



University of Idaho Extension



Photo: Kate Painter

2019 Direct Seed Budgets for Northern Idaho:
Winter wheat, soft white spring wheat & dark northern spring (DNS) wheat
Spring barley, dry peas, lentils, canola, garbanzos, and various cover crops
Assuming a 2500-acre farm

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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. Numbers in red type can be changed without affecting the underlying equations in this cost calculator. Numbers in purple type cells are from the Summary sheet (click on yellow Summary tab). In the Summary sheet both crop price and yield are in red type, which means you are in the right place to make changes. Adjusting any of those numbers will automatically update calculations throughout the spreadsheet, which is very useful for sensitivity analyses. 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 and chemical prices are based on an annual survey of input suppliers. These prices are subject to change, however, and will affect the profitability of different crops. A list of the average prices from each year's survey can be found on our Extension website, www.IdahoAgBiz.com, under Crop Budgets.

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, as of January 2018, 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:

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

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 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:

www.IdahoAgBiz.com

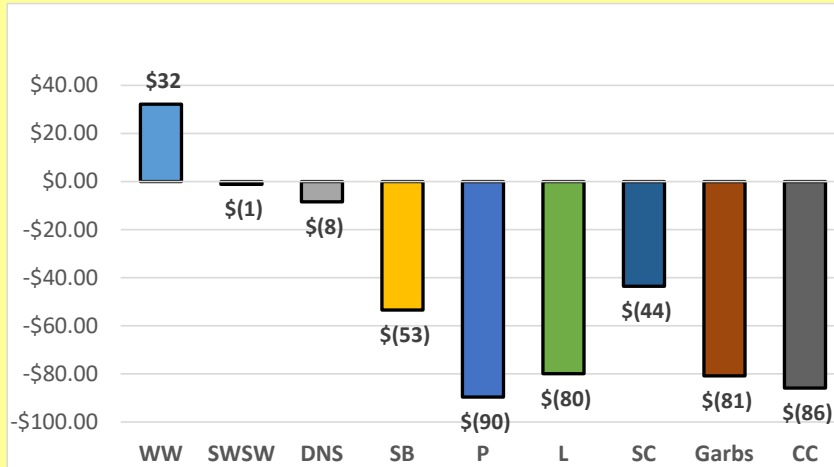
2019 Direct Seed Budgets for Northern Idaho

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

Note: You may adjust yield, price, and crop-share % information in orange type.
All land cost (crop-share) and other data will adjust automatically throughout.

2019										Crop & Cost	
By Crop:	Unit	Yield per acre	Farmgate Price Estimate per unit	Revenue per acre	Total Cost of Operation	Returns over TC (\$/acre)	Total Variable Costs	Returns over VC (\$/acre)	Share**		
									Operator:	Owner:	
Soft White Winter Wheat (SWW)	bu	90	\$5.50	\$495	\$463	\$32	\$251	\$244	\$130	67% Operator	33% Owner
Soft White Spring Wheat (SWSW)	bu	65	\$5.50	\$358	\$359	-\$1	\$202	\$156	\$82		
Dark Northern Spring Wheat (DNSW)	bu	60	\$6.00	\$360	\$368	-\$8	\$211	\$149	\$77		
Spring Barley (SB)	ton	1.8	\$125.00	\$225	\$278	-\$53	\$160	\$65	\$50		
Peas (P)	lb	2000	\$0.11	\$220	\$310	-\$90	\$5	\$215	\$15		
Lentils (L)	lb	1200	\$0.11	\$132	\$212	-\$80	\$0	\$132	\$7		
Spring Canola (SC)	lb	1800	\$0.16	\$288	\$332	-\$44	\$191	\$97	\$74		
Garbanzos (G)	lb	1400	\$0.18	\$252	\$333	-\$81	\$187	\$65	\$68		
Value blend cover crop mix	ac			\$0	\$86	-\$86	\$52	-\$52	\$0		
Soil builder cover crop mix	ac			\$0	\$97	-\$97	\$63	-\$63	\$0		
Grazing blend cover crop mix	ac			\$0	\$93	-\$93	\$59	-\$59	\$0		
Fall seeded N fixing cover crop mix	ac			\$0	\$100	-\$100	\$66	-\$66	\$0		
				Total Revenue per acre (\$/acre)	Total Cost of Operation (\$/acre)	Returns over TC (\$/acre)	Total Variable Costs (\$/acre)	Returns over VC (\$/acre)	Crop & Cost Share** (\$/acre)		
By Rotation:											
WW_SWSW_SC				\$380	\$384	-\$4	\$214	\$166	\$95		
WW_SWSW_P				\$358	\$377	-\$20	\$152	\$205	\$75		
WW_SWSW_L				\$328	\$344	-\$16	\$151	\$177	\$73		
WW_SWSW_G				\$368	\$385	-\$17	\$213	\$155	\$93		
WW_SWSW_CC				\$284	\$302	-\$18	\$168	\$116	\$71		
WW_DNSW_SC				\$381	\$388	-\$7	\$218	\$163	\$94		
WW_DNSW_P				\$358	\$380	-\$22	\$156	\$203	\$74		
WW_DNSW_L				\$329	\$348	-\$19	\$154	\$175	\$72		
WW_DNSW_G				\$369	\$388	-\$19	\$216	\$153	\$92		
WW_DNSW_CC				\$285	\$306	-\$21	\$171	\$114	\$69		
WW_SB_SC				\$336	\$358	-\$22	\$201	\$135	\$85		
WW_SB_P				\$313	\$350	-\$37	\$138	\$175	\$65		
WW_SB_L				\$284	\$318	-\$34	\$137	\$147	\$63		
WW_SB_G				\$324	\$358	-\$34	\$199	\$125	\$83		
WW_SB_CC				\$240	\$276	-\$36	\$154	\$86	\$60		

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



Farmgate

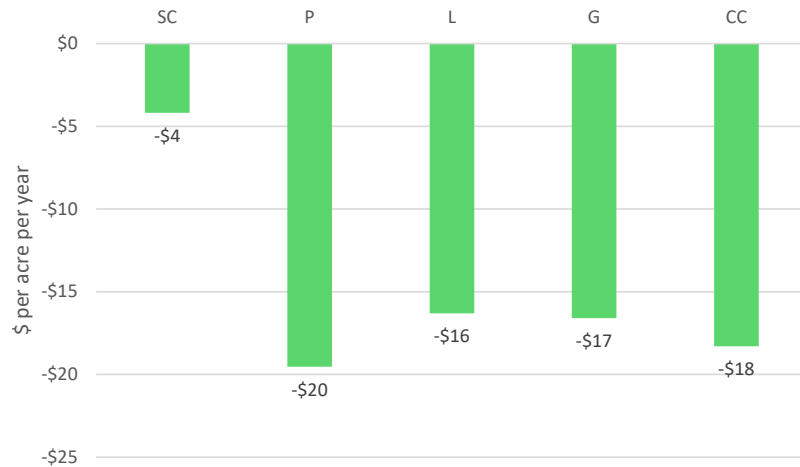
Crop Prices:

WW	\$5.50
SWSW	\$5.50
DNS	\$6.00
SB	\$125.00
P	\$0.11
L	\$0.11
SC	\$0.16
Garbs	\$0.18

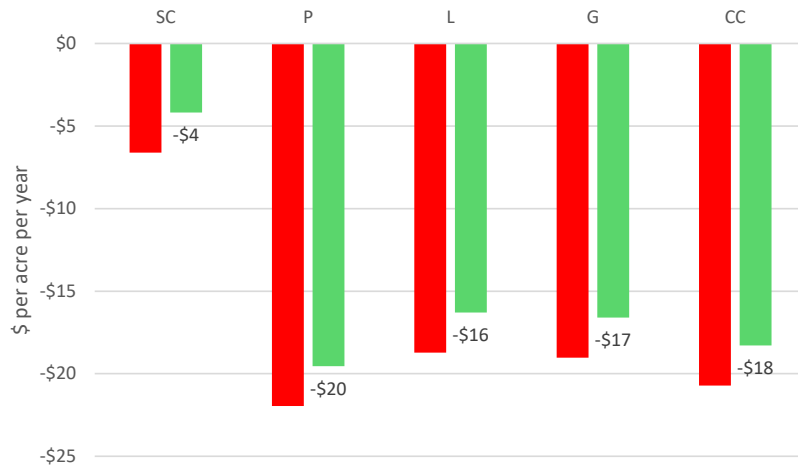
Legend:

WW = Soft White Winter Wheat
 SWSW = Soft White Spring Wheat
 DNS = Dark Northern Spring Wheat
 SB = Spring Barley
 P = Peas
 L = Lentils
 SC = Spring Canola
 G = Garbanzos
 CC = Cover Crop (Value Blend)

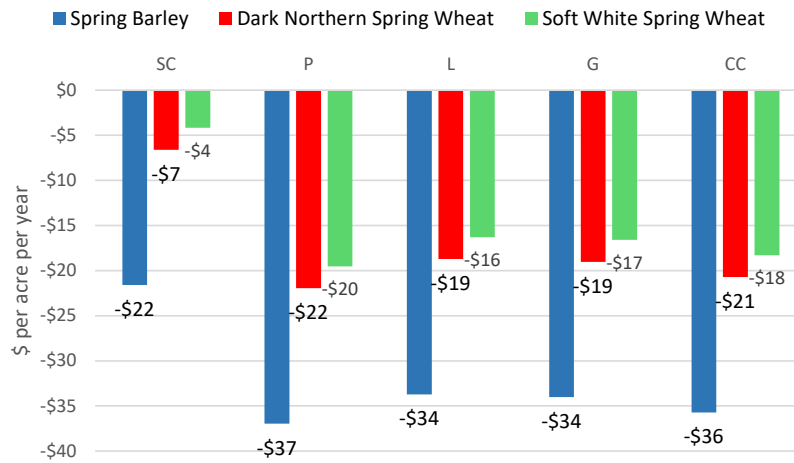
Net Returns over Total Costs by Rotation, WW/SWSW/Rotational Crop or Cover Crop



Net Returns over Total Costs by Rotation, WW/SWSW/Rotational Crop or Cover Crop



Net Returns over Total Costs by Rotation, WW/Spring Grain/Rotational Crop or Cover Crop



Prices		
<i>Note: Changing prices here will change them throughout the spreadsheet.</i>		
		2018
	Unit	Price/unit
Fuel:		
Diesel (gal)	gal	\$3.23
Gas (gal)	gal	\$3.19
Seed:		
Wheat Seed (lb)	lb	\$0.27
Barley Seed (lb)	lb	\$0.23
Dark Northern Spring Wheat	lb	\$0.30
Spring Pea Seed	lb	\$0.38
Lentil Seed	lb	\$0.41
Garbanzo Seed	lb	\$0.60
Canola Seed, Roundup Ready	lb	\$10.15
Fertilizer:		
Nitrogen	lb	\$0.46
Phosphorous	lb	\$0.43
Sulfur	lb	\$0.37
Potassium	lb	\$0.29
Adjuvants:		
Ammonium Sulfate (liquid)	oz	\$0.01
Ammonium Sulfate (20-0-0-24)	lb	\$0.58
Crop Oil Concentrate	pt	\$1.44
In-Place	oz	\$0.31
M90	oz	\$0.17
Surfactant	oz	\$0.24
Syltac Sticker	pt	\$6.25
Custom Rental:		
26' Rental Shredder	acre	\$10.00
36' Ripper Shooter	acre	\$2.50
90' Rental Sprayer	acre	\$2.00
Custom Aerial	acre	\$8.95
Fertilizer Applicator	acre	\$2.00
Pesticides:		
2,4-DB	oz	\$0.29
Achieve SC	oz	\$1.17

Prices		
Affinity BS	oz	\$10.67
Ally	oz	\$1.50
Assure II	oz	\$0.86
Axial Star	oz	\$1.15
Bronate	pt	\$6.88
Brox M	oz	\$0.37
Capture	oz	\$2.64
Dimethoate	pt	\$7.00
Discover	oz	\$1.47
FarGO	qt	\$16.66
Finesse	oz	\$17.34
Glyphosate	oz	\$0.13
Huskie	oz	\$0.96
Imidan 70	lb	\$15.04
Maverick	oz	\$20.77
Osprey	oz	\$4.39
Poast	pt	\$16.77
Power Flex	oz	\$7.75
Priaxor	oz	\$4.97
Prowl	oz	\$0.45
Pursuit	oz	\$3.53
Quadris	oz	\$0.98
Quilt	oz	\$1.29
R-11	oz	\$0.23
Starane	oz	\$0.67
Starane + Salvo	oz	\$0.67
Starane + Sword	oz	\$0.67
Tilt	oz	\$0.77
Wildcard	oz	\$0.31
Crop Insurance¹:		
Soft white winter wheat	acre	\$20.00
Soft white spring wheat	acre	\$16.00
Dark Northern spring wheat	acre	\$17.00
Spring peas	acre	\$22.00
Spring lentils	acre	\$22.00
Garbanzos	acre	\$22.00
Canola	acre	\$18.00
Labor:		
Hourly machine labor*	acre	\$20.00

Prices		
Cash Rent:		
Cash Rent	acre	\$0.00
Land Tax:		
Land Tax	acre	\$5.50
Overhead:		
	percent	5.00%
Interest:		
Operating Loan	percent	5.00%
Machinery Loan/investment	percent	5.75%

*Includes all applicable state and federal taxes.

¹Crop insurance estimates include multi-peril crop insurance covering 85% of production for most crops (with the exception of 75% for pulses) plus fire and hail insurance.

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

Item	Quantity Per Acre	Unit	Price or Cost/Unit	Value or Cost/Acre
<u>Gross Returns</u>				
Wheat	90	bu	\$5.50	\$495.00
<u>Variable Costs</u>				
Seed:				\$24.30
Wheat Seed	90.00	lb	\$0.27	\$24.30
Fertilizer:				\$64.70
Nitrogen (dry)	93.00	lb	\$0.46	\$42.78
Phosphorous (dry)	23.00	lb	\$0.43	\$9.89
Potassium	30.00	lb	\$0.29	\$8.70
Sulfur (dry)	9.00	lb	\$0.37	\$3.33
Pesticides:				\$44.08
Roundup	36.00	oz	\$0.13	\$4.68
Ammonium Sulfate	3.40	lb	\$0.58	\$1.97
M90	3.00	oz	\$0.17	\$0.51
Osprey	4.75	oz	\$4.39	\$20.85
Starane+Salvo	22.00	oz	\$0.67	\$14.74
R-11	3.20	oz	\$0.23	\$0.74
Brox M	1.60	oz	\$0.37	\$0.59
Fungicides:				\$21.19
Quilt	14	oz	\$1.29	\$18.06
Syltac Sticker	0.5	pt	\$6.25	\$3.13
Machinery:				\$38.68
Fuel	3.28	gal	\$3.23	\$10.60
Lubricants	1	acre	\$1.60	\$1.60
Machinery Repairs	1	acre	\$10.37	\$10.37
Machinery Labor	0.81	hour	\$20.00	\$16.12
Custom & Consultants:				\$8.95
Custom Aerial	1	acre	\$8.95	\$8.95
Other:				\$20.00
Crop insurance	1	acre	20.00	\$20.00
Storage Facility & Equip. Repairs.				\$0.00
Operating Interest ¹				\$7.53
Total Variable Costs				\$250.61
Variable Costs per Unit				\$2.78
Net Returns Above Variable Costs				\$244.39

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

Fixed Costs:

Machinery depreciation			\$18.95	\$18.95
Machinery interest			\$13.72	\$13.72
Machinery insurance, taxes, housing, licenses			\$7.05	\$7.05
Land Cost*	1	acre	\$129.90	\$129.90
*Based on Share Rent Percentage:				
Landlord			33.00%	
Tenant			67.00%	
Overhead ²				\$11.10
Cash rent				\$0.00
Management fee ³				\$26.00
Land taxes				\$5.50
Total Fixed Costs				\$212.21
Fixed Costs per Unit				\$2.36
Total Costs per Acre				\$462.82
Total Cost per Unit				\$5.14
Returns to Risk				\$32.18

Notes:

¹Calculated at 6.75% interest on operating capital for 9 months.

²Covers legal, accounting, and utility fees. Calculated as 5% of operating expenses.

Details on variable and fixed machinery costs, including fuel, repairs, and machine labor, are located in the

³The management fee is calculated as a 5% of gross revenue.

[Winter Wheat Machinery Costs table.](#)

Breakeven Analysis:

	- 10%	Base	+ 10%
		Yield	
<u>Price</u>	81.00	90	99.00
Operating Cost Breakeven	\$3.09	\$2.78	\$2.53
Ownership Cost Breakeven	\$2.62	\$2.36	\$2.14
Total Cost Breakeven	\$5.71	\$5.14	\$4.67
		Price	
<u>Yield</u>	\$4.95	\$5.50	\$6.05
Operating Cost Breakeven	50.6	45.6	41.4
Ownership Cost Breakeven	42.9	38.6	35.1
Total Cost Breakeven	93.5	84.1	76.5

Schedule of Operations for Direct Seeded Winter Wheat, Northern Idaho

Month	Operation	Tooling	Materials/Service
September	Spray Weeds	200HP-WT, 100' Sprayer	18 oz Roundup, 1.5 oz M90 1.7 lbs AMS
September	Drill	450HP-WT, 36' Direct Seed Drill, Fertilizer Tanks & Pumps	90 lb seed, 110 lb N, 5 lb P, 15 lb S
April	Crop Insurance		
April	Spray Weeds	200HP-WT, 100' Sprayer	4.75 oz Osprey, 22 oz Starane+Salvo, 3.2 oz R-11, 1.6 oz Brox M
June	Aerial Spray	Airplane	Custom Aerial, 14 oz Quilt, .5 pt Syltac Sticker
August	Harvest	36' Combine	

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 Wheat	65	bu	\$5.50	\$357.50
Variable Costs				
Seed:				\$27.00
Soft White Wheat Seed	100	lb	\$0.27	\$27.00
Fertilizer:				\$55.55
Nitrogen (dry)	100	lb	\$0.46	\$46.00
Phosphorous (dry)	5	lb	\$0.43	\$2.15
Potassium (dry)	0	lb	\$0.29	\$0.00
Sulfur (dry)	20	lb	\$0.37	\$7.40
Pesticides:				\$27.98
Roundup	36	oz	\$0.13	\$4.68
M90	3	oz	\$0.17	\$0.51
Ammonium Sulfate	3.4	lb	\$0.58	\$1.97
Axial	8.2	oz	\$1.15	\$9.43
Brox M	12	oz	\$0.37	\$4.44
Starane	8	oz	\$0.67	\$5.36
InPlace	5	oz	\$0.31	\$1.55
Ammonium Sulfate	3.2	oz	\$0.01	\$0.04
Fungicides:				\$21.19
Quilt	14	oz	\$1.29	\$18.06
Sylltac Sticker	0.5	pt	\$6.25	\$3.13
Machinery:				\$39.96
Fuel	3.39	gal	\$3.23	\$10.94
Lubricants	1	acre	\$1.65	\$1.65
Machinery Repairs	1	acre	\$10.83	\$10.83
Machinery Labor	0.83	hour	\$20.00	\$16.55
Other Labor				\$0.00
Custom & Consultants:				\$8.95
Rental Sprayer	0	acre	\$2.00	\$0.00
Custom Aerial	1	acre	\$8.95	\$8.95
Other:				\$16.00
Crop insurance	1	acre	\$16.00	\$16.00
Storage Facility & Equip. Repairs				\$0.00
Operating Interest ¹				\$4.92
Total Variable Costs				\$201.54
Variable Costs per Unit				\$3.10
Net Returns Above Variable Costs				\$155.96
Fixed Costs:				
Machinery depreciation			\$19.56	\$19.56
Machinery interest			\$14.23	\$14.23
Machinery insurance, taxes, housing, licenses			\$7.13	\$7.13
Land Cost*	1	acre	\$81.87	\$81.87
*Based on Share Rent Percentage:				
Landlord	33.00%			
Tenant	67.00%			
Overhead ²				\$9.83
Management fee ³				\$19.00

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

Cash rent	\$0.00
Land taxes	\$5.50
Total Fixed Costs	\$157.12
Fixed Costs per Unit	\$2.42
Total Costs per Acre	\$358.66
Total Cost per Unit	\$5.52
Returns to Risk	-\$1.16

Notes:

¹Calculated at 6.75% interest on operating capital for 6 months.

²Covers legal, accounting, and utility fees. Calculated as 5% of operating expenses.

Details on variable and fixed machinery costs, including fuel, repairs, and machine labor, are located in the

³The management fee is calculated as a 5% of gross revenue.

[Soft White Spring Wheat Machinery Costs table.](#)

Breakeven Analysis:

	- 10%	Base	+ 10%
		Yield	
<u>Price</u>	58.50	65	71.50
Operating Cost Breakeven	\$3.45	\$3.10	\$2.82
Ownership Cost Breakeven	\$2.69	\$2.42	\$2.20
Total Cost Breakeven	\$6.13	\$5.52	\$5.02
		Price	
<u>Yield</u>	\$4.95	\$5.50	\$6.05
Operating Cost Breakeven	40.7	36.6	33.3
Ownership Cost Breakeven	31.7	28.6	26.0
Total Cost Breakeven	72.5	65.2	59.3

Schedule of Operations for Direct Seeded Soft White Spring Wheat, Northern Idaho

Month	Operation	Tooling	Materials/Service
March	Spray Weeds	200HP-WT, 100' Sprayer	18 oz Roundup, 1.5 oz M90 1.7 lbs Ammonium Sulfate
April	Drill	450HP-WT, 36' Direct Seed Drill, Fertilizer Tanks & Pumps	100 lb seed, 100 lb N, 5 lb P, 20 lb S
May	Crop Insurance		
May	Spray Weeds	200HP-WT, 100' Sprayer	8.2 oz Axial, 8 oz Starane, 12 oz Brox M, 5 oz InPlace, 3.2 oz Ammonium Sulfate
June	Aerial Spray	Airplane	Custom Aerial, 14 oz Quilt, .5 pt Syltac Sticker
August	Harvest	36' Combine	
September	Spray Weeds	200HP-WT, 100' Sprayer	18 oz Roundup, 1.5 oz M90 1.7 lbs Ammonium Sulfate

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

Purple: Data are from Summary page (purple tab).

Orange Type: You may adjust data in orange type. All other data will adjust automatically to

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

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

Production Costs for Direct Seeded Dark Northern Spring Wheat, Northern Idaho

Item	Quantity Per Acre	Unit	Price or Cost/Unit	Value or Cost/Acre
Gross Returns				
Dark Northern Spring Wheat	60	bu	\$6.00	\$360.00
Variable Costs				
Seed:				
Dark Northern Wheat Seed	100	lb	\$0.30	\$30.00
Fertilizer:				
Nitrogen (dry)	130	lb	\$0.46	\$59.80
Phosphorous (dry)	5	lb	\$0.43	\$2.15
Potassium (dry)	0	lb	\$0.29	\$0.00
Sulfur (dry)	25	lb	\$0.37	\$9.25
Pesticides:				
Roundup	36	oz	\$0.13	\$4.68
M90	3	oz	\$0.17	\$0.51
Ammonium Sulfate	1.7	lb	\$0.58	\$0.99
Axial	8.2	oz	\$1.15	\$9.43
Brox M	12	oz	\$0.37	\$4.44
Starane	8	oz	\$0.67	\$5.36
InPlace	5	oz	\$0.31	\$1.55
Ammonium Sulfate	3.2	oz	\$0.01	\$0.04
Fungicides:				
Quilt	14	oz	\$1.29	\$18.06
Syltac Sticker	0.5	pt	\$6.25	\$3.13
Machinery:				
Fuel	3.39	gal	\$3.23	\$10.94
Lubricants	1	acre	\$1.65	\$1.65
Machinery Repairs	1	acre	\$10.83	\$10.83
Machinery Labor	0.83	hour	\$20.00	\$16.55
Custom & Consultants:				
Rental Sprayer Applicator	0	acre	\$2.00	\$0.00
Custom Aerial	0	acre	\$8.95	\$0.00
Other:				
Crop insurance	1	acre	\$17.00	\$17.00
Storage Facility & Equip. Repairs				\$0.00
Operating Interest ¹				\$5.16
Total Variable Costs				\$211.50
Variable Costs per Unit				\$3.52
Net Returns Above Variable Costs				\$148.50

Production Costs for Direct Seeded Dark Northern Spring Wheat, Northern Idaho

Fixed Costs:

Machinery depreciation				\$19.56	\$19.56
Machinery interest				\$14.23	\$14.23
Machinery insurance, taxes, housing, licenses				\$7.13	\$7.13
Land Cost*	1	acre		\$77.20	\$77.20
*Based on Share Rent Percentage:					
Landlord				33.00%	
Tenant				67.00%	
Overhead ²					\$10.32
Management fee ³					\$23.00
Cash rent					\$0.00
Land taxes					\$5.50
Total Fixed Costs					\$156.94
Fixed Costs per Unit					\$2.62
Total Costs per Acre					\$368.44
Total Cost per Unit					\$6.14
Returns to Risk					-\$8.44

Notes:

¹Calculated at 6.75% interest on operating capital for 6 months.

²Covers legal, accounting, and utility fees. Calculated as 5% of operating expenses.

Details on variable and fixed machinery costs, including fuel, repairs, and machine labor, are located in the

³The management fee is calculated as a 5% of gross revenue.

[Hard Red Spring Wheat Machinery Costs table.](#)

Breakeven Analysis:

	- 10%	Base	+ 10%
		Yield	
<u>Price</u>	54.00	60	66.00
Operating Cost Breakeven	\$3.92	\$3.52	\$3.20
Ownership Cost Breakeven	\$2.91	\$2.62	\$2.38
Total Cost Breakeven	\$6.82	\$6.14	\$5.58
		Price	
<u>Yield</u>	5.40	6.00	6.60
Operating Cost Breakeven	39.2	35.2	32.0
Ownership Cost Breakeven	29.1	26.2	23.8
Total Cost Breakeven	68.2	61.4	55.8

Schedule of Operations for Direct Seeded Dark Northern Spring Wheat, Northern Idaho

Month	Operation	Tooling	Materials/Service
March	Spray Weeds	200HP-WT, 100' Sprayer	18 oz Roundup, 1.5 oz M90 1.7 lbs Ammonium Sulfate
April	Drill	450HP-WT, 36' Direct Seed Drill, Fertilizer Tanks & Pumps	100 lb seed, 130 lb N, 5 lb P, 25 lb S
May	Crop Insurance		
May	Spray Weeds	200HP-WT, 100' Sprayer	8.2 oz Axial, 8 oz Starane, 12 oz Brox M, 5 oz InPlace, 3.2 oz Ammonium Sulfate
June	Aerial Spray	Airplane	Custom Aerial, 14 oz Quilt, .5 pt Syltac Sticker
August	Harvest	36' Combine	
September	Spray Weeds	200HP-WT, 100' Sprayer	18 oz Roundup, 1.5 oz M90 1.7 lbs Ammonium Sulfate

Production Costs for Direct Seeded Spring Barley, Northern Idaho

Item	Quantity Per Acre	Unit	Price or Cost/Unit	Value or Cost/Acre
Gross Returns				
Barley	1.80	ton	\$125.00	\$225.00
Variable Costs				
Seed:				\$18.40
Barley Seed	80	lb	\$0.23	\$18.40
Fertilizer:				\$44.50
Nitrogen (dry)	80	lb	\$0.46	\$36.80
Phosphorous (dry)	5	lb	\$0.43	\$2.15
Sulfur (dry)	15	lb	\$0.37	\$5.55
				\$0.00
Pesticides:				\$31.02
Roundup	36	oz	\$0.13	\$4.68
Ammonium Sulfate	6.25	pt	\$0.01	\$0.07
M90	4.5	oz	\$0.17	\$0.77
Achieve SC	9.2	oz	\$1.17	\$10.76
Starane+Sword	22	oz	\$0.67	\$14.74
				\$0.00
Machinery:				\$39.96
Fuel	3.39	gal	\$3.23	\$10.94
Lubricants	1	acre	\$1.65	\$1.65
Machinery Repairs	1	acre	\$10.83	\$10.83
Machinery Labor	0.83	hour	\$20.00	\$16.55
				\$0.00
Custom & Consultants:				\$0.00
Rental Sprayer	0	acre	\$2.00	\$0.00
				\$0.00
Other:				\$22.00
Crop insurance	1	acre	\$22.00	\$22.00
Storage Facility & Equip. Repairs				\$0.00
				\$0.00
Operating Interest ¹				\$3.90
Total Variable Costs				\$159.78
Variable Costs per Unit				\$88.77
Net Returns Above Variable Costs				
\$65.22				
Fixed Costs:				
Machinery depreciation			\$19.56	\$19.56
Machinery interest			\$14.23	\$14.23
Machinery insurance, taxes, housing, licenses			\$7.13	\$7.13
Land Cost*	1	acre	\$50.44	\$50.44
*Based on Share Rent Percentage:				
Landlord	33.00%			
Tenant	67.00%			

Production Costs for Direct Seeded Spring Barley, Northern Idaho

Overhead ²	\$7.79
Management fee ³	\$14.00
Cash rent	\$0.00
Land taxes	\$5.50
Total Fixed Costs	\$118.65
Fixed Costs per Unit	\$65.91
Total Costs per Acre	\$278.43
Total Cost per Unit	\$154.68
Returns to Risk	-\$53.43

Notes:

¹Calculated at 6.75% interest on operating capital for 6 months.

²Covers legal, accounting, and utility fees. Calculated as 5% of operating expenses.

Details on variable and fixed machinery costs, including fuel, repairs, and machine labor, are located in the

³The management fee is calculated as a 5% of gross revenue.

[Spring Barley Machinery Costs table.](#)

Breakeven Analysis:

	- 10%	Base	+ 10%
		Yield	
Price	1.80	2	2.20
Operating Cost Breakeven	\$92.61	\$83.35	\$79.38
Ownership Cost Breakeven	\$79.01	\$71.11	\$67.72
Total Cost Breakeven	\$171.61	\$154.45	\$147.10
		Price	
Yield	\$202.50	\$225.00	\$247.50
Operating Cost Breakeven	0.8	0.7	0.7
Ownership Cost Breakeven	0.7	0.6	0.6
Total Cost Breakeven	1.5	1.4	1.2

Schedule of Operations for Direct Seeded Spring Barley, Northern Idaho

Month	Operation	Tooling	Materials/Service
April	Spray Weeds	200HP-WT, 100' Sprayer	18 oz Roundup, 1.5 oz M90 1.7 lbs Ammonium Sulfate
April	Drill	450HP-WT, 36' Direct Seed Drill, Fertilizer Tanks & Pumps	80 lb Seed, 60 lb N, 12 lb P, 15 lb S
May	Crop Insurance		
May	Spray Weeds	200HP-WT, 100' Sprayer	9.2 oz Achieve SC, 22 oz Starane+ Sword, 1.5 oz M90
August	Harvest	36' Combine	

Production Costs for Direct Seeded Spring Peas, Annual Cropping Region

Item	Quantity Per Acre	Unit	Price or Cost/Unit	Value or Cost/Acre
Gross Returns				
Peas	2000	lb	\$0.11	\$220.00
Variable Costs				
Seed:				\$76.00
Pea Seed	200	lb	\$0.38	\$76.00
Fertilizer:				\$0.00
<i>Base your rate on your soil test results.</i>				
<i>A typical recommendation might include the following:</i>				
Pesticides:				\$44.21
<i>Rates & chemicals will depend on the pests in your crop.</i>				
<i>Consult a certified pesticide applicator or the PNW Pest Control Management Guides.</i>				
<i>The following cost estimates are typical:</i>				
Roundup	36	oz	\$0.13	\$4.68
Pursuit	3	oz	\$3.53	\$10.59
Prowl	24	oz	\$0.45	\$10.80
Ammonium Sulfate	6.25	pt	\$0.01	\$0.07
Surfactant	3.0	oz	\$0.24	\$0.72
Imidan 70	1.0	lb	\$15.04	\$15.04
Dimethoate	0.33	pt	\$7.00	\$2.31
Machinery:				\$40.51
Fuel	3.45	gal	\$3.23	\$11.14
Lubricants	1	acre	\$1.68	\$1.68
Machinery Repairs	1	acre	\$11.09	\$11.09
Machinery Labor	0.83	hour	\$20.00	\$16.60
Custom & Consultants:				\$8.95
Rental Sprayer	0	acre	\$2.00	\$0.00
Custom Aerial Spray	1	acre	\$8.95	\$8.95
				\$0.00
Other:				\$18.00
Crop insurance	1	acre	\$18.00	\$18.00
Storage Facility & Equip. Repairs				\$0.00
Other Labor				
Operating Interest ¹				\$4.69
Total Variable Costs				\$192.37
Variable Costs per Unit				\$0.10
Net Returns Above Variable Costs				\$27.63
Ownership Costs:				
Depreciation		acre	20.66	\$20.66
Interest		acre	14.70	\$14.70
Taxes, insurance, housing, licenses		acre	7.49	\$7.49
Land Cost*		acre	\$51.00	\$51.00

*Based on Share Rent Percentage:

Landlord	25.00%
Tenant	75.00%

Overhead ²	\$9.00
Management fee ³	\$14.40
Total Fixed Costs	\$117.26
Fixed Costs per Unit	\$0.06
Total Costs per Acre	\$309.63
Total Cost per Unit	\$0.15
Returns to Risk	-\$89.63

Notes:

¹Calculated as 5.75% interest on operating capital for 6 months.

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

³The management fee is calculated as a 5% of gross revenue.

Breakeven Analysis:

	-	Base	+
	10%	Yield	10%
<u>Price</u>	1800	2000	2200
Operating Cost Breakeven	\$0.11	\$0.10	\$0.09
Ownership Cost Breakeven	\$0.07	\$0.06	\$0.05
Total Cost Breakeven	\$0.17	\$0.15	\$0.14

	10%	Base	10%
<u>Yield</u>	\$0.10	Price	\$0.12
Operating Cost Breakeven	1943.1	1748.8	1589.8
Ownership Cost Breakeven	1184.4	1066.0	969.1
Total Cost Breakeven	3127.5	2814.8	2558.9

Schedule of Operations for Direct Seeded Spring Peas, Northern Idaho

Month	Operation	Tooling	Materials/Service
April	Spray Weeds	200HP-WT, 100' Sprayer	18 oz Roundup, 3 oz Pursuit, 24 oz Prowl, 50 oz Ammonium Sulfate, 1.5 oz M90
April	Drill	450HP-WT, 36' Direct Seed Drill, Fertilizer Tanks & Pumps	200 lb Seed
May	Crop Insurance		
June	Aerial Spray	Custom	Custom Aerial, 1 lb Imidan 70, 0.33 pt Dimethoate
August	Harvest	36' Combine	
September	Spray Weeds	200HP-WT, 100' Sprayer	18 oz Roundup, 1.5 oz M90, 50 oz Ammonium Sulfate

Production Costs for Spring Lentils, Annual Cropping Region

Item	Quantity Per Acre	Unit	Price or Cost/Unit	Value or Cost/Acre
Gross Returns				
Lentils	1800	lb	\$0.16	\$288.00
Variable Costs				
Seed:				\$14.40
Lentils	45	lb	\$0.32	\$14.40
Fertilizer:				\$0.00
<i>Base your rate on your soil test results.</i>				
<i>A typical recommendation might include the following:</i>				
Pesticides:				\$29.17
<i>Rates & chemicals will depend on the pests in your crop.</i>				
<i>Consult a certified pesticide applicator or the PNW Pest Control Management Guides.</i>				
<i>The following cost estimates are typical:</i>				
Roundup	36	oz	\$0.13	\$4.68
Pursuit	3	oz	\$3.53	\$10.59
Prowl	24	oz	\$0.45	\$10.80
Ammonium Sulfate	6.25	pt	\$0.01	\$0.07
Surfactant	3.0	oz	\$0.24	\$0.72
Dimethoate	0.33	pt	\$7.00	\$2.31
Machinery:				\$27.33
Fuel	2.18	gal	\$3.23	\$7.04
Lubricants	1	acre	\$1.07	\$1.07
Machinery Repairs	1	acre	\$6.79	\$6.79
Machinery Labor	0.62	hour	\$20.00	\$12.43
Custom & Consultants:				\$8.95
Rental Sprayer	0	acre	\$2.00	\$0.00
Custom Aerial Spray	1	acre	\$8.95	\$8.95
				\$0.00
Other:				\$18.00
Crop insurance	1	acre	\$18.00	\$18.00
Storage Facility & Equip. Repairs				\$0.00
Other Labor				
Operating Interest ¹				\$2.45
Total Variable Costs				\$100.29
Variable Costs per Unit				\$0.06
Net Returns Above Variable Costs				\$187.71
Ownership Costs:				
Depreciation		acre	10.65	\$10.65
Interest		acre	8.53	\$8.53
Taxes, insurance, housing, licenses		acre	5.03	\$5.03
Land Cost*		acre	\$68.00	\$68.00

*Based on Share Rent Percentage:

Landlord	25.00%	
Tenant	75.00%	
Overhead ²		\$5.00
Management fee ³		\$14.40
Total Fixed Costs		\$111.62
Fixed Costs per Unit		\$0.06
Total Costs per Acre		\$211.91
Total Cost per Unit		\$0.12
Returns to Risk		\$76.09

Notes:

¹Calculated as 5.75% interest on operating capital for 6 months.

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

³The management fee is calculated as a 5% of gross revenue.

Breakeven Analysis:			
	-	Base	+
	10%	Yield	10%
<u>Price</u>	1620	1800	1980
Operating Cost Breakeven	\$0.06	\$0.06	\$0.05
Ownership Cost Breakeven	\$0.07	\$0.06	\$0.06
Total Cost Breakeven	\$0.13	\$0.12	\$0.11
	10%	Base	10%
<u>Yield</u>	\$0.14	Price	\$0.18
Operating Cost Breakeven	696.5	626.8	569.8
Ownership Cost Breakeven	775.1	697.6	634.2
Total Cost Breakeven	1471.6	1324.4	1204.0

Schedule of Operations for Direct Seeded Spring Lentils, Northern Idaho

Month	Operation	Tooling	Materials/Service
April	Spray Weeds	200HP-WT, 100' Sprayer	18 oz Roundup, 3 oz Pursuit, 24 oz Prowl, 50 oz Ammonium Sulfate, 1.5 oz M90
April	Drill	450HP-WT, 36' Direct Seed Drill, Fertilizer Tanks & Pumps	45 lb Seed
May	Crop Insurance		
June	Aerial Spray	Custom	Custom Aerial, 1 pt Dimethoate
August	Harvest	36' Combine	
September	Spray Weeds	200HP-WT, 100' Sprayer	18 oz Roundup, 1.5 oz M90, 50 oz Ammonium Sulfate

Production Costs for Roundup Ready Spring Canola, Annual Cropping Region

Item	Quantity Per Acre	Unit	Price or Cost/Unit	Value or Cost/Acre
Gross Returns				
Canola	1800	lb	\$0.16	\$288.00
Variable Costs				
Seed:				\$50.75
Canola Seed, Roundup Ready	5	lb	\$10.15	\$50.75
Fertilizer:				\$46.53
<i>Base your rate on your soil test results.</i>				
<i>A typical recommendation might include the following:</i>				
Nitrogen	80	lb	\$0.46	\$36.80
Phosphorous	8	lb	\$0.43	\$3.44
Sulfur	17	lb	\$0.37	\$6.29
Pesticides:				\$21.88
<i>Rates & chemicals will depend on the pests in your crop.</i>				
<i>Consult a certified pesticide applicator or the PNW Pest Control Management Guides.</i>				
<i>The following cost estimates are typical:</i>				
Roundup	58	oz	\$0.13	\$7.54
Ammonium Sulfate	150	oz	\$0.0007	\$0.11
Surfactant	4.5	oz	\$0.23	\$1.04
Capture	5	oz	\$2.64	\$13.20
Machinery:				\$40.51
Fuel	3.45	gal	\$3.23	\$11.14
Lubricants	1	acre	\$1.68	\$1.68
Machinery Repairs	1	acre	\$11.09	\$11.09
Machinery Labor	0.83	hour	\$20.00	\$16.60
Custom & Consultants:				\$8.95
Rental Sprayer	0	acre	\$2.00	\$0.00
Custom Aerial Spray	1	acre	\$8.95	\$8.95
Other:				\$18.00
Crop insurance	1	acre	\$18.00	\$18.00
Storage Facility & Equip. Repairs				\$0.00
Other Labor				\$0.00
Operating Interest ¹				\$4.67
Total Variable Costs				\$191.29
Variable Costs per Unit				\$0.11
Net Returns Above Variable Costs				\$96.71
Ownership Costs:				
Depreciation		acre	20.66	\$20.66
Interest		acre	14.70	\$14.70
Taxes, insurance, housing, licenses		acre	7.49	\$7.49
Land Cost*		acre	\$74.00	\$74.00
<i>*Based on Share Rent Percentage:</i>				
Landlord	33.00%			
Tenant	67.00%			

Overhead ²	\$9.00
Management fee ³	\$14.40
Total Fixed Costs	\$140.26
Fixed Costs per Unit	\$0.08
Total Costs per Acre	\$331.55
Total Cost per Unit	\$0.18
Returns to Risk	-\$43.55

Notes:

¹Calculated as 5.75% interest on operating capital for 6 months.

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

³The management fee is calculated as a 5% of gross revenue.

Breakeven Analysis:

	-	Base	+
	10%	Yield	10%
<u>Price</u>	1620	1800	1980
Operating Cost Breakeven	\$0.12	\$0.11	\$0.10
Ownership Cost Breakeven	\$0.09	\$0.08	\$0.07
Total Cost Breakeven	\$0.20	\$0.18	\$0.17
	10%	Base	10%
<u>Yield</u>	\$0.14	Price	\$0.18
Operating Cost Breakeven	1328.4	1195.6	1086.9
Ownership Cost Breakeven	974.0	876.6	796.9
Total Cost Breakeven	2302.4	2072.2	1883.8

Schedule of Operations for Direct Seeded Spring Canola, Northern Idaho

Month	Operation	Tooling	Materials/Service
April	Spray Weeds	200HP-WT, 100' Sprayer	24 oz Roundup, 1.5 oz M90 1.7 lbs Ammonium Sulfate
April	Drill	450HP-WT, 36' Direct Seed Drill, Fertilizer Tanks & Pumps	5 lb seed, 80 lb N, 8 lb P, 17 lb S
May	Crop Insurance		
May	Spray Weeds	200HP-WT, 100' Sprayer	16 oz Roundup, 1.5 oz M90, 1.7 lbs Ammonium Sulfate
June	Aerial Spray	Custom aerial	Capture, 5 oz per acre
August	Harvest	36' Combine	
September	Spray Weeds	200HP-WT, 100' Sprayer	18 oz Roundup, 1.5 oz M90 1.7 lbs Ammonium Sulfate

Production Costs for Direct Seeded Garbanzos, Northern Idaho

Item	Quantity Per Acre	Unit	Price or Cost/Unit	Value or Cost/Acre
Gross Returns				
Garbanzos	1400	lb	\$0.18	\$252.00
Variable Costs				
Seed:				\$78.00
Garbanzo Seed	130	lb	\$0.60	\$78.00
Fertilizer:				\$0.00
				\$0.00
Pesticides:				\$26.65
Roundup	36	oz	\$0.13	\$4.68
Pursuit	3	oz	\$3.53	\$10.59
Prowl	24	oz	\$0.45	\$10.80
Ammonium Sulfate	6.25	pt	\$0.01	\$0.07
M90	3	oz	\$0.17	\$0.51
				\$0.00
Fungicide:				\$7.84
Quadris	8	oz	\$0.98	\$7.84
				\$0.00
Machinery:				\$38.68
Fuel	3.28	gal	\$3.23	\$10.60
Lubricants	1	acre	\$1.60	\$1.60
Machinery Repairs	1	acre	\$10.37	\$10.37
Machinery Labor	0.81	hour	\$20.00	\$16.12
				\$0.00
Custom & Consultants:				\$8.95
Rental Sprayer	0	acre	\$2.00	\$0.00
Custom Aerial Spray	1	acre	\$8.95	\$8.95
				\$0.00
Other:				\$22.00
Crop insurance	1	acre	\$22.00	\$22.00
Storage Facility & Equip. Repairs				\$0.00
				\$0.00
Operating Interest ¹				\$4.55
Total Variable Costs				\$186.68
Variable Costs per Unit				\$0.13
Net Returns Above Variable Costs				\$65.32
Fixed Costs:				
Machinery depreciation			\$18.95	\$18.95
Machinery interest			\$13.72	\$13.72
Machinery insurance, taxes, housing, licenses			\$7.05	\$7.05
Land Cost*	1	acre	\$67.81	\$67.81
*Based on Share Rent Percentage:				

Production Costs for Direct Seeded Garbanzos, Northern Idaho

Landlord	33.00%	
Tenant	67.00%	
Overhead ²		\$9.11
Management fee ³		\$24.00
Cash rent		\$0.00
Land taxes		\$5.50
Total Fixed Costs		\$146.14
Fixed Costs per Unit		\$0.10
Total Costs per Acre		\$332.81
Total Cost per Unit		\$0.24
Returns to Risk		-\$80.81

Notes:

¹Calculated at 6.75% interest on operating capital for 6 months.

²Covers legal, accounting, and utility fees. Calculated as 5% of operating expenses.

Details on variable and fixed machinery costs, including fuel, repairs, and machine labor, are located in the

³The management fee is calculated as a 5% of gross revenue.

[Garbanzos Machinery Costs table.](#)

Breakeven Analysis:

	- 10%	Base	+ 10%
		Yield	
<u>Price</u>	1260	1400	1540
Operating Cost Breakeven	\$0.15	\$0.13	\$0.12
Ownership Cost Breakeven	\$0.12	\$0.10	\$0.09
Total Cost Breakeven	\$0.26	\$0.24	\$0.22
		Price	
<u>Yield</u>	\$0.16	\$0.18	\$0.20
Operating Cost Breakeven	1152.3	1037.1	942.8
Ownership Cost Breakeven	902.1	811.9	738.1
Total Cost Breakeven	2054.4	1849.0	1680.9

Schedule of Operations for Direct Seeded Garbanzos, Northern Idaho

Month	Operation	Tooling	Materials/Service
March	Spray Weeds	200HP-WT, 100' Sprayer	18 oz Roundup, 3 oz Pursuit, 24 oz Prowl, 50 oz Ammonium Sulfate, 1.5 oz M90
April	Drill	450HP-WT, 36' Direct Seed Drill, Fertilizer Tanks & Pumps	130 lb Seed
May	Crop Insurance		
June	Aerial Spray	Custom	Custom Aerial, 8 oz Quadris Fungicide
August	Harvest	36' Combine	
September	Spray Weeds	200HP-WT, 100' Sprayer	18 oz Roundup, 1.5 oz M90, 50 oz Ammonium Sulfate

Production Costs for Direct Seeded Cover Crops, Northern Idaho

Item	Quantity Per Acre	Unit	Price or Cost/Unit	Value or Cost/Acre
Variable Costs				
Cover Crop Seed:				\$11.84
Smart Value Blend, 12 lb seed/ac**	1	lb	\$11.84	\$11.84
Fertilizer:				\$0.00
<i>Base your rate on your soil test results. A typical recommendation might include the following:</i>				
Nitrogen	0	lb	\$0.46	\$0.00
Phosphorous	0	lb	\$0.43	\$0.00
Sulfur	0	lb	\$0.37	\$0.00
Pesticides:				\$11.55
<i>Rates & chemicals will depend on the pests in your crop. Consult a certified pesticide applicator or the PNW Pest Control Management Guides. The following cost estimates are typical:</i>				
Roundup	24	oz	\$0.13	\$3.12
Surfactant	6.4	oz	\$0.23	\$1.47
2-4,D	24	oz	\$0.29	\$6.96
Machinery:				\$27.25
Fuel	2.20	gal	\$3.23	\$7.10
Lubricants	1	acre	\$1.08	\$1.08
Machinery Repairs	1	acre	\$6.56	\$6.56
Machinery Labor	0.63	hour	\$20.00	\$12.51
Custom & Consultants:				\$0.00
Rental Sprayer	0	acre	\$2.00	\$0.00
Rental Ripper Shooter	0	acre	\$2.50	\$0.00
Other:				\$0.00
Crop insurance	1	acre	\$0.00	\$0.00
Storage Facility & Equip. Repairs				\$0.00
Other Labor				
Operating Interest ¹				\$1.27
Total Variable Costs				\$51.90
Ownership Costs:				
Machinery depreciation		acre	\$10.52	\$10.52
Machinery interest on investment		acre	\$8.43	\$8.43
Machinery taxes, insurance, housing, licenses		acre	\$5.02	\$5.02
Land Cost*		acre		\$0.00
*Based on Share Rent Percentage:				
Landlord	33.00%			
Tenant	67.00%			
Overhead ²				\$3.00
Management fee ³				\$7.00
Total Fixed Costs				\$33.98
Total Costs per Acre				\$85.88
Returns to Risk				-\$85.88

Notes:

¹Calculated as 5.75% interest on operating capital for 6 months.

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

³The management fee is calculated as a 5% of gross revenue.

**Smart value cover crop blend consists of 1 lb purple top turnips, 2 lb spring triticale, 2 lb buckwheat cereal grain, 2 lb forage peas (Journey), 2 lb Otana oats, 2 lb annual ryegrass (Gulf), and 1 lb of white Proso millet.

Production Costs for Direct Seeded Cover Crops, Northern Idaho

Item	Quantity Per Acre	Unit	Price or Cost/Unit	Value or Cost/Acre
Variable Costs				
Cover Crop Seed:				\$23.15
Soil Builder Blend, 25 lb seed/ac**	1	lb	\$23.15	\$23.15
Fertilizer:				\$0.00
<i>Base your rate on your soil test results. A typical recommendation might include the following:</i>				
Nitrogen	0	lb	\$0.46	\$0.00
Phosphorous	0	lb	\$0.43	\$0.00
Sulfur	0	lb	\$0.37	\$0.00
Pesticides:				\$11.55
<i>Rates & chemicals will depend on the pests in your crop. Consult a certified pesticide applicator or the PNW Pest Control Management Guides. The following cost estimates are typical:</i>				
Roundup	24	oz	\$0.13	\$3.12
Surfactant	6.4	oz	\$0.23	\$1.47
2-4,D	24	oz	\$0.29	\$6.96
Machinery:				\$27.25
Fuel	2.20	gal	\$3.23	\$7.10
Lubricants	1	acre	\$1.08	\$1.08
Machinery Repairs	1	acre	\$6.56	\$6.56
Machinery Labor	0.63	hour	\$20.00	\$12.51
Custom & Consultants:				\$0.00
Rental Sprayer	0	acre	\$2.00	\$0.00
Rental Ripper Shooter	0	acre	\$2.50	\$0.00
Other:				\$0.00
Crop insurance	1	acre	\$0.00	\$0.00
Storage Facility & Equip. Repairs				\$0.00
Other Labor				
Operating Interest ¹				\$1.55
Total Variable Costs				\$63.50
Ownership Costs:				
Machinery depreciation		acre	\$10.52	\$10.52
Machinery interest on investment		acre	\$8.43	\$8.43
Machinery taxes, insurance, housing, licenses		acre	\$5.02	\$5.02
Land Cost*		acre		\$0.00
*Based on Share Rent Percentage:				
Landlord	33.00%			
Tenant	67.00%			
Overhead ²				\$3.00
Management fee ³				\$7.00
Total Fixed Costs				\$33.98
Total Costs per Acre				\$97.47
Returns to Risk				-\$97.47

Notes:

¹ Calculated as 5.75% interest on operating capital for 6 months.

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

³ The management fee is calculated as a 5% of gross revenue.

**Soil Builder blend consists of 4 lb Daikon radish, 3 lb common vetch, 1 lb crimson clover, 8 lb Monida oats, 8 lb forage peas (Flex), and 1 lb sun hemp.

Production Costs for Direct Seeded Cover Crops, Northern Idaho

Item	Quantity Per Acre	Unit	Price or Cost/Unit	Value or Cost/Acre
Variable Costs				
Cover Crop Seed:				\$18.30
Grazing Blend, 20 lb seed/ac**	1	lb	\$18.30	\$18.30
Fertilizer:				\$0.00
<i>Base your rate on your soil test results.</i>				
<i>A typical recommendation might include the following:</i>				
Nitrogen	0	lb	\$0.46	\$0.00
Phosphorous	0	lb	\$0.43	\$0.00
Sulfur	0	lb	\$0.37	\$0.00
Pesticides:				\$11.55
<i>Rates & chemicals will depend on the pests in your crop.</i>				
<i>Consult a certified pesticide applicator or the PNW Pest Control Management Guides.</i>				
<i>The following cost estimates are typical:</i>				
Roundup	24	oz	\$0.13	\$3.12
Surfactant	6.4	oz	\$0.23	\$1.47
2-4,D	24	oz	\$0.29	\$6.96
Machinery:				\$27.25
Fuel	2.20	gal	\$3.23	\$7.10
Lubricants	1	acre	\$1.08	\$1.08
Machinery Repairs	1	acre	\$6.56	\$6.56
Machinery Labor	0.63	hour	\$20.00	\$12.51
Custom & Consultants:				\$0.00
Rental Sprayer	0	acre	\$2.00	\$0.00
Rental Ripper Shooter	0	acre	\$2.50	\$0.00
Other:				\$0.00
Crop insurance	1	acre	\$0.00	\$0.00
Storage Facility & Equip. Repairs				\$0.00
Other Labor				
Operating Interest ¹				\$1.43
Total Variable Costs				\$58.53
Ownership Costs:				
Machinery depreciation		acre	\$10.52	\$10.52
Machinery interest on investment		acre	\$8.43	\$8.43
Machinery taxes, insurance, housing, licenses		acre	\$5.02	\$5.02
Land Cost*		acre		\$0.00
*Based on Share Rent Percentage:				
Landlord	33.00%			
Tenant	67.00%			
Overhead ²				\$3.00
Management fee ³				\$7.00
Total Fixed Costs				\$33.98
Total Costs per Acre				\$92.50
Returns to Risk				-\$92.50

Notes:

¹Calculated as 5.75% interest on operating capital for 6 months.

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

³The management fee is calculated as a 5% of gross revenue.

**Grazing cover crop blend consists of 6 lb Monida oats, 2 lb crimson clover, 10 lb spring forage oats, 0.5 lb rapeseed, 0.5 lb purple top turnips, and 1 lb hairy vetch.

Production Costs for Direct Seeded Cover Crops, Northern Idaho

Item	Quantity Per Acre	Unit	Price or Cost/Unit	Value or Cost/Acre
Variable Costs				
Cover Crop Seed:				\$25.84
Fall Nitrogen Fixing Blend, 45 lb/ac**	1	lb	\$25.84	\$25.84
Fertilizer:				\$0.00
<i>Base your rate on your soil test results.</i>				
<i>A typical recommendation might include the following:</i>				
Nitrogen	0	lb	\$0.46	\$0.00
Phosphorous	0	lb	\$0.43	\$0.00
Sulfur	0	lb	\$0.37	\$0.00
Pesticides:				\$11.55
<i>Rates & chemicals will depend on the pests in your crop.</i>				
<i>Consult a certified pesticide applicator or the PNW Pest Control Management Guides.</i>				
<i>The following cost estimates are typical:</i>				
Roundup	24	oz	\$0.13	\$3.12
Surfactant	6.4	oz	\$0.23	\$1.47
2-4,D	24	oz	\$0.29	\$6.96
Machinery:				\$27.25
Fuel	2.20	gal	\$3.23	\$7.10
Lubricants	1	acre	\$1.08	\$1.08
Machinery Repairs	1	acre	\$6.56	\$6.56
Machinery Labor	0.63	hour	\$20.00	\$12.51
Custom & Consultants:				\$0.00
Rental Sprayer	0	acre	\$2.00	\$0.00
Rental Ripper Shooter	0	acre	\$2.50	\$0.00
Other:				\$0.00
Crop insurance	1	acre	\$0.00	\$0.00
Storage Facility & Equip. Repairs				\$0.00
Other Labor				
Operating Interest ¹				\$1.62
Total Variable Costs				\$66.25
Ownership Costs:				
Machinery depreciation		acre	\$10.52	\$10.52
Machinery interest on investment		acre	\$8.43	\$8.43
Machinery taxes, insurance, housing, licenses		acre	\$5.02	\$5.02
Land Cost*		acre		\$0.00
*Based on Share Rent Percentage:				
Landlord	33.00%			
Tenant	67.00%			
Overhead ²				\$3.00
Management fee ³				\$7.00
Total Fixed Costs				\$33.98
Total Costs per Acre				\$100.23
Returns to Risk				-\$100.23

Notes:

¹Calculated as 5.75% interest on operating capital for 6 months.

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

³The management fee is calculated as a 5% of gross revenue.

**Nitrogen enhancing fall seeded blend consists of 21 lb of Monida oats, 3 lb of hairy vetch, 19.5 lb of Austrian winter peas, and 1.5 lb of purple top turnips for a total of 45 lb of seed per acre.

Schedule of Operations for Direct Seeded Spring Cover Crop Blends, Northern Idaho

Month	Operation	Tooling	Materials/Service
April	Harrow	200HP-WT, 60' Harrow	
April	Spray Weeds	200HP-WT, 100' Sprayer	18 oz Roundup, 50 oz Ammonium Sulfate, 1.5 oz M90
April	Drill*	450HP-WT, 36' Direct Seed Drill, Fertilizer Tanks & Pumps	Cover crop mix
September	Spray Weeds	200HP-WT, 100' Sprayer	18 oz Roundup, 1.5 oz M90, 50 oz Ammonium Sulfate

*Cover crop should be planted as soon as possible after terminating the weeds.

Schedule of Operations for Direct Seeded Fall Cover Crop Blends, Northern Idaho

Month	Operation	Tooling	Materials/Service
October	Spray Weeds	200HP-WT, 100' Sprayer	18 oz Roundup, 50 oz Ammonium Sulfate, 1.5 oz M90
October	Drill*	450HP-WT, 36' Direct Seed Drill, Fertilizer Tanks & Pumps	Cover crop mix
September	Spray Weeds	200HP-WT, 100' Sprayer	18 oz Roundup, 1.5 oz M90, 50 oz Ammonium Sulfate

*Cover crop should be planted as soon as possible after terminating the weeds.

Machinery Costs (\$/acre) from the University of Idaho Machinery Cost Calculator

Note: Per hour machinery costs can be changed in this master table and they will update throughout. Per acre costs are calculated in the Machine Cost program using the values listed in the Machinery Complement tab. You can also delete or insert lines in the individual crop machinery cost tables and the budget amounts will be recalculated.

	Fixed Costs (\$/acre):				Variable Costs (\$/acre):				Labor		Fuel Use	Total Cost (\$/acre)
	Depreciation	Interest	Housing, Insurance, License	Total Fixed Costs	Repairs	Fuel	Lubricants	Total	(\$/acre)	(hr/acre)	(gal/acre)	
200HP Trac+Bankout Wagon	\$1.45	\$1.24	\$0.23	\$2.93	\$0.67	\$1.40	\$0.21	\$2.28	\$1.76	0.09	0.43	\$6.97
200HP Trac+60'Harrow	\$0.48	\$0.41	\$0.07	\$0.96	\$0.23	\$0.40	\$0.06	\$0.69	\$0.51	0.03	0.12	\$2.16
200HP Trac+100'Sprayer	\$0.61	\$0.51	\$0.08	\$1.20	\$0.46	\$0.34	\$0.05	\$0.85	\$0.43	0.02	0.11	\$2.48
Fertilizer Tanks+Pumps	\$1.02	\$0.59	\$0.06	\$1.67	\$0.68	\$0.00	\$0.00	\$0.68	\$0.00	0.00	0.00	\$2.35
450HP Tractor+NT Drill, 36'	\$5.27	\$4.23	\$1.57	\$11.07	\$2.79	\$2.68	\$0.40	\$5.87	\$1.49	0.07	0.83	\$18.43
Combine + 36' Header	\$6.85	\$3.94	\$1.78	\$12.57	\$2.91	\$2.16	\$0.32	\$5.39	\$1.93	0.10	0.67	\$19.89
Pickup 3/4 ton 4WD	\$0.88	\$0.62	\$0.73	\$2.23	\$0.24	\$0.80	\$0.12	\$1.16	\$0.00	0.00	0.23	\$3.39
Tandem Axle Truck	\$0.64	\$0.64	\$1.13	\$2.41	\$0.80	\$1.00	\$0.15	\$1.95	\$3.60	0.18	0.31	\$7.96
Tandem Axle Truck	\$0.64	\$0.78	\$1.13	\$2.55	\$0.80	\$1.50	\$0.22	\$2.52	\$3.60	0.18	0.46	\$8.67
Trap Wagon	\$0.48	\$0.25	\$0.17	\$0.90	\$0.40	\$0.04	\$0.01	\$0.45	\$0.24	0.01	0.01	\$1.59
4WD-ATV	\$0.20	\$0.14	\$0.03	\$0.37	\$0.08	\$0.17	\$0.03	\$0.27	\$1.32	0.07	0.05	\$1.96
50HP Wheel Tractor	\$0.30	\$0.27	\$0.06	\$0.62	\$0.08	\$0.26	\$0.04	\$0.38	\$1.32	0.07	0.08	\$2.32
Total:	\$18.82	\$13.62	\$7.04	\$39.48	\$10.14	\$10.75	\$1.61	\$22.49	\$16.20	0.81	3.30	\$78.17

Note: Farm size is assumed to be 2500 acres for the purposes of machinery cost calculations.

Costs By Crop:

[Click on crop to see machinery costs by crop.](#)

[Soft White Winter Wheat](#)

[Soft White Spring Wheat](#)

[Hard Red Spring Wheat](#)

[Spring Barley](#)

[Spring Peas](#)

[Spring Lentils](#)

[Garbanzos](#)

Machinery Costs for No-Till Soft White Winter Wheat (\$/acre) from the University of Idaho Machinery Cost Calculator

	Fixed Costs (\$/acre):				Variable Costs (\$/acre):				Labor		Fuel Use	Total Cost (\$/acre)
	Depreciation	Interest	Housing, Insurance, License	Total Fixed Costs	Repairs	Fuel	Lubricants	Total	(\$/acre)	(hr/acre)	(gal/acre)	
<i>Annual costs:</i>												
Pickup 3/4 ton 4WD	\$0.88	\$0.62	\$0.73	\$2.23	\$0.24	\$0.80	\$0.12	\$1.16	\$0.00	0.00	0.23	\$3.39
Tandem Axle Truck	\$0.64	\$0.64	\$1.13	\$2.41	\$0.80	\$1.00	\$0.15	\$1.95	\$3.60	0.18	0.31	\$7.96
Tandem Axle Truck	\$0.64	\$0.78	\$1.13	\$2.55	\$0.80	\$1.50	\$0.22	\$2.52	\$3.60	0.18	0.46	\$8.67
Trap Wagon	\$0.48	\$0.25	\$0.17	\$0.90	\$0.40	\$0.04	\$0.01	\$0.45	\$0.24	0.01	0.01	\$1.59
4WD-ATV	\$0.20	\$0.14	\$0.03	\$0.37	\$0.08	\$0.17	\$0.03	\$0.27	\$1.32	0.07	0.05	\$1.96
50HP Wheel Tractor	\$0.30	\$0.27	\$0.06	\$0.62	\$0.08	\$0.26	\$0.04	\$0.38	\$1.32	0.07	0.08	\$2.32
<i>Seasonal operations:</i>												
200HP Trac+100'Sprayer	\$0.61	\$0.51	\$0.08	\$1.20	\$0.46	\$0.34	\$0.05	\$0.85	\$0.43	0.02	0.11	\$2.48
450HP Tractor+NT Drill, 36'	\$5.27	\$4.23	\$1.57	\$11.07	\$2.79	\$2.68	\$0.40	\$5.87	\$1.49	0.07	0.83	\$18.43
Fertilizer Tanks+Pumps	\$1.02	\$0.59	\$0.06	\$1.67	\$0.68	\$0.00	\$0.00	\$0.68	\$0.00	0.00	0.00	\$2.35
200HP Trac+100'Sprayer	\$0.61	\$0.51	\$0.08	\$1.20	\$0.46	\$0.34	\$0.05	\$0.85	\$0.43	0.02	0.11	\$2.48
Combine + 36' Header	\$6.85	\$3.94	\$1.78	\$12.57	\$2.91	\$2.16	\$0.32	\$5.39	\$1.93	0.10	0.67	\$19.89
200HP Trac+Bankout Wagon	\$1.45	\$1.24	\$0.23	\$2.93	\$0.67	\$1.40	\$0.21	\$2.28	\$1.76	0.09	0.43	\$6.97
200HP Trac+100'Sprayer	\$0.61	\$0.51	\$0.08	\$1.20	\$0.46	\$0.34	\$0.05	\$0.85	\$0.43	0.02	0.11	\$2.48
Total:	\$18.95	\$13.72	\$7.05	\$39.72	\$10.37	\$10.69	\$1.60	\$22.65	\$16.12	0.81	3.28	\$80.97

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Machinery Costs for No-Till Soft White Spring Wheat (\$/acre) from the University of Idaho Machinery Cost Calculator

	Fixed Costs (\$/acre):				Variable Costs (\$/acre):				Labor		Fuel Use	Total Cost (\$/acre)
	Depreciation	Interest	Housing, Insurance, License	Total Fixed Costs	Repairs	Fuel	Lubricants	Total	(\$/acre)	(hr/acre)	(gal/acre)	
<i>Annual costs:</i>												
Pickup 3/4 ton 4WD	\$0.88	\$0.62	\$0.73	\$2.23	\$0.24	\$0.80	\$0.12	\$1.16	\$0.00	0.00	0.23	\$3.39
Tandem Axle Truck	\$0.64	\$0.64	\$1.13	\$2.41	\$0.80	\$1.00	\$0.15	\$1.95	\$3.60	0.18	0.31	\$7.96
Tandem Axle Truck	\$0.64	\$0.78	\$1.13	\$2.55	\$0.80	\$1.50	\$0.22	\$2.52	\$3.60	0.18	0.46	\$8.67
Trap Wagon	\$0.48	\$0.25	\$0.17	\$0.90	\$0.40	\$0.04	\$0.01	\$0.45	\$0.24	0.01	0.01	\$1.59
4WD-ATV	\$0.20	\$0.14	\$0.03	\$0.37	\$0.08	\$0.17	\$0.03	\$0.27	\$1.32	0.07	0.05	\$1.96
50HP Wheel Tractor	\$0.30	\$0.27	\$0.06	\$0.62	\$0.08	\$0.26	\$0.04	\$0.38	\$1.32	0.07	0.08	\$2.32
<i>Seasonal operations:</i>												
200HP Trac+100'Sprayer	\$0.61	\$0.51	\$0.08	\$1.20	\$0.46	\$0.34	\$0.05	\$0.85	\$0.43	0.02	0.11	\$2.48
450HP Tractor+NT Drill, 36'	\$5.27	\$4.23	\$1.57	\$11.07	\$2.79	\$2.68	\$0.40	\$5.87	\$1.49	0.07	0.83	\$18.43
Fertilizer Tanks+Pumps	\$1.02	\$0.59	\$0.06	\$1.67	\$0.68	\$0.00	\$0.00	\$0.68	\$0.00	0.00	0.00	\$2.35
200HP Trac+100'Sprayer	\$0.61	\$0.51	\$0.08	\$1.20	\$0.46	\$0.34	\$0.05	\$0.85	\$0.43	0.02	0.11	\$2.48
Combine + 36' Header	\$6.85	\$3.94	\$1.78	\$12.57	\$2.91	\$2.16	\$0.32	\$5.39	\$1.93	0.10	0.67	\$19.89
200HP Trac+Bankout Wagon	\$1.45	\$1.24	\$0.23	\$2.93	\$0.67	\$1.40	\$0.21	\$2.28	\$1.76	0.09	0.43	\$6.97
200HP Trac+100'Sprayer	\$0.61	\$0.51	\$0.08	\$1.20	\$0.46	\$0.34	\$0.05	\$0.85	\$0.43	0.02	0.11	\$2.48
Total:	\$19.56	\$14.23	\$7.13	\$40.92	\$10.83	\$11.03	\$1.65	\$23.50	\$16.55	0.83	3.39	\$80.97

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Machinery Costs for No-Till Hard Red Spring Wheat (\$/acre) from the University of Idaho Machinery Cost Calculator												
	Fixed Costs (\$/acre):				Variable Costs (\$/acre):				Labor		Fuel Use	Total Cost (\$/acre)
	Depreciation	Interest	Housing, Insurance, License	Total Fixed Costs	Repairs	Fuel	Lubricants	Total	(\$/acre)	(hr/acre)	(gal/acre)	
<i>Annual costs:</i>												
Pickup 3/4 ton 4WD	\$0.88	\$0.62	\$0.73	\$2.23	\$0.24	\$0.80	\$0.12	\$1.16	\$0.00	0.00	0.23	\$3.39
Tandem Axle Truck	\$0.64	\$0.64	\$1.13	\$2.41	\$0.80	\$1.00	\$0.15	\$1.95	\$3.60	0.18	0.31	\$7.96
Tandem Axle Truck	\$0.64	\$0.78	\$1.13	\$2.55	\$0.80	\$1.50	\$0.22	\$2.52	\$3.60	0.18	0.46	\$8.67
Trap Wagon	\$0.48	\$0.25	\$0.17	\$0.90	\$0.40	\$0.04	\$0.01	\$0.45	\$0.24	0.01	0.01	\$1.59
4WD-ATV	\$0.20	\$0.14	\$0.03	\$0.37	\$0.08	\$0.17	\$0.03	\$0.27	\$1.32	0.07	0.05	\$1.96
50HP Wheel Tractor	\$0.30	\$0.27	\$0.06	\$0.62	\$0.08	\$0.26	\$0.04	\$0.38	\$1.32	0.07	0.08	\$2.32
<i>Seasonal operations:</i>												
200HP Trac+100'Sprayer	\$0.61	\$0.51	\$0.08	\$1.20	\$0.46	\$0.34	\$0.05	\$0.85	\$0.43	0.02	0.11	\$2.48
450HP Tractor+NT Drill, 36'	\$5.27	\$4.23	\$1.57	\$11.07	\$2.79	\$2.68	\$0.40	\$5.87	\$1.49	0.07	0.83	\$18.43
Fertilizer Tanks+Pumps	\$1.02	\$0.59	\$0.06	\$1.67	\$0.68	\$0.00	\$0.00	\$0.68	\$0.00	0.00	0.00	\$2.35
200HP Trac+100'Sprayer	\$0.61	\$0.51	\$0.08	\$1.20	\$0.46	\$0.34	\$0.05	\$0.85	\$0.43	0.02	0.11	\$2.48
Combine + 36' Header	\$6.85	\$3.94	\$1.78	\$12.57	\$2.91	\$2.16	\$0.32	\$5.39	\$1.93	0.10	0.67	\$19.89
200HP Trac+Bankout Wagon	\$1.45	\$1.24	\$0.23	\$2.93	\$0.67	\$1.40	\$0.21	\$2.28	\$1.76	0.09	0.43	\$6.97
200HP Trac+100'Sprayer	\$0.61	\$0.51	\$0.08	\$1.20	\$0.46	\$0.34	\$0.05	\$0.85	\$0.43	0.02	0.11	\$2.48
Total:	\$19.56	\$14.23	\$7.13	\$40.92	\$10.83	\$11.03	\$1.65	\$23.50	\$16.55	0.83	3.39	\$80.97

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Machinery Costs for No-Till Spring Barley (\$/acre) from the University of Idaho Machinery Cost Calculator												
	Fixed Costs (\$/acre):				Variable Costs (\$/acre):				Labor		Fuel Use	Total Cost (\$/acre)
	Depreciation	Interest	Housing, Insurance, License	Total Fixed Costs	Repairs	Fuel	Lubricants	Total	(\$/acre)	(hr/acre)	(gal/acre)	
<i>Annual costs:</i>												
Pickup 3/4 ton 4WD	\$0.88	\$0.62	\$0.73	\$2.23	\$0.24	\$0.80	\$0.12	\$1.16	\$0.00	0.00	0.23	\$3.39
Tandem Axle Truck	\$0.64	\$0.64	\$1.13	\$2.41	\$0.80	\$1.00	\$0.15	\$1.95	\$3.60	0.18	0.31	\$7.96
Tandem Axle Truck	\$0.64	\$0.78	\$1.13	\$2.55	\$0.80	\$1.50	\$0.22	\$2.52	\$3.60	0.18	0.46	\$8.67
Trap Wagon	\$0.48	\$0.25	\$0.17	\$0.90	\$0.40	\$0.04	\$0.01	\$0.45	\$0.24	0.01	0.01	\$1.59
4WD-ATV	\$0.20	\$0.14	\$0.03	\$0.37	\$0.08	\$0.17	\$0.03	\$0.27	\$1.32	0.07	0.05	\$1.96
50HP Wheel Tractor	\$0.30	\$0.27	\$0.06	\$0.62	\$0.08	\$0.26	\$0.04	\$0.38	\$1.32	0.07	0.08	\$2.32
<i>Seasonal operations:</i>												
200HP Trac+100'Sprayer	\$0.61	\$0.51	\$0.08	\$1.20	\$0.46	\$0.34	\$0.05	\$0.85	\$0.43	0.02	0.11	\$2.48
450HP Tractor+NT Drill, 36'	\$5.27	\$4.23	\$1.57	\$11.07	\$2.79	\$2.68	\$0.40	\$5.87	\$1.49	0.07	0.83	\$18.43
Fertilizer Tanks+Pumps	\$1.02	\$0.59	\$0.06	\$1.67	\$0.68	\$0.00	\$0.00	\$0.68	\$0.00	0.00	0.00	\$2.35
200HP Trac+100'Sprayer	\$0.61	\$0.51	\$0.08	\$1.20	\$0.46	\$0.34	\$0.05	\$0.85	\$0.43	0.02	0.11	\$2.48
Combine + 36' Header	\$6.85	\$3.94	\$1.78	\$12.57	\$2.91	\$2.16	\$0.32	\$5.39	\$1.93	0.10	0.67	\$19.89
200HP Trac+Bankout Wagon	\$1.45	\$1.24	\$0.23	\$2.93	\$0.67	\$1.40	\$0.21	\$2.28	\$1.76	0.09	0.43	\$6.97
200HP Trac+100'Sprayer	\$0.61	\$0.51	\$0.08	\$1.20	\$0.46	\$0.34	\$0.05	\$0.85	\$0.43	0.02	0.11	\$2.48
Total:	\$19.56	\$14.23	\$7.13	\$40.92	\$10.83	\$11.03	\$1.65	\$23.50	\$16.55	0.83	3.39	\$80.97

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Machinery Costs for No-Till Spring Peas (\$/acre) from the University of Idaho Machinery Cost Calculator												
	Fixed Costs (\$/acre):				Variable Costs (\$/acre):				Labor		Fuel Use	Total Cost (\$/acre)
	Depreciation	Interest	Housing, Insurance, License	Total Fixed Costs	Repairs	Fuel	Lubricants	Total	(\$/acre)	(hr/acre)	(gal/acre)	
<i>Annual costs:</i>												
Pickup 3/4 ton 4WD	\$0.88	\$0.62	\$0.73	\$2.23	\$0.24	\$0.80	\$0.12	\$1.16	\$0.00	\$0.00	\$0.23	\$3.39
Tandem Axle Truck	\$0.64	\$0.64	\$1.13	\$2.41	\$0.80	\$1.00	\$0.15	\$1.95	\$3.60	\$0.18	\$0.31	\$7.96
Tandem Axle Truck	\$0.64	\$0.78	\$1.13	\$2.55	\$0.80	\$1.50	\$0.22	\$2.52	\$3.60	\$0.18	\$0.46	\$8.67
Trap Wagon	\$0.48	\$0.25	\$0.17	\$0.90	\$0.40	\$0.04	\$0.01	\$0.45	\$0.24	\$0.01	\$0.01	\$1.59
4WD-ATV	\$0.20	\$0.14	\$0.03	\$0.37	\$0.08	\$0.17	\$0.03	\$0.27	\$1.32	\$0.07	\$0.05	\$1.96
50HP Wheel Tractor	\$0.30	\$0.27	\$0.06	\$0.62	\$0.08	\$0.26	\$0.04	\$0.38	\$1.32	\$0.07	\$0.08	\$2.32
<i>Seasonal operations:</i>												
200HP Trac+100'Sprayer	\$0.61	\$0.51	\$0.08	\$1.20	\$0.46	\$0.34	\$0.05	\$0.85	\$0.43	0.02	0.11	\$2.48
450HP Tractor+NT Drill, 36'	\$5.27	\$4.23	\$1.57	\$11.07	\$2.79	\$2.68	\$0.40	\$5.87	\$1.49	0.07	0.83	\$18.43
Fertilizer Tanks+Pumps	\$1.02	\$0.59	\$0.06	\$1.67	\$0.68	\$0.00	\$0.00	\$0.68	\$0.00	0.00	0.00	\$2.35
Combine + 36' Header	\$8.56	\$4.93	\$2.23	\$15.71	\$3.64	\$2.70	\$0.40	\$6.74	\$2.41	\$0.12	\$0.84	\$24.86
200HP Trac+Bankout Wagon	\$1.45	\$1.24	\$0.23	\$2.93	\$0.67	\$1.40	\$0.21	\$2.28	\$1.76	0.09	0.43	\$6.97
200HP Trac+100'Sprayer	\$0.61	\$0.51	\$0.08	\$1.20	\$0.46	\$0.34	\$0.05	\$0.85	\$0.43	0.02	0.11	\$2.48
Total:	\$20.66	\$14.70	\$7.49	\$42.86	\$11.09	\$11.23	\$1.68	\$24.00	\$16.60	0.83	3.45	\$83.46

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Machinery Costs for No-Till Spring Lentils (\$/acre) from the University of Idaho Machinery Cost Calculator												
	Fixed Costs (\$/acre):				Variable Costs (\$/acre):				Labor		Fuel Use	Total Cost (\$/acre)
	Depreciation	Interest	Housing, Insurance, License	Total Fixed Costs	Repairs	Fuel	Lubricants	Total	(\$/acre)	(hr/acre)	(gal/acre)	
<i>Annual costs:</i>												
Pickup 3/4 ton 4WD	\$0.88	\$0.62	\$0.73	\$2.23	\$0.24	\$0.80	\$0.12	\$1.16	\$0.00	\$0.00	\$0.23	\$3.39
Tandem Axle Truck	\$0.64	\$0.64	\$1.13	\$2.41	\$0.80	\$1.00	\$0.15	\$1.95	\$3.60	\$0.18	\$0.31	\$7.96
Tandem Axle Truck	\$0.64	\$0.78	\$1.13	\$2.55	\$0.80	\$1.50	\$0.22	\$2.52	\$3.60	\$0.18	\$0.46	\$8.67
Trap Wagon	\$0.48	\$0.25	\$0.17	\$0.90	\$0.40	\$0.04	\$0.01	\$0.45	\$0.24	\$0.01	\$0.01	\$1.59
4WD-ATV	\$0.20	\$0.14	\$0.03	\$0.37	\$0.08	\$0.17	\$0.03	\$0.27	\$1.32	\$0.07	\$0.05	\$1.96

50HP Wheel Tractor	\$0.30	\$0.27	\$0.06	\$0.62	\$0.08	\$0.26	\$0.04	\$0.38	\$1.32	\$0.07	\$0.08	\$2.32
<i>Seasonal operations:</i>												
200HP Trac+100'Sprayer	\$0.61	\$0.51	\$0.08	\$1.20	\$0.46	\$0.34	\$0.05	\$0.85	\$0.43	0.02	0.11	\$2.48
450HP Tractor+NT Drill, 36'	\$5.27	\$4.23	\$1.57	\$11.07	\$2.79	\$2.68	\$0.40	\$5.87	\$1.49	0.07	0.83	\$18.43
Fertilizer Tanks+Pumps	\$1.02	\$0.59	\$0.06	\$1.67	\$0.68	\$0.00	\$0.00	\$0.68	\$0.00	0.00	0.00	\$2.35
200HP Trac+100'Sprayer	\$0.61	\$0.51	\$0.08	\$1.20	\$0.46	\$0.34	\$0.05	\$0.85	\$0.43	0.02	0.11	\$2.48
Total:	\$10.65	\$8.53	\$5.03	\$24.22	\$6.79	\$7.13	\$1.07	\$14.99	\$12.43	0.62	2.18	\$51.63

Machinery Costs for No-Till Spring Canola (\$/acre) from the University of Idaho Machinery Cost Calculator												
	Fixed Costs (\$/acre):				Variable Costs (\$/acre):				Labor		Fuel Use	Total Cost (\$/acre)
	Depreciation	Interest	Housing, Insurance, License	Total Fixed Costs	Repairs	Fuel	Lubricants	Total	(\$/acre)	(hr/acre)	(gal/acre)	
<i>Annual costs:</i>												
Pickup 3/4 ton 4WD	\$0.88	\$0.62	\$0.73	\$2.23	\$0.24	\$0.80	\$0.12	\$1.16	\$0.00	\$0.00	\$0.23	\$3.39
Tandem Axle Truck	\$0.64	\$0.64	\$1.13	\$2.41	\$0.80	\$1.00	\$0.15	\$1.95	\$3.60	\$0.18	\$0.31	\$7.96
Tandem Axle Truck	\$0.64	\$0.78	\$1.13	\$2.55	\$0.80	\$1.50	\$0.22	\$2.52	\$3.60	\$0.18	\$0.46	\$8.67
Trap Wagon	\$0.48	\$0.25	\$0.17	\$0.90	\$0.40	\$0.04	\$0.01	\$0.45	\$0.24	\$0.01	\$0.01	\$1.59
4WD-ATV	\$0.20	\$0.14	\$0.03	\$0.37	\$0.08	\$0.17	\$0.03	\$0.27	\$1.32	\$0.07	\$0.05	\$1.96
50HP Wheel Tractor	\$0.30	\$0.27	\$0.06	\$0.62	\$0.08	\$0.26	\$0.04	\$0.38	\$1.32	\$0.07	\$0.08	\$2.32
<i>Seasonal operations:</i>												
200HP Trac+100'Sprayer	\$0.61	\$0.51	\$0.08	\$1.20	\$0.46	\$0.34	\$0.05	\$0.85	\$0.43	0.02	0.11	\$2.48
450HP Tractor+NT Drill, 36'	\$5.27	\$4.23	\$1.57	\$11.07	\$2.79	\$2.68	\$0.40	\$5.87	\$1.49	0.07	0.83	\$18.43
Fertilizer Tanks+Pumps	\$1.02	\$0.59	\$0.06	\$1.67	\$0.68	\$0.00	\$0.00	\$0.68	\$0.00	0.00	0.00	\$2.35
Combine + 36' Header	\$8.56	\$4.93	\$2.23	\$15.71	\$3.64	\$2.70	\$0.40	\$6.74	\$2.41	\$0.12	\$0.84	\$24.86
200HP Trac+Bankout Wagon	\$1.45	\$1.24	\$0.23	\$2.93	\$0.67	\$1.40	\$0.21	\$2.28	\$1.76	0.09	0.43	\$6.97
200HP Trac+100'Sprayer	\$0.61	\$0.51	\$0.08	\$1.20	\$0.46	\$0.34	\$0.05	\$0.85	\$0.43	0.02	0.11	\$2.48
Total:	\$20.66	\$14.70	\$7.49	\$42.86	\$11.09	\$11.23	\$1.68	\$24.00	\$16.60	0.83	3.45	\$83.46

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Machinery Costs for No-Till Garbanzos (\$/acre) from the University of Idaho Machinery Cost Calculator												
	Fixed Costs (\$/acre):				Variable Costs (\$/acre):				Labor		Fuel Use	Total Cost (\$/acre)
	Depreciation	Interest	Housing, Insurance, License	Total Fixed Costs	Repairs	Fuel	Lubricants	Total	(\$/acre)	(hr/acre)	(gal/acre)	
<i>Annual costs:</i>												
Pickup 3/4 ton 4WD	\$0.88	\$0.62	\$0.73	\$2.23	\$0.24	\$0.80	\$0.12	\$1.16	\$0.00	\$0.00	\$0.23	\$3.39
2-Ton Truck	\$0.64	\$0.64	\$1.13	\$2.41	\$0.80	\$1.00	\$0.15	\$1.95	\$3.60	\$0.18	\$0.31	\$7.96
40' Grain Trailer+Tractor	\$0.64	\$0.78	\$1.13	\$2.55	\$0.80	\$1.50	\$0.22	\$2.52	\$3.60	\$0.18	\$0.46	\$8.67
Trap Wagon	\$0.48	\$0.25	\$0.17	\$0.90	\$0.40	\$0.04	\$0.01	\$0.45	\$0.24	\$0.01	\$0.01	\$1.59
4WD-ATV	\$0.20	\$0.14	\$0.03	\$0.37	\$0.08	\$0.17	\$0.03	\$0.27	\$1.32	\$0.07	\$0.05	\$1.96
50HP Wheel Tractor	\$0.30	\$0.27	\$0.06	\$0.62	\$0.08	\$0.26	\$0.04	\$0.38	\$1.32	\$0.07	\$0.08	\$2.32
<i>Seasonal operations:</i>												
200HP Trac+100'Sprayer	\$0.61	\$0.51	\$0.08	\$1.20	\$0.46	\$0.34	\$0.05	\$0.85	\$0.43	0.02	0.11	\$2.48
450HP Tractor+NT Drill, 36'	\$5.27	\$4.23	\$1.57	\$11.07	\$2.79	\$2.68	\$0.40	\$5.87	\$1.49	0.07	0.83	\$18.43
Fertilizer Tanks+Pumps	\$1.02	\$0.59	\$0.06	\$1.67	\$0.68	\$0.00	\$0.00	\$0.68	\$0.00	0.00	0.00	\$2.35
Combine + 36' Header	\$6.85	\$3.94	\$1.78	\$12.57	\$2.91	\$2.16	\$0.32	\$5.39	\$1.93	0.10	0.67	\$19.89
200HP Trac+Bankout Wagon	\$1.45	\$1.24	\$0.23	\$2.93	\$0.67	\$1.40	\$0.21	\$2.28	\$1.76	0.09	0.43	\$6.97
200HP Trac+100'Sprayer	\$0.61	\$0.51	\$0.08	\$1.20	\$0.46	\$0.34	\$0.05	\$0.85	\$0.43	0.02	0.11	\$2.48
Total:	\$18.95	\$13.72	\$7.05	\$39.72	\$10.37	\$10.69	\$1.60	\$22.65	\$16.12	0.81	3.28	\$78.49

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Machinery Costs for No-Till Cover Crop (\$/acre) from the University of Idaho Machinery Cost Calculator												
	Fixed Costs (\$/acre):				Variable Costs (\$/acre):				Labor		Fuel Use	Total Cost (\$/acre)
	Depreciation	Interest	Housing, Insurance, License	Total Fixed Costs	Repairs	Fuel	Lubricants	Total	(\$/acre)	(hr/acre)	(gal/acre)	
<i>Annual costs:</i>												
Pickup 3/4 ton 4WD	\$0.88	\$0.62	\$0.73	\$2.23	\$0.24	\$0.80	\$0.12	\$1.16	\$0.00	\$0.00	\$0.23	\$3.39
2-Ton Truck	\$0.64	\$0.64	\$1.13	\$2.41	\$0.80	\$1.00	\$0.15	\$1.95	\$3.60	\$0.18	\$0.31	\$7.96
40' Grain Trailer+Tractor	\$0.64	\$0.78	\$1.13	\$2.55	\$0.80	\$1.50	\$0.22	\$2.52	\$3.60	\$0.18	\$0.46	\$8.67
Trap Wagon	\$0.48	\$0.25	\$0.17	\$0.90	\$0.40	\$0.04	\$0.01	\$0.45	\$0.24	\$0.01	\$0.01	\$1.59
4WD-ATV	\$0.20	\$0.14	\$0.03	\$0.37	\$0.08	\$0.17	\$0.03	\$0.27	\$1.32	\$0.07	\$0.05	\$1.96
50HP Wheel Tractor	\$0.30	\$0.27	\$0.06	\$0.62	\$0.08	\$0.26	\$0.04	\$0.38	\$1.32	\$0.07	\$0.08	\$2.32
<i>Seasonal operations:</i>												
200HP Trac+60'Harrow	\$0.48	\$0.41	\$0.07	\$0.96	\$0.23	\$0.40	\$0.06	\$0.69	\$0.51	0.03	0.12	\$2.16
200HP Trac+100'Sprayer	\$0.61	\$0.51	\$0.08	\$1.20	\$0.46	\$0.34	\$0.05	\$0.85	\$0.43	0.02	0.11	\$2.48
450HP Tractor+NT Drill, 36'	\$5.27	\$4.23	\$1.57	\$11.07	\$2.79	\$2.68	\$0.40	\$5.87	\$1.49	0.07	0.83	\$18.43
Fertilizer Tanks+Pumps	\$1.02	\$0.59	\$0.06	\$1.67	\$0.68	\$0.00	\$0.00	\$0.68	\$0.00	0.00	0.00	\$2.35
200HP Trac+100'Sprayer	\$0.61	\$0.51	\$0.08	\$1.20	\$0.46	\$0.34	\$0.05	\$0.85	\$0.43	0.02	0.11	\$2.48
Total:	\$10.52	\$8.43	\$5.02	\$23.98	\$6.56	\$7.19	\$1.08	\$14.83	\$12.51	0.63	2.20	\$51.31

Machinery Complement for Direct Seed Planting, Over 18" Precipitation, Northern Idaho

Type of Machine	Replacement 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, ATVs:</i>										
4WD-ATV	8,500	0	10	150	3,500	200	1.2	1.2	1.1	
50HP-WT w/Bucket	16,000	5	20	150	3,500	300	3	1.2	1.1	
200HP FWA Tractor	95,000	5	15	300	35,000	1000	9	1.2	1.1	
450HP 4WD Tractor	180,000	10	10	250	80,000	4,000	20	1.2	1.25	
<i>Equipment:</i>										
Bankout Wagon	18,000	0	15	200	3,500	1000	9	0.6	1.1	-
100' Pull Sprayer	42,000	0	20	200	6,000	2000	9	0.6	1.2	51
60' Harrow	12,000	5	15	75	1,000	500	9	0.6	1.1	37
30' Shredder	30,000	0	10	115	5,500	2000	9	2.5	1.2	16
Fertilizer Tanks & Pump	30,000	0	20	-	-	1000	-	-	-	-
36' NT Drill	150,000	6	10	200	75,000	5,000	20	3	1.25	15
36' Combine	300,000	2	10	225	100,000	8,500	14	2.6	1.25	13
<i>Trucks:</i>										
				Miles/year:			MPG:			
Tandem Axle Truck	40,000	10	15	7,500	16,000	2,000	6	10.1	1.2	
Tandem Axle Truck	40,000	10	15	7,500	16,000	2,000	6	10.1	1.2	
Trap Wagon	17,000	10	10	500	5,000	1000	12	3.8	1.2	
3/4T 4WD Pickup	38,000	0	10	15,000	16,000	600	12	6.8	1.2	

Note: Farm size is assumed to be 2500 acres for the purposes of machinery cost calculations.