 farmgate prices for grains, posted by the Union Elevator, Lind, WA, www.unionelevator.com, accessed Apr 2009.

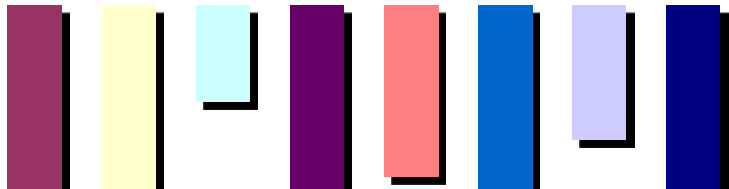
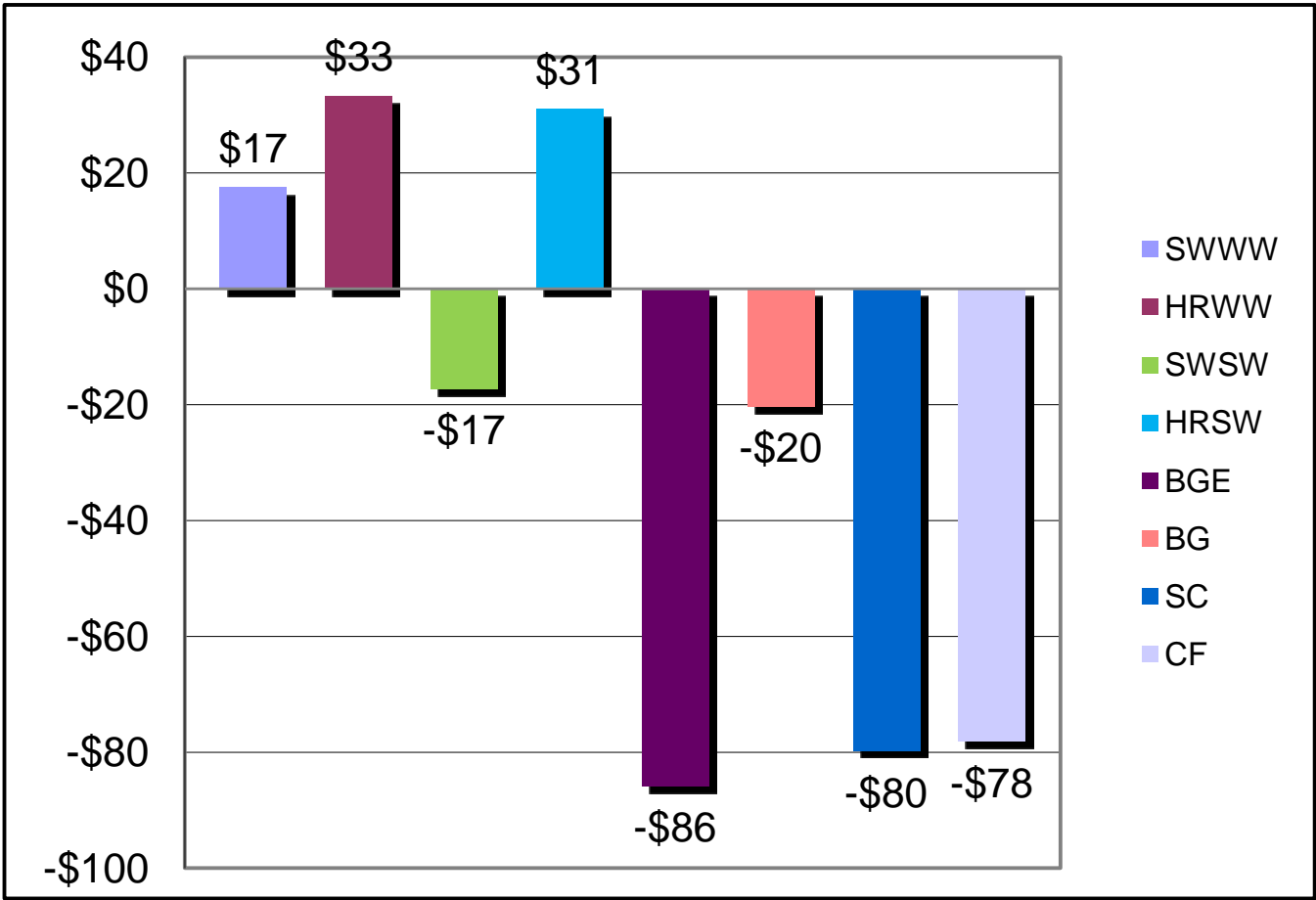
Canola price from northerncanola.com for Aug 09.

**In a crop- and cost-share arrangement, the landowner and the farm manager split the crop and the specified costs, typically fertilizer, chemicals and crop insurance.

By Rotation:	Aver. Revenue (\$/acre)	Aver. Total Cost (TC) (\$/acre)	Aver. Returns over TC (\$/acre)	Aver. Total Variable Costs (VC) (\$/acre)	Aver. Returns over VC (\$/acre)	Aver. Cost Share Cost (\$/acre)
SWWW, SWSW, SC	\$286	\$313	-\$27	\$203	\$83	\$49
SWWW, HRSW, SC	\$323	\$334	-\$10	\$211	\$112	\$60
HRWW, SWSW, SC	\$307	\$328	-\$21	\$136	\$171	\$28
HRWW, HRSW, SC	\$344	\$349	-\$5	\$145	\$200	\$39
SWWW, SWSW, BGE, BG x 6	\$364	\$378	-\$14	\$234	\$131	\$78
SWWW, HRSW, BGE, BG x 6	\$423	\$433	-\$9	\$266	\$158	\$92
HRWW, SWSW, BGE, BG x 6	\$417	\$431	-\$13	\$238	\$180	\$80
HRWW, HRSW, BGE, BG x 6	\$431	\$438	-\$7	\$241	\$191	\$84
SWWW, SWSW, CF	\$215	\$241	-\$26	\$152	\$62	\$58
SWWW, HRSW, CF	\$252	\$262	-\$10	\$160	\$91	\$74
HRWW, SWSW, CF	\$236	\$256	-\$21	\$85	\$150	\$26
HRWW, HRSW, CF	\$273	\$277	-\$5	\$94	\$179	\$42

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Input Price Assumptions

	Unit	Projected 2009 Price/unit
Fuel:		
Diesel	gal	\$2.00
Gas	gal	\$2.50
Seed:		
Soft White Winter Wheat Seed	lb	\$0.15
Hard Red Winter Wheat Seed	lb	\$0.20
Soft White Spring Wheat Seed	lb	\$0.18
Hard Red Spring Wheat Seed	lb	\$0.22
Bluegrass Seed	lb	\$0.38
Canola Seed	lb	\$6.00
Garbanzo Seed	lb	\$0.45
Fertilizer:		
Nitrogen	lb	\$0.55
Phosphorous	lb	\$1.17
Sulfur	lb	\$0.23
Potassium	lb	\$0.46
Adjuvants:		
Ammonium Sulfate (liquid)	oz	\$0.02
Ammonium Sulfate (20-0-0-24)	lb	\$0.12
Crop Oil Concentrate	pt	\$1.00
In-Place	oz	\$0.24
M90	oz	\$0.01
Surfactant	oz	\$0.08
Syltac Sticker	pt	\$6.25
Custom Rental:		
26' Rental Shredder	acre	\$10.00
36' Ripper Shooter	acre	\$2.50
90' Rental Sprayer	acre	\$1.75
Custom Swathing	acre	\$15.00
Custom Aerial	acre	\$6.50
Fertilizer Applicator	acre	\$1.00

Input Price Assumptions

Pesticides:

Achieve SC	oz	\$2.00
Ally	oz	\$24.81
Assure II	oz	\$1.20
Axial	oz	\$1.81
Banvel 4SC	oz	\$0.77
Beacon	oz	\$32.00
Bronate	pt	\$5.68
Brox M	oz	\$0.30
Capture	acre	\$10.17
Dimethoate	pt	\$7.00
Discover	oz	\$4.41
FarGO	qt	\$12.52
Finesse	oz	\$17.40
Glyphosphate	oz	\$0.39
Imidan 70	lb	\$9.85
Maverick	oz	\$17.45
Poast	pt	\$9.38
Osprey	oz	\$3.55
Prowl	oz	\$0.25
Pursuit	oz	\$4.15
Quadris	oz	\$2.23
Quilt	oz	\$1.22
R-11	oz	\$0.94
Starane	oz	\$0.93
Starane + Salvo	oz	\$0.43
Starane + Sword	oz	\$0.43

Labor:

Hourly machine labor*	acre	\$20.00
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Cash Rent:

Cash Rent	acre	\$0.00
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Land Tax:

Land Tax	acre	\$3.90
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Miscellaneous:

Burning permit	acre	\$2.00
Bluegrass bags, tags, etc.	cwt	\$13.00

Interest:

Operating Loan	percent	7.50%
Machinery Loan/investment	percent	7.50%

*Includes all applicable state and federal taxes.

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Production Costs for Direct Seeded Soft White Winter Wheat, Northern Idaho

Item	Quantity Per Acre	Unit	Price or Cost/Unit	Value or Cost/Acre
Gross Returns				
Wheat	74	bu	\$4.88	\$361.12
Variable Costs				
Seed:				
Soft White Winter Wheat Seed	80	lb	\$0.15	\$12.00
Fertilizer:				
Nitrogen (dry)	80	lb	\$0.55	\$44.00
Phosphorous (dry)	20	lb	\$1.17	\$23.40
Sulfur (dry)	20	lb	\$0.23	\$4.60
Nitrogen (topdress) ¹	10	lb	\$0.55	\$5.50
Pesticides:				
Roundup	20	oz	\$0.39	\$7.80
Ammonium Sulfate	50	oz	\$0.02	\$1.00
M90	1.5	oz	\$0.01	\$0.02
Osprey	4.75	oz	\$3.55	\$16.86
Starane+Salvo	22	oz	\$0.43	\$9.46
Brox M	1.6	oz	\$0.30	\$0.48
R-11	3.2	oz	\$0.94	\$3.00
Machinery:				
Fuel	5.85	gal	\$2.00	\$11.69
Lubricants	1	acre	\$2.23	\$2.23
Machinery Repairs	1	acre	\$10.93	\$10.93
Machinery Labor	1.01	acre	\$20.00	\$20.26
Custom & Consultants:				
Rental Sprayer	0	acre	\$1.75	\$0.00
Aerial Spray	0.33	acre	\$6.50	\$2.15
Other:				
Crop insurance	1	acre	\$25.00	\$25.00
Storage Facility & Equip. Repairs.				\$0.00
Operating Interest ²				\$12.02
Total Variable Costs				\$212.40
Variable Costs per Unit				\$2.87
Net Returns Above Variable Costs				\$148.72

Production Costs for Direct Seeded Soft White Winter Wheat, Northern Idaho

Fixed Costs:				
Capital recovery costs				\$30.39
Machinery insurance, taxes, housing, licenses				\$5.23
Land Cost*	1	acre	\$68.70	\$68.70
*Based on Share Rent Percentage:				
Landlord	33.00%			
Tenant	67.00%			
Overhead ³				\$5.01
Management fee ⁴				\$18.06
Cash rent				\$0.00
Land taxes				\$3.90
Total Fixed Costs				\$131.29
Fixed Costs per Unit				\$1.77
Total Costs per Acre				\$343.68
Total Cost per Unit				\$4.64
Returns to Risk				\$17.44

Notes:

¹Topdressing is assumed to occur one year in three. Typical application is 30 lb of nitrogen, applied either aerially or with a rogator.

²Calculated at 7.5% interest on operating capital for 6 months. This rate can be changed in the Input Prices tab.

³Covers legal, accounting, and utility fees. Calculated as 2.5% of operating expenses.

⁴Calculated as 5% of gross revenue.

Breakeven Analysis:	-	Base	+
	10%		10%
		Yield	
<u>Price</u>	66.60	74	81.40
Operating Cost Breakeven	\$3.19	\$2.87	\$2.61
Ownership Cost Breakeven	\$1.97	\$1.77	\$1.61
Total Cost Breakeven	\$5.16	\$4.64	\$4.22
		Price	
<u>Yield</u>	\$4.39	\$4.88	\$5.37
Operating Cost Breakeven	48.4	43.5	39.6
Ownership Cost Breakeven	29.9	26.9	24.5
Total Cost Breakeven	78.3	70.4	64.0

Soft White Winter Wheat Machinery Costs (\$/acre)

	Timing of Operation	Fixed Costs (\$/acre):			Variable Costs (\$/acre):				Labor		Fuel Use	Total Cost (\$/acre)
		Capital Recovery Costs	Taxes, Housing, Insurance, License	Total Fixed Costs	Repairs	Fuel	Lubricants	Total	(\$/acre)	(hr/acre)	(gal/acre)	
425HP-WT + 60' Heavy Harrow ¹	Aug/Sept	\$1.21	\$0.13	\$1.34	\$0.56	\$0.85	\$0.15	\$1.56	\$0.51	\$0.03	\$0.43	\$3.41
200HP-WT + 100' Pull Sprayer ²	Sept	\$1.86	\$0.21	\$2.07	\$0.58	\$0.34	\$0.06	\$0.98	\$0.43	\$0.02	\$0.17	\$3.48
36' NT Drill ³	Sept	\$5.45	\$0.58	\$6.03	\$3.12	\$2.81	\$0.50	\$6.43	\$1.69	\$0.08	\$1.41	\$14.15
200HP-WT + 100' Pull Sprayer ⁴	April	\$1.86	\$0.21	\$2.07	\$0.58	\$0.34	\$0.06	\$0.98	\$0.43	\$0.02	\$0.17	\$3.48
36' Combine	August	\$10.16	\$0.87	\$11.03	\$1.43	\$2.81	\$0.50	\$4.74	\$1.69	\$0.08	\$1.41	\$17.46
200HP-WT + Bankout Wagon	August	\$1.91	\$0.20	\$2.11	\$0.82	\$1.33	\$0.23	\$2.38	\$1.69	\$0.08	\$0.66	\$6.18
Pickup 3/4 ton 4WD, new	Annual	\$2.16	\$0.38	\$2.54	\$0.78	\$0.00	\$0.16	\$0.94	\$2.64	0.13	0.00	\$6.12
Pickup 3/4 ton 4WD, used	Annual	\$1.56	\$0.44	\$2.00	\$0.78	\$1.22	\$0.22	\$2.22	\$4.38	0.22	0.61	\$8.60
Tandem Axle Truck	Annual	\$1.65	\$0.99	\$2.64	\$0.99	\$0.97	\$0.17	\$2.13	\$3.30	0.17	0.48	\$8.07
Tandem Axle Truck	Annual	\$1.65	\$0.99	\$2.64	\$0.99	\$0.97	\$0.17	\$2.13	\$3.30	0.17	0.48	\$8.07
Trap Wagon	Annual	\$0.92	\$0.23	\$1.15	\$0.30	\$0.05	\$0.01	\$0.36	\$0.20	0.01	0.03	\$1.71
Total:		\$30.39	\$5.23	\$35.62	\$10.93	\$11.69	\$2.23	\$24.85	\$20.26	1.01	5.85	\$80.73

Note: Farm size is assumed to be 2000 acres for the purposes of machinery cost calculations.

Comments:

¹Harrow once unless following winter wheat, in which case you'll need an additional harrow operation.

²Typically 16-24 oz Roundup, 1.5 oz M90, 50 oz ammonium sulfate.

³Typically 80 lb seed, 80 lb N, 20 lb P, 20 lb S.

⁴Typically a tankmix with a wildoat spray such as Osprey (4.75 oz) and broadleaf sprays such as Starane+Salvo (22 oz) and Brox M (16 oz) plus a surfactant such as R-11 (3.2 oz).

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Blue Cells: Data is from the Machinery page (blue tab).

Production Costs for Direct Seeded Hard Red Winter Wheat, Northern Idaho

Item	Quantity Per Acre	Unit	Price or Cost/Unit	Value or Cost/Acre
Gross Returns				
Wheat	74	bu	\$5.73	\$424.02
Variable Costs				
Seed:				\$20.00
Hard Red Winter Wheat Seed	100	lb	\$0.20	\$20.00
Fertilizer:				\$94.00
Nitrogen (dry)	110	lb	\$0.55	\$60.50
Phosphorous (dry)	20	lb	\$1.17	\$23.40
Sulfur (dry)	20	lb	\$0.23	\$4.60
Nitrogen (topdress) ¹	10	lb	\$0.55	\$5.50
Pesticides:				\$43.95
Roundup	20	oz	\$0.39	\$7.80
Ammonium Sulfate	100	oz	\$0.02	\$2.00
M90	3	oz	\$0.01	\$0.03
Osprey	4.75	oz	\$3.55	\$16.86
Starane+Salvo	22	oz	\$0.43	\$9.46
Brox M	16	oz	\$0.30	\$4.80
R-11	3.2	oz	\$0.94	\$3.00
				\$0.00
Machinery:				\$45.11
Fuel	5.85	gal	\$2.00	\$11.69
Lubricants	1	acre	\$2.23	\$2.23
Machinery Repairs	1	acre	\$10.93	\$10.93
Machinery Labor	1.01	acre	\$20.00	\$20.26
				\$0.00
Custom & Consultants:				\$2.15
Rental Sprayer	0	acre	\$1.75	\$0.00
Aerial Spray	0.33	acre	\$6.50	\$2.15
Other:				\$25.00
Crop insurance	1	acre	\$25.00	\$25.00
Storage Facility & Equip. Repairs.				\$0.00
				\$0.00
Operating Interest ²				\$11.81
Total Variable Costs				\$242.02
Variable Costs per Unit				\$3.27
Net Returns Above Variable Costs				\$182.00

Production Costs for Direct Seeded Hard Red Winter Wheat, Northern Idaho

Fixed Costs:				
Capital recovery costs				\$30.39
Machinery insurance, taxes, housing, licenses				\$5.23
Land Cost*	1	acre	\$82.25	\$82.25
*Based on Share Rent Percentage:				
Landlord	33.00%			
Tenant	67.00%			
Overhead ³				\$5.76
Management fee ⁴				\$21.20
Cash rent				\$0.00
Land taxes				\$3.90
Total Fixed Costs				\$148.73
Fixed Costs per Unit				\$2.01
Total Costs per Acre				\$390.74
Total Cost per Unit				\$5.28
Returns to Risk				\$33.28

Notes:

¹Topdressing is assumed to occur one year in three. Typical application is 30 lb of nitrogen, applied either aerially or with a rogator.

²Calculated at 7.5% interest on operating capital for 6 months. This rate can be changed in the Input Prices tab.

³Covers legal, accounting, and utility fees. Calculated as 2.5% of operating expenses.

⁴Calculated as 5% of gross revenue.

Breakeven Analysis:	-	Base	+
	10%		10%
		Yield	
<u>Price</u>	66.60	74	81.40
Operating Cost Breakeven	\$3.63	\$3.27	\$2.97
Ownership Cost Breakeven	\$2.23	\$2.01	\$1.83
Total Cost Breakeven	\$5.87	\$5.28	\$4.80
		Price	
<u>Yield</u>	\$5.16	\$5.73	\$6.30
Operating Cost Breakeven	46.9	42.2	38.4
Ownership Cost Breakeven	28.8	26.0	23.6
Total Cost Breakeven	75.8	68.2	62.0

Hard Red Winter Wheat Machinery Costs (\$/acre)

	Timing of Operation	Fixed Costs (\$/acre):			Variable Costs (\$/acre):				Labor		Fuel Use	Total Cost (\$/acre)
		Capital Recovery Costs	Taxes, Housing, Insurance, License	Total Fixed Costs	Repairs	Fuel	Lubricants	Total	(\$/acre)	(hr/acre)	(gal/acre)	
425HP-WT + 60' Heavy Harrow ¹	Aug/Sept	\$1.21	\$0.13	\$1.34	\$0.56	\$0.85	\$0.15	\$1.56	\$0.51	\$0.03	\$0.43	\$3.41
200HP-WT + 100' Pull Sprayer ²	Sept	\$1.86	\$0.21	\$2.07	\$0.58	\$0.34	\$0.06	\$0.98	\$0.43	\$0.02	\$0.17	\$3.48
36' NT Drill ³	Sept	\$5.45	\$0.58	\$6.03	\$3.12	\$2.81	\$0.50	\$6.43	\$1.69	\$0.08	\$1.41	\$14.15
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200HP-WT + Bankout Wagon	August	\$1.91	\$0.20	\$2.11	\$0.82	\$1.33	\$0.23	\$2.38	\$1.69	\$0.08	\$0.66	\$6.18
Pickup 3/4 ton 4WD, new	Annual	\$2.16	\$0.38	\$2.54	\$0.78	\$0.00	\$0.16	\$0.94	\$2.64	0.13	0.00	\$6.12
Pickup 3/4 ton 4WD, used	Annual	\$1.56	\$0.44	\$2.00	\$0.78	\$1.22	\$0.22	\$2.22	\$4.38	0.22	0.61	\$8.60
Tandem Axle Truck	Annual	\$1.65	\$0.99	\$2.64	\$0.99	\$0.97	\$0.17	\$2.13	\$3.30	0.17	0.48	\$8.07
Tandem Axle Truck	Annual	\$1.65	\$0.99	\$2.64	\$0.99	\$0.97	\$0.17	\$2.13	\$3.30	0.17	0.48	\$8.07
Trap Wagon	Annual	\$0.92	\$0.23	\$1.15	\$0.30	\$0.05	\$0.01	\$0.36	\$0.20	0.01	0.03	\$1.71
Total:		\$30.39	\$5.23	\$35.62	\$10.93	\$11.69	\$2.23	\$24.85	\$20.26	1.01	5.85	\$80.73

Note: Farm size is assumed to be 2000 acres for the purposes of machinery cost calculations.

Comments:

¹Harrow once unless following winter wheat, in which case you'll need an additional harrow operation.

²Typically 16-24 oz Roundup, 1.5 oz M90, 50 oz ammonium sulfate.

³Typically 80 lb seed, 80 lb N, 20 lb P, 20 lb S.

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Production Costs for Direct Seeded Soft White Spring Wheat, Northern Idaho

Item	Quantity Per Acre	Unit	Price or Cost/Unit	Value or Cost/Acre
Gross Returns				
Soft White Spring Wheat	58	bu	\$4.88	\$283.04
Variable Costs				
Seed:				\$12.00
Soft White Wheat Seed	80	lb	\$0.15	\$12.00
Fertilizer:				\$72.00
Nitrogen (dry)	80	lb	\$0.55	\$44.00
Phosphorous (dry)	20	lb	\$1.17	\$23.40
Potassium (dry)	0	lb	\$0.46	\$0.00
Sulfur (dry)	20	lb	\$0.23	\$4.60
				\$0.00
Pesticides:				\$34.73
Roundup	36	oz	\$0.39	\$14.04
M90	3	oz	\$0.01	\$0.03
Ammonium Sulfate	50	oz	\$0.02	\$1.00
Axial	4.1	oz	\$1.81	\$7.42
Brox M	12	oz	\$0.30	\$3.60
Starane	8	oz	\$0.93	\$7.44
InPlace	5	oz	\$0.24	\$1.20
				\$0.00
Fungicides:				\$0.00
Quilt	0	oz	\$1.22	\$0.00
Syltac Sticker	0	pt	\$6.25	\$0.00
				\$0.00
Machinery:				\$46.52
Fuel	6.02	gal	\$2.00	\$12.03
Lubricants	1	acre	\$2.29	\$2.29
Machinery Repairs	1	acre	\$11.51	\$11.51
Machinery Labor	1.03	acre	\$20.00	\$20.69
Other Labor				\$0.00
Custom & Consultants:				\$0.00
Rental Sprayer	0	acre	\$1.75	\$0.00
Custom Aerial	0	acre	\$6.50	\$0.00
				\$0.00
Other:				\$20.00
Crop insurance	1	acre	\$20.00	\$20.00
Storage Facility & Equip. Repairs				\$0.00
				\$0.00
Operating Interest ¹				\$6.95
Total Variable Costs				\$192.20
Variable Costs per Unit				\$3.31
Net Returns Above Variable Costs				\$90.84

Production Costs for Direct Seeded Soft White Spring Wheat, Northern Idaho

Fixed Costs:				
Capital recovery costs				\$32.25
Machinery insurance, taxes, housing, licenses				\$5.44
Land Cost*	1	acre	\$47.68	\$47.68
*Based on Share Rent Percentage:				
Landlord	33.00%			
Tenant	67.00%			
Overhead ²				\$4.63
Management fee ³				\$14.15
Cash rent				\$0.00
Land taxes				\$3.90
Total Fixed Costs				\$108.05
Fixed Costs per Unit				\$1.86
Total Costs per Acre				\$300.25
Total Cost per Unit				\$5.18
Returns to Risk				-\$17.21

Notes:

¹ Calculated at 7.5% interest on operating capital for 6 months. This rate can be changed in the Input Prices tab.

² Covers legal, accounting, and utility fees. Calculated as 2.5% of operating expenses.

³ Calculated as 5% of gross revenue.

Breakeven Analysis:	-	Base	+
	10%	Yield	10%
<u>Price</u>	52.20	58	63.80
Operating Cost Breakeven	\$3.68	\$3.31	\$3.01
Ownership Cost Breakeven	\$2.07	\$1.86	\$1.69
Total Cost Breakeven	\$5.75	\$5.18	\$4.71
		Price	
<u>Yield</u>	\$4.39	\$4.88	\$5.37
Operating Cost Breakeven	43.8	39.4	35.8
Ownership Cost Breakeven	24.6	22.1	20.1
Total Cost Breakeven	68.4	61.5	55.9

Soft White Spring Wheat Machinery Costs (\$/acre)

	Timing of Operation	Fixed Costs (\$/acre):			Variable Costs (\$/acre):				Labor		Fuel Use	Total Cost (\$/acre)
		Capital Recovery Costs	Taxes, Housing, Insurance, License	Total Fixed Costs	Repairs	Fuel	Lubricants	Total	(\$/acre)	(hr/acre)	(gal/acre)	
425HP-WT + 60' Heavy Harrow	Sept	\$1.21	\$0.13	\$1.34	\$0.56	\$0.85	\$0.15	\$1.56	\$0.51	\$0.03	\$0.43	\$3.41
200HP-WT + 100' Pull Sprayer ¹	October	\$1.86	\$0.21	\$2.07	\$0.58	\$0.34	\$0.06	\$0.98	\$0.43	\$0.02	\$0.17	\$3.48
200HP-WT + 100' Pull Sprayer ²	April	\$1.86	\$0.21	\$2.07	\$0.58	\$0.34	\$0.06	\$0.98	\$0.43	\$0.02	\$0.17	\$3.48
36' NT Drill ³	April	\$5.45	\$0.58	\$6.03	\$3.12	\$2.81	\$0.50	\$6.43	\$1.69	\$0.08	\$1.41	\$14.15
200HP-WT + 100' Pull Sprayer ⁴	May	\$1.86	\$0.21	\$2.07	\$0.58	\$0.34	\$0.06	\$0.98	\$0.43	\$0.02	\$0.17	\$3.48
36' Combine	August	\$10.16	\$0.87	\$11.03	\$1.43	\$2.81	\$0.50	\$4.74	\$1.69	\$0.08	\$1.41	\$17.46
200HP-WT + Bankout Wagon	August	\$1.91	\$0.20	\$2.11	\$0.82	\$1.33	\$0.23	\$2.38	\$1.69	\$0.08	\$0.66	\$6.18
Pickup 3/4 ton 4WD, new	Annual	\$2.16	\$0.38	\$2.54	\$0.78	\$0.00	\$0.16	\$0.94	\$2.64	0.13	0.00	\$6.12
Pickup 3/4 ton 4WD, used	Annual	\$1.56	\$0.44	\$2.00	\$0.78	\$1.22	\$0.22	\$2.22	\$4.38	0.22	0.61	\$8.60
Tandem Axle Truck	Annual	\$1.65	\$0.99	\$2.64	\$0.99	\$0.97	\$0.17	\$2.13	\$3.30	0.17	0.48	\$8.07
Tandem Axle Truck	Annual	\$1.65	\$0.99	\$2.64	\$0.99	\$0.97	\$0.17	\$2.13	\$3.30	0.17	0.48	\$8.07
Trap Wagon	Annual	\$0.92	\$0.23	\$1.15	\$0.30	\$0.05	\$0.01	\$0.36	\$0.20	0.01	0.03	\$1.71
Total:		\$32.25	\$5.44	\$37.69	\$11.51	\$12.03	\$2.29	\$25.83	\$20.69	1.03	6.02	\$84.21

Note: Farm size is assumed to be 2000 acres for the purposes of machinery cost calculations.

Comments:

¹Typically 16-24 oz Roundup, 1.5 oz M90, 50 oz ammonium sulfate.

²Typically 16-24 oz Roundup, 1.5 oz M90, 50 oz ammonium sulfate.

³Typically 80 lb seed, 80 lb N, 20 lb P, 20 lb S.

⁴Typically a tankmix with broadleaf sprays such as Starane+Salvo (22 oz) and Brox M (12 oz) plus a surfactant such as R-11 (3.2 oz). In addition, a wildoat spray such as Axial (8.2 oz/ac) is used on about half the acreage (thus 4.1 oz per acre is budgeted).

Legend: Follow directions below to preserve equations in this spreadsheet.

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Orange Cells: Revise this data here to reflect your situation.

Green Cells: Data are from Input Costs page (green tab).

Blue Cells: Data are from the Machinery page (blue tab).

Production Costs for Direct Seeded Hard Red Spring Wheat, Northern Idaho

Item	Quantity Per Acre	Unit	Price or Cost/Unit	Value or Cost/Acre
Gross Returns				
Hard Red Spring Wheat	58	bu	\$6.79	\$393.82
Variable Costs				
Seed:				\$22.00
Hard Red Spring Wheat Seed	100	lb	\$0.22	\$22.00
Fertilizer:				\$88.50
Nitrogen (dry)	110	lb	\$0.55	\$60.50
Phosphorous (dry)	20	lb	\$1.17	\$23.40
Potassium (dry)	0	lb	\$0.46	\$0.00
Sulfur (dry)	20	lb	\$0.23	\$4.60
				\$0.00
Pesticides:				\$31.80
Roundup	36	oz	\$0.39	\$14.04
M90	3	oz	\$0.01	\$0.03
Ammonium Sulfate	103.2	oz	\$0.02	\$2.06
Axial	4.1	oz	\$1.81	\$7.42
Brox M	12	oz	\$0.30	\$3.60
Starane	8	oz	\$0.43	\$3.44
InPlace	5	oz	\$0.24	\$1.20
				\$0.00
Fungicides:				\$0.00
Quilt		oz	\$1.22	\$0.00
Syltac Sticker		pt	\$6.25	\$0.00
				\$0.00
Machinery:				\$46.52
Fuel	6.02	gal	\$2.00	\$12.03
Lubricants	1	acre	\$2.29	\$2.29
Machinery Repairs	1	acre	\$11.51	\$11.51
Machinery Labor	1.03	acre	\$20.00	\$20.69
				\$0.00
Custom & Consultants:				\$0.00
Rental Sprayer Applicator	0	acre	\$1.75	\$0.00
Custom Aerial	0	acre	\$6.50	\$0.00
				\$0.00
Other:				\$20.00
Crop insurance	1	acre	\$20.00	\$20.00
Storage Facility & Equip. Repairs				\$0.00
				\$0.00
Operating Interest ¹				\$7.83
Total Variable Costs				\$216.65
Variable Costs per Unit				\$3.74
Net Returns Above Variable Costs				\$177.17

Production Costs for Direct Seeded Hard Red Spring Wheat, Northern Idaho

Fixed Costs:				
Capital recovery costs				\$32.25
Machinery insurance, taxes, housing, licenses				\$5.44
Land Cost*	1	acre	\$79.76	\$79.76
*Based on Share Rent Percentage:				
Landlord	33.00%			
Tenant	67.00%			
Overhead ²				\$5.22
Management fee ³				\$19.69
Cash rent				\$0.00
Land taxes				\$3.90
Total Fixed Costs				\$146.26
Fixed Costs per Unit				\$2.52
Total Costs per Acre				\$362.91
Total Cost per Unit				\$6.26
Returns to Risk				\$30.91

Notes:

¹Calculated at 7.5% interest on operating capital for 6 months. This rate can be changed in the Input Prices tab.

²Covers legal, accounting, and utility fees. Calculated as 2.5% of operating expenses.

³Calculated as 5% of gross revenue.

Breakeven Analysis:	-	Base	+
	10%		10%
		Yield	
<u>Price</u>	52.20	58	63.80
Operating Cost Breakeven	\$4.15	\$3.74	\$3.40
Ownership Cost Breakeven	\$2.80	\$2.52	\$2.29
Total Cost Breakeven	\$6.95	\$6.26	\$5.69
		Price	
<u>Yield</u>	\$6.11	\$6.79	\$7.47
Operating Cost Breakeven	35.5	31.9	29.0
Ownership Cost Breakeven	23.9	21.5	19.6
Total Cost Breakeven	59.4	53.4	48.6

Hard Red Spring Wheat Machinery Costs (\$/acre)

	Timing of Operation	Fixed Costs (\$/acre):			Variable Costs (\$/acre):				Labor		Fuel Use	Total Cost (\$/acre)
		Capital Recovery Costs	Taxes, Housing, Insurance, License	Total Fixed Costs	Repairs	Fuel	Lubricants	Total	(\$/acre)	(hr/acre)	(gal/acre)	
425HP-WT + 60' Heavy Harrow	Sept	\$1.21	\$0.13	\$1.34	\$0.56	\$0.85	\$0.15	\$1.56	\$0.51	\$0.03	\$0.43	\$3.41
200HP-WT + 100' Pull Sprayer ¹	October	\$1.86	\$0.21	\$2.07	\$0.58	\$0.34	\$0.06	\$0.98	\$0.43	\$0.02	\$0.17	\$3.48
200HP-WT + 100' Pull Sprayer ²	April	\$1.86	\$0.21	\$2.07	\$0.58	\$0.34	\$0.06	\$0.98	\$0.43	\$0.02	\$0.17	\$3.48
36' NT Drill ³	April	\$5.45	\$0.58	\$6.03	\$3.12	\$2.81	\$0.50	\$6.43	\$1.69	\$0.08	\$1.41	\$14.15
200HP-WT + 100' Pull Sprayer ⁴	May	\$1.86	\$0.21	\$2.07	\$0.58	\$0.34	\$0.06	\$0.98	\$0.43	\$0.02	\$0.17	\$3.48
36' Combine	August	\$10.16	\$0.87	\$11.03	\$1.43	\$2.81	\$0.50	\$4.74	\$1.69	\$0.08	\$1.41	\$17.46
200HP-WT + Bankout Wagon	August	\$1.91	\$0.20	\$2.11	\$0.82	\$1.33	\$0.23	\$2.38	\$1.69	\$0.08	\$0.66	\$6.18
Pickup 3/4 ton 4WD, new	Annual	\$2.16	\$0.38	\$2.54	\$0.78	\$0.00	\$0.16	\$0.94	\$2.64	0.13	0.00	\$6.12
Pickup 3/4 ton 4WD, used	Annual	\$1.56	\$0.44	\$2.00	\$0.78	\$1.22	\$0.22	\$2.22	\$4.38	0.22	0.61	\$8.60
Tandem Axle Truck	Annual	\$1.65	\$0.99	\$2.64	\$0.99	\$0.97	\$0.17	\$2.13	\$3.30	0.17	0.48	\$8.07
Tandem Axle Truck	Annual	\$1.65	\$0.99	\$2.64	\$0.99	\$0.97	\$0.17	\$2.13	\$3.30	0.17	0.48	\$8.07
Trap Wagon	Annual	\$0.92	\$0.23	\$1.15	\$0.30	\$0.05	\$0.01	\$0.36	\$0.20	0.01	0.03	\$1.71
Total:		\$32.25	\$5.44	\$37.69	\$11.51	\$12.03	\$2.29	\$25.83	\$20.69	1.03	6.02	\$84.21

Note: Farm size is assumed to be 2000 acres for the purposes of machinery cost calculations.

Comments:

¹Typically 16-24 oz Roundup, 1.5 oz M90, 50 oz ammonium sulfate.

²Typically 16-24 oz Roundup, 1.5 oz M90, 50 oz ammonium sulfate.

³Typically 100 lb seed, 110 lb N, 20 lb P, 20 lb S.

⁴Typically a tankmix with broadleaf sprays such as Starane+Salvo (22 oz) and Brox M (1.6 oz) plus a surfactant such as R-11 (3.2 oz). In addition, a wildoat spray such as Axial (8.2 oz/ac) is used on about half the acreage (thus 4.1 oz per acre is budgeted).

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Blue Cells: Data are from the Machinery page (blue tab).

Production Costs for Direct Seeded Bluegrass Establishment, Northern Idaho

Item	Quantity Per Acre	Unit	Price or Cost/Unit	Value or Cost/Acre
Variable Costs				
Seed:				\$16.99
Bluegrass Seed	45	lb	\$0.38	\$16.99
Fertilizer:				\$0.00
				\$0.00
Pesticides:				\$0.00
		oz		\$0.00
		oz		\$0.00
Machinery:				\$38.58
Fuel	4.59	gal	\$2.00	\$9.17
Lubricants	1	acre	\$1.78	\$1.78
Machinery Repairs	1	acre	\$8.67	\$8.67
Machinery Labor	0.95	acre	\$20.00	\$18.96
				\$0.00
Custom & Consultants:				\$0.00
Rental Sprayer		acre	\$1.75	\$0.00
Custom Aerial Spray		acre	\$6.50	\$0.00
				\$0.00
Other:				\$0.00
				\$0.00
Operating Interest ¹				\$2.08
Total Variable Costs				\$57.66
Fixed Costs:				
Capital recovery costs				\$18.64
Machinery insurance, taxes, housing, licenses				\$4.18
Overhead ²				\$1.39
Cash rent				\$0.00
Land taxes				\$3.90
Total Fixed Costs				\$28.11
Total Costs per Acre				\$85.76

Notes:

¹Calculated at 7.5% interest on operating capital for 6 months. This rate can be changed in the Input Prices tab.

²Covers legal, accounting, and utility fees. Calculated as 2.5% of operating expenses.

Bluegrass Seed Establishment Machinery Costs (\$/acre)

	Timing of Operation	Fixed Costs (\$/acre):			Variable Costs (\$/acre):				Labor		Fuel Use	Total Cost (\$/acre)
		Capital Recovery Costs	Taxes, Housing, Insurance, License	Total Fixed Costs	Repairs	Fuel	Lubricants	Total	(\$/acre)	(hr/acre)	(gal/acre)	
425HP-WT + 60' Heavy Harrow	Sept	\$1.21	\$0.13	\$1.34	\$0.56	\$0.85	\$0.15	\$1.56	\$0.51	\$0.03	\$0.43	\$3.41
36' NT Drill ¹	Sept	\$5.45	\$0.58	\$6.03	\$3.12	\$2.81	\$0.50	\$6.43	\$1.69	\$0.08	\$1.41	\$14.15
200HP-WT + 20' Rotary Mower	June	\$2.02	\$0.22	\$2.24	\$0.58	\$1.15	\$0.20	\$1.93	\$1.47	\$0.07	\$0.57	\$5.64
200HP-WT + 20' Rotary Mower	July	\$2.02	\$0.22	\$2.24	\$0.58	\$1.15	\$0.20	\$1.93	\$1.47	\$0.07	\$0.57	\$5.64
Pickup 3/4 ton 4WD, new	Annual	\$2.16	\$0.38	\$2.54	\$0.78	\$0.00	\$0.16	\$0.94	\$2.64	0.13	0.00	\$6.12
Pickup 3/4 ton 4WD, used	Annual	\$1.56	\$0.44	\$2.00	\$0.78	\$1.22	\$0.22	\$2.22	\$4.38	0.22	0.61	\$8.60
Tandem Axle Truck	Annual	\$1.65	\$0.99	\$2.64	\$0.99	\$0.97	\$0.17	\$2.13	\$3.30	0.17	0.48	\$8.07
Tandem Axle Truck	Annual	\$1.65	\$0.99	\$2.64	\$0.99	\$0.97	\$0.17	\$2.13	\$3.30	0.17	0.48	\$8.07
Trap Wagon	Annual	\$0.92	\$0.23	\$1.15	\$0.30	\$0.05	\$0.01	\$0.36	\$0.20	0.01	0.03	\$1.71
Total:		\$18.64	\$4.18	\$22.82	\$8.67	\$9.17	\$1.78	\$19.62	\$18.96	0.95	4.59	\$61.40

Note: Farm size is assumed to be 2000 acres for the purposes of machinery cost calculations.

Comments:

¹5.5 lb bluegrass seed.

Legend: Follow directions below to preserve equations in this spreadsheet.

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Orange Cells: Revise this data here to reflect your situation.

Green Cells: Data are from Input Costs page (green tab).

Blue Cells: Data are from the Machinery page (blue tab).

Production Costs for Direct Seeded Bluegrass Production, Northern Idaho

Item	Quantity Per Acre	Unit	Price or Cost/Unit	Value or Cost/Acre
Gross Returns				
Bluegrass seed	675	lb	\$0.65	\$438.75
Variable Costs				
Fertilizer:				\$104.55
Nitrogen	135	lb	\$0.55	\$74.25
Phosphorus	20	lb	\$1.17	\$23.40
Sulfur	30	lb	\$0.23	\$6.90
				\$0.00
Pesticides:				\$25.16
Banvel 4E	8	oz	\$0.77	\$6.16
Beacon	0.5	oz	\$32.00	\$16.00
Crop oil concentrate	3	pt	\$1.00	\$3.00
				\$0.00
				\$0.00
				\$0.00
Machinery:				\$35.24
Fuel	4.17	gal	\$2.00	\$8.33
Lubricants	1	acre	\$1.63	\$1.63
Machinery Repairs	1	acre	\$6.83	\$6.83
Machinery Labor	0.92	acre	\$20.00	\$18.45
				\$0.00
Custom & Consultants:				\$18.00
Rental Fertilizer Spreader	1	acre	\$1.00	\$1.00
Custom Swathing	1	acre	\$15.00	\$15.00
Hauling (\$75 per 25,000 lb load)	1	acre	\$2.00	\$2.00
Other:				\$89.75
Crop insurance	1	acre		\$0.00
Burning permit	1	acre	\$2.00	\$2.00
Bags, tags, etc.	6.75	cwt	\$13.00	\$87.75
Operating Interest ¹				\$10.23
Total Variable Costs				\$282.93
Variable Costs per Unit				\$0.42
Net Returns Above Variable Costs				\$155.82

Production Costs for Direct Seeded Bluegrass Production, Northern Idaho

Fixed Costs:				
Capital recovery costs				\$22.46
Machinery insurance, taxes, housing, licenses				\$4.37
Land Cost*	1	acre	\$98.08	\$98.08
*Based on Share Rent Percentage:				
Landlord	33.00%			
Tenant	67.00%			
Overhead ²				\$6.82
Management fee ³				\$21.94
Bluegrass establishment cost*				\$18.55
*Based on years of production:				
	6			
Cash rent				\$0.00
Land taxes				\$3.90
Total Fixed Costs				\$176.12
Fixed Costs per Unit				\$0.26
Total Costs per Acre				\$459.05
Total Cost per Unit				\$0.68
Returns to Risk				-\$20.30

Notes:

¹Calculated at 7.5% interest on operating capital for 6 months. This rate can be changed in the Input Prices tab.

²Covers legal, accounting, and utility fees. Calculated as 2.5% of operating expenses.

³Calculated as 5% of gross revenue.

Breakeven Analysis:			
	-	Base	+
	10%		10%
	Yield		
Price	607.5	675	742.5
Operating Cost Breakeven	\$0.47	\$0.42	\$0.38
Ownership Cost Breakeven	\$0.29	\$0.26	\$0.24
Total Cost Breakeven	\$0.76	\$0.68	\$0.62
	Price		
Yield	\$0.59	\$0.65	\$0.72
Operating Cost Breakeven	483.6	435.3	395.7
Ownership Cost Breakeven	301.1	271.0	246.3
Total Cost Breakeven	784.7	706.2	642.0

Bluegrass Production Machinery Costs (\$/acre)

	Timing of Operation	Fixed Costs (\$/acre):			Variable Costs (\$/acre):				Labor		Fuel Use	Total Cost (\$/acre)
		Capital Recovery Costs	Taxes, Housing, Insurance, License	Total Fixed Costs	Repairs	Fuel	Lubricants	Total	(\$/acre)	(hr/acre)	(gal/acre)	
200HP-WT + Fert. Spreader ¹	October	\$0.59	\$0.06	\$0.65	\$0.16	\$0.64	\$0.11	\$0.91	\$0.82	\$0.04	\$0.32	\$2.38
200HP-WT + 100' Pull Sprayer ²	April	\$1.86	\$0.21	\$2.07	\$0.58	\$0.34	\$0.06	\$0.98	\$0.43	\$0.02	\$0.17	\$3.48
Custom Swathing	July											
36' Combine	August	\$10.16	\$0.87	\$11.03	\$1.43	\$2.81	\$0.50	\$4.74	\$1.69	\$0.08	\$1.41	\$17.46
200HP-WT + Bankout Wagon	August	\$1.91	\$0.20	\$2.11	\$0.82	\$1.33	\$0.23	\$2.38	\$1.69	\$0.08	\$0.66	\$6.18
Pickup 3/4 ton 4WD, new	Annual	\$2.16	\$0.38	\$2.54	\$0.78	\$0.00	\$0.16	\$0.94	\$2.64	0.13	0.00	\$6.12
Pickup 3/4 ton 4WD, used	Annual	\$1.56	\$0.44	\$2.00	\$0.78	\$1.22	\$0.22	\$2.22	\$4.38	0.22	0.61	\$8.60
Tandem Axle Truck	Annual	\$1.65	\$0.99	\$2.64	\$0.99	\$0.97	\$0.17	\$2.13	\$3.30	0.17	0.48	\$8.07
Tandem Axle Truck	Annual	\$1.65	\$0.99	\$2.64	\$0.99	\$0.97	\$0.17	\$2.13	\$3.30	0.17	0.48	\$8.07
Trap Wagon	Annual	\$0.92	\$0.23	\$1.15	\$0.30	\$0.05	\$0.01	\$0.36	\$0.20	0.01	0.03	\$1.71
Total:		\$22.46	\$4.37	\$26.83	\$6.83	\$8.33	\$1.63	\$16.79	\$18.45	0.92	4.17	\$62.07

Note: Farm size is assumed to be 2000 acres for the purposes of machinery cost calculations.

Comments:

¹Typically 135 lb N, 20 lb K, and 30 lb S, plus a rented fertilizer spreader (\$1/acre).

²Typically 16-24 oz Roundup, 1.5 oz M90, 50 oz ammonium sulfate.

³Typically 100 lb seed, 110 lb N, 20 lb P, 20 lb S.

⁴Typically a tankmix with broadleaf sprays such as Starane+Salvo (22 oz) and Brox M (1.6 oz) plus a surfactant such as R-11 (3.2 oz). In addition, a wildoat spray such as Axial (8.2 oz/acre) is used on about half the acreage (thus 4.1 oz per acre is budgeted).

Legend: Follow directions below to preserve equations in this spreadsheet.

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Blue Cells: Data are from the Machinery page (blue tab).

Production Costs for Direct Seeded Spring Canola, Northern Idaho

Item	Quantity Per Acre	Unit	Price or Cost/Unit	Value or Cost/Acre
Gross Returns				
Canola	1300	lb	\$0.17	\$214.50
Variable Costs				
Seed:				\$30.00
Canola Seed	5	lb	\$6.00	\$30.00
Fertilizer:				\$55.63
Nitrogen (dry)	80	lb	\$0.55	\$44.00
Phosphorous (dry)	6.6	lb	\$1.17	\$7.72
Sulfur (dry)	17	lb	\$0.23	\$3.91
Pesticides:				\$35.06
Roundup	56	oz	\$0.39	\$21.84
Ammonium Sulfate	150	oz	\$0.02	\$3.00
M90	4.5	oz	\$0.01	\$0.05
Capture	1	acre	\$10.17	\$10.17
Machinery:				\$46.52
Fuel	6.02	gal	\$2.00	\$12.03
Lubricants	1	acre	\$2.29	\$2.29
Machinery Repairs	1	acre	\$11.51	\$11.51
Machinery Labor	1.03	acre	\$20.00	\$20.69
Custom & Consultants:				\$6.50
Custom Aerial Spray	1	acre	\$6.50	\$6.50
Other:				\$15.00
Crop insurance	1	acre	\$15.00	\$15.00
Storage Facility & Equip. Repairs				\$0.00
Overhead ¹				\$9.44
Operating Interest ¹				\$7.08
Total Variable Costs				\$205.22
Variable Costs per Unit				\$0.16
Net Returns Above Variable Costs				\$9.28

Production Costs for Direct Seeded Spring Canola, Northern Idaho

Fixed Costs:				
Capital recovery costs				\$32.25
Machinery insurance, taxes, housing, licenses				\$5.44
Land Cost*	1	acre	\$32.01	\$32.01
*Based on Share Rent Percentage:				
Landlord	33.00%			
Tenant	67.00%			
Overhead ²				\$4.72
Management fee ³				\$10.73
Cash rent				\$0.00
Land taxes				\$3.90
Total Fixed Costs				\$89.04
Fixed Costs per Unit				\$0.07
Total Costs per Acre				\$294.26
Total Cost per Unit				\$0.23
Returns to Risk				-\$79.76

Notes:

¹Calculated at 7.5% interest on operating capital for 6 months. This rate can be changed in the Input Prices tab.

²Covers legal, accounting, and utility fees. Calculated as 2.5% of operating expenses.

³Calculated as 5% of gross revenue.

Breakeven Analysis:	-	Base	+
	10%	Yield	10%
<u>Price</u>	1170	1300	1430
Operating Cost Breakeven	\$0.18	\$0.16	\$0.14
Ownership Cost Breakeven	\$0.08	\$0.07	\$0.06
Total Cost Breakeven	\$0.25	\$0.23	\$0.21
		Price	
<u>Yield</u>	\$0.15	\$0.17	\$0.18
Operating Cost Breakeven	1382.0	1243.8	1130.7
Ownership Cost Breakeven	599.6	539.6	490.6
Total Cost Breakeven	1981.6	1783.4	1621.3

Spring Canola Machinery Costs (\$/acre)

	Timing of Operation	Fixed Costs (\$/acre):			Variable Costs (\$/acre):				Labor		Fuel Use	Total Cost (\$/acre)
		Capital Recovery Costs	Taxes, Housing, Insurance, License	Total Fixed Costs	Repairs	Fuel	Lubricants	Total	(\$/acre)	(hr/acre)	(gal/acre)	
425HP-WT + 60' Heavy Harrow	Sept	\$1.21	\$0.13	\$1.34	\$0.56	\$0.85	\$0.15	\$1.56	\$0.51	\$0.03	\$0.43	\$3.41
200HP-WT + 100' Pull Sprayer ¹	October	\$1.86	\$0.21	\$2.07	\$0.58	\$0.34	\$0.06	\$0.98	\$0.43	\$0.02	\$0.17	\$3.48
200HP-WT + 100' Pull Sprayer ²	April	\$1.86	\$0.21	\$2.07	\$0.58	\$0.34	\$0.06	\$0.98	\$0.43	\$0.02	\$0.17	\$3.48
36' NT Drill ³	April	\$5.45	\$0.58	\$6.03	\$3.12	\$2.81	\$0.50	\$6.43	\$1.69	\$0.08	\$1.41	\$14.15
200HP-WT + 100' Pull Sprayer ⁴	May	\$1.86	\$0.21	\$2.07	\$0.58	\$0.34	\$0.06	\$0.98	\$0.43	\$0.02	\$0.17	\$3.48
36' Combine	August	\$10.16	\$0.87	\$11.03	\$1.43	\$2.81	\$0.50	\$4.74	\$1.69	\$0.08	\$1.41	\$17.46
200HP-WT + Bankout Wagon	August	\$1.91	\$0.20	\$2.11	\$0.82	\$1.33	\$0.23	\$2.38	\$1.69	\$0.08	\$0.66	\$6.18
Pickup 3/4 ton 4WD, new	Annual	\$2.16	\$0.38	\$2.54	\$0.78	\$0.00	\$0.16	\$0.94	\$2.64	0.13	0.00	\$6.12
Pickup 3/4 ton 4WD, used	Annual	\$1.56	\$0.44	\$2.00	\$0.78	\$1.22	\$0.22	\$2.22	\$4.38	0.22	0.61	\$8.60
Tandem Axle Truck	Annual	\$1.65	\$0.99	\$2.64	\$0.99	\$0.97	\$0.17	\$2.13	\$3.30	0.17	0.48	\$8.07
Tandem Axle Truck	Annual	\$1.65	\$0.99	\$2.64	\$0.99	\$0.97	\$0.17	\$2.13	\$3.30	0.17	0.48	\$8.07
Trap Wagon	Annual	\$0.92	\$0.23	\$1.15	\$0.30	\$0.05	\$0.01	\$0.36	\$0.20	0.01	0.03	\$1.71
Total:		\$32.25	\$5.44	\$37.69	\$11.51	\$12.03	\$2.29	\$25.83	\$20.69	1.03	6.02	\$84.21

Note: Farm size is assumed to be 2000 acres for the purposes of machinery cost calculations.

Comments:

¹Typically 16-24 oz Roundup, 1.5 oz M90, 50 oz ammonium sulfate.

²Typically 16-24 oz Roundup, 1.5 oz M90, 50 oz ammonium sulfate.

³Typically 5 lb seed, 80 lb N, 6.6 lb P, 17 lb S.

⁴Typically 16 oz Roundup, 1.5 oz M90, 50 oz ammonium sulfate.

Legend: Follow directions below to preserve equations in this spreadsheet.

Yellow Cells: Data are from Summary page (yellow tab).

Orange Cells: Revise this data here to reflect your situation.

Green Cells: Data are from Input Costs page (green tab).

Blue Cells: Data are from the Machinery page (blue tab).

Production Costs for Chem Fallow, Northern Idaho

Item	Quantity Per Acre	Unit	Price or Cost/Unit	Value or Cost/Acre
<u>Variable Costs</u>				
Pesticides:				\$21.12
Roundup	54	oz	\$0.39	\$21.06
Ammonium Sulfate		oz	\$0.02	\$0.00
M90	6	oz	\$0.01	\$0.06
				\$0.00
Machinery:				\$29.31
Fuel	2.71	gal	\$2.00	\$5.42
Lubricants	1	acre	\$1.12	\$1.12
Machinery Repairs	1	acre	\$6.72	\$6.72
Machinery Labor	0.80	acre	\$20.00	\$16.05
				\$0.00
Custom & Consultants:				\$0.00
Rental Sprayer	0	acre	\$1.75	\$0.00
Custom Aerial Spray	0	acre	\$6.50	\$0.00
				\$0.00
Other:				\$0.00
				\$0.00
Operating Interest ¹				\$1.89
Total Variable Costs				\$52.32
<u>Fixed Costs:</u>				
Capital recovery costs				\$16.59
Machinery insurance, taxes, housing, licenses				\$4.00
Overhead ²				\$1.26
Cash rent				\$0.00
Land taxes				\$3.90
Total Fixed Costs				\$25.75
Total Costs per Acre				\$78.07

Notes:

¹Calculated at 7.5% interest on operating capital for 6 months. This rate can be changed in the Input Prices tab.

²Covers legal, accounting, and utility fees. Calculated as 2.5% of operating expenses.

Chem Fallow Machinery Costs (\$/acre)

	Timing of Operation	Fixed Costs (\$/acre):			Variable Costs (\$/acre):				Labor		Fuel Use	Total Cost (\$/acre)
		Capital Recovery Costs	Taxes, Housing, Insurance, License	Total Fixed Costs	Repairs	Fuel	Lubricants	Total	(\$/acre)	(hr/acre)	(gal/acre)	
200HP-WT + 100' Pull Sprayer ¹	Fall	\$1.86	\$0.21	\$2.07	\$0.58	\$0.34	\$0.06	\$0.98	\$0.43	\$0.02	\$0.17	\$3.48
200HP-WT + 100' Pull Sprayer ²	Spring	\$1.86	\$0.21	\$2.07	\$0.58	\$0.34	\$0.06	\$0.98	\$0.43	\$0.02	\$0.17	\$3.48
200HP-WT + 100' Pull Sprayer ³	June	\$1.86	\$0.21	\$2.07	\$0.58	\$0.34	\$0.06	\$0.98	\$0.43	\$0.02	\$0.17	\$3.48
200HP-WT + 100' Pull Sprayer ⁴	July	\$1.86	\$0.21	\$2.07	\$0.58	\$0.34	\$0.06	\$0.98	\$0.43	\$0.02	\$0.17	\$3.48
425HP-WT + 60' Heavy Harrow	September	\$1.21	\$0.13	\$1.34	\$0.56	\$0.85	\$0.15	\$1.56	\$0.51	\$0.03	\$0.43	\$3.41
Pickup 3/4 ton 4WD, new	Annual	\$2.16	\$0.38	\$2.54	\$0.78	\$0.00	\$0.16	\$0.94	\$2.64	0.13	0.00	\$6.12
Pickup 3/4 ton 4WD, used	Annual	\$1.56	\$0.44	\$2.00	\$0.78	\$1.22	\$0.22	\$2.22	\$4.38	0.22	0.61	\$8.60
Tandem Axle Truck	Annual	\$1.65	\$0.99	\$2.64	\$0.99	\$0.97	\$0.17	\$2.13	\$3.30	0.17	0.48	\$8.07
Tandem Axle Truck	Annual	\$1.65	\$0.99	\$2.64	\$0.99	\$0.97	\$0.17	\$2.13	\$3.30	0.17	0.48	\$8.07
Trap Wagon	Annual	\$0.92	\$0.23	\$1.15	\$0.30	\$0.05	\$0.01	\$0.36	\$0.20	0.01	0.03	\$1.71
Total:		\$16.59	\$4.00	\$20.59	\$6.72	\$5.42	\$1.12	\$13.26	\$16.05	\$0.80	\$2.71	\$49.90

Note: Farm size is assumed to be 2000 acres for the purposes of machinery cost calculations.

¹18 oz Roundup, 1.5 oz M90

²18 oz Roundup, 1.5 oz M90

³10 oz Roundup, 1.5 oz M90

⁴8 oz Roundup, 1.5 oz M90

Machinery Costs (\$/acre)

Note: Per hour machinery costs can be changed in this master table and they will update throughout. Per acre costs are calculated in a separate machinery cost program using the values listed in the Machinery Complement tab.

	Fixed Costs (\$/acre):			Variable Costs (\$/acre):				Labor		Fuel Use	Total Cost (\$/acre)
	Capital Recovery Costs	Taxes, Housing, Insurance, License	Total Fixed Costs	Repairs	Fuel	Lubricants	Total	(\$/acre)	(hr/acre)	(gal/acre)	
<i>Machinery costs for these implements are spread across every acre of the farm, regardless of crops produced:</i>											
Pickup 3/4 ton 4WD, new	\$2.16	\$0.38	\$2.54	\$0.78		\$0.16	\$0.94	\$2.64	0.13	0.00	\$6.12
Pickup 3/4 ton 4WD, used	\$1.56	\$0.44	\$2.00	\$0.78	\$1.22	\$0.22	\$2.22	\$4.38	0.22	0.61	\$8.60
Tandem Axle Truck	\$1.65	\$0.99	\$2.64	\$0.99	\$0.97	\$0.17	\$2.13	\$3.30	0.17	0.48	\$8.07
Tandem Axle Truck	\$1.65	\$0.99	\$2.64	\$0.99	\$0.97	\$0.17	\$2.13	\$3.30	0.17	0.48	\$8.07
Trap Wagon	\$0.92	\$0.23	\$1.15	\$0.30	\$0.05	\$0.01	\$0.36	\$0.20	0.01	0.03	\$1.71
Subtotal:	\$7.94	\$3.03	\$10.97	\$3.84	\$3.21	\$0.73	\$7.78	\$13.82	0.69	1.61	\$32.57
<i>Machinery costs for these implements are specific to the operations for each crop:</i>											
200HP-WT + 100' Pull Sprayer	\$1.86	\$0.21	\$2.07	\$0.58	\$0.34	\$0.06	\$0.98	\$0.43	\$0.02	\$0.17	\$3.48
200HP-WT + 20' Rotary Mower	\$2.02	\$0.22	\$2.24	\$0.58	\$1.15	\$0.20	\$1.93	\$1.47	\$0.07	\$0.57	\$5.64
200HP-WT + 45' Fert Spreader (rental)	\$0.59	\$0.06	\$0.65	\$0.16	\$0.64	\$0.11	\$0.91	\$0.82	\$0.04	\$0.32	\$2.38
425HP-WT + 60' Heavy Harrow	\$1.21	\$0.13	\$1.34	\$0.56	\$0.85	\$0.15	\$1.56	\$0.51	\$0.03	\$0.43	\$3.41
425HP-WT + 36' NT Drill	\$5.45	\$0.58	\$6.03	\$3.12	\$2.81	\$0.50	\$6.43	\$1.69	\$0.08	\$1.41	\$14.15
36' Combine	\$10.16	\$0.87	\$11.03	\$1.43	\$2.81	\$0.50	\$4.74	\$1.69	\$0.08	\$1.41	\$17.46
200HP-WT + Bankout Wagon	\$1.91	\$0.20	\$2.11	\$0.82	\$1.33	\$0.23	\$2.38	\$1.69	\$0.08	\$0.66	\$6.18
Total:	\$29.23	\$5.10	\$34.33	\$10.26	\$11.82	\$2.25	\$24.33	\$20.43	1.02	5.91	\$79.09

Note: Farm size is assumed to be 2000 acres for the purposes of machinery cost calculations.

Machinery Complement for Direct Seed/No Tillage, Northern Idaho

Type of Machine	Current Value \$	Age When Purchased	Years of Life	Annual Hours of Use	Salvage Value \$	Annual Repairs (Materials & Labor) \$	Gallons of Fuel/Hr.	Taxes, Housing, Insur., Licenses %	Labor Multiplier	Acres per Hour
<i>Tractors:</i>										
200HP FWA Tractor	50,000	10	15	300	19,000	1,242	9	1.0	1.1	
425HP 4WD Tractor	80,000	10	15	350	30,000	2,830	16	1.0	1.1	
<i>Equipment:</i>										
Bankout Wagon w/ 200HP-WT	15,000	5	15	155	6,186	1000		1	1.1	13
30' Rotary Mower w/ 200HP-WT	22,000	4	15	40	2,500	600		1	1.1	15
100' Pull Sprayer w/ 200HP-WT	35,000	2	15	100	18,500	1000		1	1.2	51
60' Heavy Harrow w/ 425HP-WT	15,000	5	15	50	5,800	750		1	1.1	43
36' NT Drill w/ 425HP-WT	80,000	4	10	175	53,000	5,000	17	1	1.2	13
Fertilizer Tanks & Pump	25,000	0	20		0	1000				
36' Combine	225,000	5	10	200	77,570	3,708	15	2.6	1.25	13
<i>Trucks:</i>										
				Miles/year:			MPG:			
Tandem Axle Truck	35,000	15	15	6,000	8,000	2,000	6	6.8	1.1	
Tandem Axle Truck	35,000	15	15	6,000	8,000	2,000	6	6.8	1.1	
Trap Wagon	15,000	10	10	500	3,000	600	12	3.8	1.2	
3/4T 4WD Pickup, new	34,000	0	5	12,000	22,000	1,500	16	6.8	1.1	