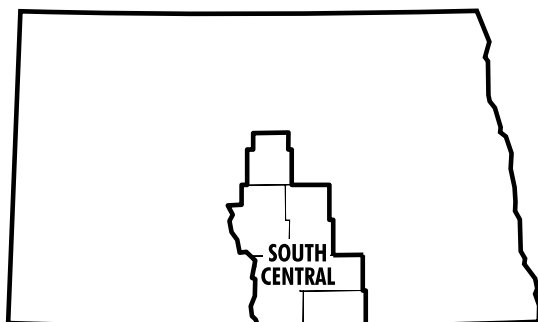




FARM MANAGEMENT PLANNING GUIDE

December 2015

Projected 2016 Crop Budgets



South Central North Dakota

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Note: This region consists of six counties: Burleigh, Emmons, Kidder, Logan, McIntosh and Sheridan.

The 2016 crop budgets provide an estimate of revenues and costs for selected crops. Each set of budgets are developed for a multi-county region. There is considerable variation in soil type and productivity, weather conditions, as well as management and production practices within each region. Therefore, **THESE BUDGETS ARE ONLY INTENDED TO BE USED AS A GUIDE. EVERY INDIVIDUAL IS HIGHLY ENCOURAGED TO DEVELOP HIS/HER OWN BUDGETS!**

The profitability budget accounts for full economic opportunity costs for land and machinery investment, regardless of farm operator equity position. The bottom line is the return to labor and management. This is the expected "payment" to the producer for the labor and managerial efforts required by the crop enterprise. Each individual must make the decision whether it is sufficient.

The budget can be changed to conform to the more common definition of accounting profit (return to unpaid labor and management, and owner equity) by

replacing the machinery investment and land charge cost items with your per acre interest and rental expense of machinery and land, and real estate tax if land is owned.

The budget can be used for long run decisions if the revenues and costs are realistic for several years. (Crop prices, direct costs, and the land charge are best estimates for only the 2016 crop year, but crop yields are historic averages and machinery ownership costs are an average for the total length of ownership). If the budget shows a high return to labor and management, and is representative for several years, increased acreage and corresponding investment should be considered. However, if long-run returns to labor and management are unsatisfactory the best decision may be to exit the crop enterprise and employ the machinery and land investment, and labor and management, in a different enterprise or investment.

For short-run planning decisions you can omit the indirect costs if the land and machinery required to produce the different enterprises are in place. Simply compare the crop enterprises by calculating return over direct costs. Labor requirements and risk should also be considered. Insurance is not available for some crops.

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The budget can be used to estimate cashflow by making a few modifications. Machinery depreciation should be omitted and the machinery investment number replaced with your per acre principal and interest payment on machinery debt. For owned land, the land charge should be replaced with your per acre real estate tax and principal and interest payment on land debt.

The 2014 Farm Bill initiated the Price Loss Coverage (PLC) and Agricultural Risk Coverage (ARC) support programs, and eliminated the direct and counter-cyclical payment programs and the ACRE program.

PLC and ARC payments have been omitted from the budgets because those payments, if any, are tied to historic farm program base acres, not to current crop selection or production.

Primary Assumptions:

Crops are planted on dryland recrop ground. Costs of moving crop to local market/storage are included.

The budgets for the South West, North West, South Central and North Central regions typically represent production systems where soil disturbance only occurs at seeding.

Market Price: Best estimates of NDSU extension economists. The greater of projected market price and marketing loan rate is used.

Market Yields: Average yield for the 7 year period 2008-2014, after the low and high yield years are removed. Yields for safflower, yellow mustard, buckwheat, millet, rye and chickpeas are from NDSU extension agronomists and industry sources.

Fertilizer: Cost of fertilizer applied, based on soil test, to meet yield goal of 130% of market yield. N fertilizer can be reduced if previous crop was soybean, dry bean, field peas or lentil.

Soil test - recrop:
 Nitrogen - 35 lb
 Phosphorus - 9 ppm
 Potassium - 328 ppm

Fertilizer prices:
 Nitrogen - .40/lb
 Phosphorus - .44/lb
 Potassium - .33/lb

Seed Prices:

Spring Wheat	9.25/bu
Durum	12.50/bu
Barley	8.50/bu
Corn GM	2.70/thou.kern.
Soybean RR2	.33/thou.kern.
Dry Beans	.67/lb
Oil Sunflower	1.50/thou.kern.
Conf. Sunflower	2.50/thou.kern.
Canola	10.25/lb
Flax	14.50/bu
Field Peas	14.00/bu
Oats	6.00/bu
Mustard	2.00/lb
Buckwheat	.60/lb
Millet	.25/lb
Winter Wheat	8.00/bu
Rye	8.00/bu

Fuel prices:

Diesel	1.80/gal
Gas	1.95/gal

Lubrication charge: 15% of fuel cost

Crop Insurance: Revenue Protection was used for all wheat, barley, soybeans, corn, canola, sunflowers and dry beans. Yield Protection or APH insurance was used for other crops. A 70% coverage and optional units were used, except corn for which 75% coverage and enterprise units were assumed.

Miscellaneous: soil testing, machinery rent and custom work.

Operating Interest: Direct costs charged 4.25% interest for 6 month period.

Misc. Overhead: Machinery housing and insurance at .5% and .85%, respectively, of average machinery investment. Also, liability insurance and license fees of trucks. In addition, \$3 per acre is assumed for general farm utilities, farm publications, meetings, dues, income tax preparation, legal fees, etc.

Land charge = average cash rent.

Machinery investment: 4.5% real interest rate, over the years of machine ownership, is charged on average machinery investment. The real, or inflation adjusted, rate is the commercial rate minus the inflation rate. Ave. mach. investment = (Purchase price + Disposal price)/2

Depreciation = (Purchase price - disposal price / years ownership)

Spring Wheat

Durum

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	40	_____	41	_____
Market Price	5.32	_____	6.02*	_____
MARKET INCOME	212.80	_____	246.82	_____
DIRECT COSTS				
-Seed	15.73	_____	22.50	_____
-Herbicides	25.20	_____	25.20	_____
-Fungicides**	9.00	_____	9.00	_____
-Insecticides***	0.00	_____	0.00	_____
-Fertilizer	48.71	_____	50.28	_____
-Crop Insurance	11.40	_____	13.20	_____
-Fuel & Lubrication	8.93	_____	8.98	_____
-Repairs	17.58	_____	17.61	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	7.50	_____	7.50	_____
-Operating Interest	3.06	_____	3.28	_____
SUM OF LISTED DIRECT COSTS	147.11	=====	157.54	=====
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.06	_____	7.08	_____
-Machinery Depreciation	20.23	_____	20.27	_____
-Machinery Investment	11.55	_____	11.58	_____
-Land Investment	62.50	_____	62.50	_____
SUM OF LISTED INDIRECT COSTS	101.34	=====	101.44	=====
SUM OF ALL LISTED COSTS	248.45	_____	258.97	_____
RETURN TO LABOR & MANAGEMENT	(35.65)	_____	(12.15)	_____
LISTED COSTS PER BUDGET UNIT	(bu)		(bu)	
-Direct Costs	3.68	_____	3.84	_____
-Indirect Costs	2.53	_____	2.47	_____
-Total Costs	6.21	_____	6.32	_____

Wheat notes:

*Durum price is for milling quality. There is risk of lower quality and lower price.

**Includes seed treatment, an early season foliar fungicide and a late season fungicide. Prothioconazole or metconazole containing products, for fusarium head blight (scab) control are recommended when conditions are favorable for infection.

***Cereal grain aphid insecticide would cost about \$6.

Malting Barley

Corn Grain

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	63	_____	100	_____
Market Price	4.24*	_____	3.50	_____
MARKET INCOME	267.12	_____	350.00	_____
DIRECT COSTS				
-Seed	13.60	_____	78.30*	_____
-Herbicides	23.70	_____	21.00	_____
-Fungicides	9.00**	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	47.21	_____	65.79	_____
-Crop Insurance	16.70	_____	12.90	_____
-Fuel & Lubrication	9.90	_____	13.37	_____
-Repairs	18.21	_____	21.34	_____
-Drying	0.00	_____	21.00	_____
-Miscellaneous	7.50	_____	7.50	_____
-Operating Interest	3.10	_____	5.13	_____
SUM OF LISTED DIRECT COSTS	148.92	_____	246.33	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.47	_____	9.26	_____
-Machinery Depreciation	21.36	_____	30.94	_____
-Machinery Investment	12.15	_____	17.11	_____
-Land Investment	62.50	_____	62.50	_____
SUM OF LISTED INDIRECT COSTS	103.48	_____	119.81	_____
SUM OF ALL LISTED COSTS	252.40	_____	366.15	_____
RETURN TO LABOR & MANAGEMENT	14.72	_____	(16.15)	_____
LISTED COSTS PER BUDGET UNIT	(bu)		(bu)	
-Direct Costs	2.36	_____	2.46	_____
-Indirect Costs	1.64	_____	1.20	_____
-Total Costs	4.01	_____	3.66	_____

Barley notes:

*There is risk of not making malting barley quality. Use \$2.90 price for feed barley quality.

**Includes seed treatment, an early season foliar fungicide and a late season fungicide. Prothioconazole or metconazole containing products, for fusarium head blight (scab) control are recommended when conditions are favorable for infection.

Corn notes:

*GM corn with herbicide tolerance and above ground insect control traits. Cost includes insecticide seed treatment for wireworm, rootworm, white grub and suppression of cutworm.

Soybeans

Drybeans

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	28	_____	1500	_____
Market Price	7.95	_____	0.22	_____
MARKET INCOME	222.60	_____	330.00	_____
DIRECT COSTS				
-Seed	65.75*	_____	55.28	_____
-Herbicides	20.00	_____	45.80*	_____
-Fungicides	0.00	_____	20.00**	_____
-Insecticides	4.00**	_____	0.00	_____
-Fertilizer	4.64	_____	33.86	_____
-Crop Insurance	15.50	_____	19.70	_____
-Fuel & Lubrication	8.43	_____	11.50	_____
-Repairs	17.11	_____	21.58	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	4.75	_____	12.75	_____
-Operating Interest	2.98	_____	4.68	_____
SUM OF LISTED DIRECT COSTS	143.16	=====	225.15	=====
INDIRECT (FIXED) COSTS				
-Misc. Overhead	6.88	_____	8.02	_____
-Machinery Depreciation	20.40	_____	26.90	_____
-Machinery Investment	11.33	_____	15.23	_____
-Land Investment	62.50	_____	62.50	_____
SUM OF LISTED INDIRECT COSTS	101.10	=====	112.65	=====
SUM OF ALL LISTED COSTS	244.26	_____	337.80	_____
RETURN TO LABOR & MANAGEMENT	(21.66)	_____	(7.80)	_____
LISTED COSTS PER BUDGET UNIT	(bu)		(lb)	
-Direct Costs	5.11	_____	0.15	_____
-Indirect Costs	3.61	_____	0.08	_____
-Total Costs	8.72	_____	0.23	_____

Soybean notes:

*RR2 (glyphosate) resistant soybeans. The cost includes \$8 for inoculant and fungicide treatment in addition to seed expense.

**Soybean aphid and/or spider mite insecticide

Drybean notes:

Under the 2014 farm bill government payment reductions can occur if drybean plantings exceed non-base acres plus 15 percent of base acres (35 percent if enrolled in ARC-IC).

*Includes dessicant prior to straight cutting

**Fungicide for white mold. Fungicide for rust at \$4-\$12 plus application maybe necessary.

Oil Sunflower

Confection Sunflower

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1450		1350	
Market Price	0.159		0.216	
MARKET INCOME	230.55		291.60	
DIRECT COSTS				
-Seed	33.00		45.00	
-Herbicides	33.20		35.30	
-Fungicides	0.00*		0.00*	
-Insecticides	5.00**		10.00**	
-Fertilizer	31.91		28.74	
-Crop Insurance	13.40		19.90	
-Fuel & Lubrication	9.69		9.56	
-Repairs	17.53		17.45	
-Drying	4.35		4.05	
-Miscellaneous	15.50		23.50	
-Operating Interest	3.48		4.11	
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	167.06		197.61	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.52		7.47	
-Machinery Depreciation	22.03		21.87	
-Machinery Investment	12.91		12.83	
-Land Investment	62.50		62.50	
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	104.97		104.67	
SUM OF ALL LISTED COSTS	272.03		302.28	
RETURN TO LABOR & MANAGEMENT	(41.48)		(10.68)	
LISTED COSTS PER BUDGET UNIT	(lb)		(lb)	
-Direct Costs	0.12		0.15	
-Indirect Costs	0.07		0.08	
-Total Costs	0.19		0.22	

Oil Sunflower notes:

*Fungicide for rust would cost \$4 plus application.

**One spraying for head feeding insects (red seed weevil, lygus bug and banded moths). Custom application cost of \$8 is under "Miscellaneous." Insecticide treatment for cutworms would cost about \$5 plus application (usually tank mixed with herbicide).

Confection Sunflower notes:

*Fungicide for rust would cost \$4 plus application.

**Two sprayings for head feeding insects (red seed weevil, lygus bug and banded moths) at about \$5 per application. Each custom application cost of \$8 is under "Miscellaneous." Insecticide treatment for cutworms would cost about \$5 plus application (usually tank mixed with herbicide).

Canola

Flax

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1570	_____	18	_____
Market Price	0.145	_____	8.05	_____
MARKET INCOME	227.65	_____	144.90	_____
DIRECT COSTS				
-Seed	51.25*	_____	13.05	_____
-Herbicides	21.30	_____	28.50	_____
-Fungicides	0.00**	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	61.01	_____	19.36	_____
-Crop Insurance	12.60	_____	6.10	_____
-Fuel & Lubrication	8.50	_____	7.85	_____
-Repairs	16.53	_____	16.58	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	7.50	_____	1.50	_____
-Operating Interest	3.80	_____	1.98	_____
SUM OF LISTED DIRECT COSTS	182.49	=====	94.92	=====
INDIRECT (FIXED) COSTS				
-Misc. Overhead	6.88	_____	6.60	_____
-Machinery Depreciation	19.49	_____	18.82	_____
-Machinery Investment	11.31	_____	10.74	_____
-Land Investment	62.50	_____	62.50	_____
SUM OF LISTED INDIRECT COSTS	100.18	=====	98.66	=====
SUM OF ALL LISTED COSTS	282.67	_____	193.58	_____
RETURN TO LABOR & MANAGEMENT	(55.02)	_____	(48.68)	_____
LISTED COSTS PER BUDGET UNIT	(lb)		(bu)	
-Direct Costs	0.12	_____	5.27	_____
-Indirect Costs	0.06	_____	5.48	_____
-Total Costs	0.18	_____	10.75	_____

Canola notes:

*Cost includes insecticide seed treatment for flea beetles.

**Fungicide for white mold would cost about \$18 plus application.

Field Peas

Oats

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	35		62	
Market Price	6.42		2.26	
MARKET INCOME	224.70		140.12	
DIRECT COSTS				
-Seed	42.00		12.00	
-Herbicides	33.00		9.80	
-Fungicides	1.50		0.00	
-Insecticides	0.00*		0.00	
-Fertilizer	8.65		37.66	
-Crop Insurance	8.30		9.00	
-Fuel & Lubrication	9.53		10.27	
-Repairs	18.69		18.19	
-Drying	0.00		0.00	
-Miscellaneous	9.25		7.50	
-Operating Interest	2.78		2.22	
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	133.70		106.64	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.21		7.70	
-Machinery Depreciation	22.43		21.80	
-Machinery Investment	12.19		12.95	
-Land Investment	62.50		62.50	
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	104.33		104.96	
SUM OF ALL LISTED COSTS	238.03		211.60	
RETURN TO LABOR & MANAGEMENT	(13.33)		(71.48)	
LISTED COSTS PER BUDGET UNIT	(bu)		(bu)	
-Direct Costs	3.82		1.72	
-Indirect Costs	2.98		1.69	
-Total Costs	6.80		3.41	

Field Pea notes:

For 2016, yellow and green peas are expected to have very similar returns and costs.

*Insecticide treatment for cutworms and/or pea aphids would cost about \$5 per acre plus application.

Yellow Mustard

Buckwheat

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	850	_____	900	_____
Market Price	0.31	_____	0.213	_____
MARKET INCOME	263.50	_____	191.70	_____
DIRECT COSTS				
-Seed	24.00	_____	30.00	_____
-Herbicides	20.10	_____	18.10	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	22.61	_____	13.60*	_____
-Crop Insurance	0.00*	_____	9.60	_____
-Fuel & Lubrication	8.29	_____	8.08	_____
-Repairs	16.91	_____	16.26	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	7.50	_____	1.50	_____
-Operating Interest	2.11	_____	2.06	_____
SUM OF LISTED DIRECT COSTS	101.52	=====	99.20	=====
INDIRECT (FIXED) COSTS				
-Misc. Overhead	6.87	_____	6.71	_____
-Machinery Depreciation	19.50	_____	19.00	_____
-Machinery Investment	11.74	_____	11.05	_____
-Land Investment	62.50	_____	62.50	_____
SUM OF LISTED INDIRECT COSTS	100.61	=====	99.26	=====
SUM OF ALL LISTED COSTS	202.13	_____	198.46	_____
RETURN TO LABOR & MANAGEMENT	61.37	_____	(6.76)	_____
LISTED COSTS PER BUDGET UNIT				
	(lb)		(lb)	
-Direct Costs	0.12	_____	0.11	_____
-Indirect Costs	0.12	_____	0.11	_____
-Total Costs	0.24	_____	0.22	_____

Yellow Mustard notes:

*Crop insurance is not available in this region.

Buckwheat notes:

*Crop insurance is not available in some counties of the region.

Millet

Winter Wheat

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1500	_____	46*	_____
Market Price	0.065	_____	4.53	_____
MARKET INCOME	97.50	_____	208.38	_____
DIRECT COSTS				
-Seed	6.25	_____	9.35	_____
-Herbicides	9.70	_____	22.40	_____
-Fungicides	0.00	_____	9.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	19.48	_____	58.11	_____
-Crop Insurance	0.00	_____	11.70	_____
-Fuel & Lubrication	8.92	_____	8.45	_____
-Repairs	17.32	_____	16.17	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	7.50	_____	7.50	_____
-Operating Interest	1.47	_____	3.03	_____
SUM OF LISTED DIRECT COSTS	70.63	=====	145.72	=====
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.13	_____	6.79	_____
-Machinery Depreciation	20.23	_____	18.98	_____
-Machinery Investment	12.12	_____	10.45	_____
-Land Investment	62.50	_____	62.50	_____
SUM OF LISTED INDIRECT COSTS	101.99	=====	98.72	=====
SUM OF ALL LISTED COSTS	172.62	_____	244.44	_____
RETURN TO LABOR & MANAGEMENT	(75.12)	_____	(36.06)	_____
LISTED COSTS PER BUDGET UNIT	(lb)		(bu)	
-Direct Costs	0.05	_____	3.17	_____
-Indirect Costs	0.07	_____	2.15	_____
-Total Costs	0.12	_____	5.31	_____

Winter Wheat notes:

*Yield is per harvested acre. There is some risk of acreage abandonment in spring.

Rye

	Per Acre	Your Figures
Market Yield	42	_____
Market Price	4.49	_____
MARKET INCOME	188.58	_____
DIRECT COSTS		
-Seed	9.60	_____
-Herbicides	6.50	_____
-Fungicides	0.00	_____
-Insecticides	0.00	_____
-Fertilizer	51.84	_____
-Crop Insurance	9.50	_____
-Fuel & Lubrication	8.42	_____
-Repairs	16.04	_____
-Drying	0.00	_____
-Miscellaneous	7.50	_____
-Operating Interest	2.32	_____
	=====	=====
SUM OF LISTED DIRECT COSTS	111.72	_____
INDIRECT (FIXED) COSTS		
-Misc. Overhead	6.81	_____
-Machinery Depreciation	19.02	_____
-Machinery Investment	10.63	_____
-Land Investment	62.50	_____
	=====	=====
SUM OF LISTED INDIRECT COSTS	98.96	_____
SUM OF ALL LISTED COSTS	210.68	_____
RETURN TO LABOR & MANAGEMENT	(22.10)	_____
LISTED COSTS PER BUDGET UNIT	(bu)	
-Direct Costs	2.66	_____
-Indirect Costs	2.36	_____
-Total Costs	5.02	_____

2016 Machinery List

Machine	Purch. Price	Annual Use	Years to trade	Trade in	Deprec.	Invest.	Repairs	Ac/hr
FWA 140HP Tractor	130000	400 hr	20	40676	11.17 /hr	9.60 /hr	12.84 /hr	
FWA 180HP Tractor	176200	500 hr	15	50575	16.75 /hr	10.20 /hr	17.40 /hr	
4WD 340HP Tractor	232100	500 hr	15	66661	22.06 /hr	13.44 /hr	13.11 /hr	
SP Combine (base unit)	281900	250 hr	12	68074	71.28 /hr	31.50 /hr	44.43 /hr	
Tandem Truck (used)	38300	150 hr	15	12200	11.60 /hr	7.58 /hr	7.85 /hr	
Semi & Trailer (used)	42900	150 hr	10	12250	20.43 /hr	8.27 /hr	9.47 /hr	
Pick-up Truck	30600	300 hr	10	6000	8.20 /hr	2.75 /hr	3.55 /hr	
Swather 30 ft	30600	1000 ac	20	7253	1.17 /ac	0.85 /ac	0.49 /ac	13.1
Sprayer 90 ft	38800	5000 ac	10	19278	0.39 /ac	0.26 /ac	0.50 /ac	42.5
Heavy Harrow 70 ft	31000	2000 ac	20	18080	0.32 /ac	0.55 /ac	0.35 /ac	39.7
Air Seeder 40 ft	180800	2400 ac	10	92386	3.68 /ac	2.56 /ac	6.25 /ac	17.0
Planter 16-30	112800	1400 ac	15	46864	3.14 /ac	2.57 /ac	4.67 /ac	14.2
Corn head 8R	58600	800 ac	12	16808	4.35 /ac	2.12 /ac	1.36 /ac	6.8
Grain head w/pu	15600	800 ac	20	1536	0.88 /ac	0.48 /ac	0.25 /ac	10.2
Grain str. cut 30 ft	26000	2000 ac	8	10508	0.97 /ac	0.41 /ac	0.40 /ac	10.2
Head w/sunf pans 30 ft	31300	600 ac	20	3200	2.34 /ac	1.29 /ac	0.48 /ac	10.2
Flex head 30 ft	38600	1000 ac	20	3541	1.75 /ac	0.95 /ac	0.60 /ac	10.2
Rock picker	22300	50 hr	20	7122	0.51 /ac	0.44 /ac	0.33 /ac	29.1
Grain Cart	30000	100 hr	20	5100	12.45 /hr	7.90 /hr	7.50 /hr	
Grain auger	12700	50 hr	20	735	11.97 /hr	6.05 /hr	4.70 /hr	

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