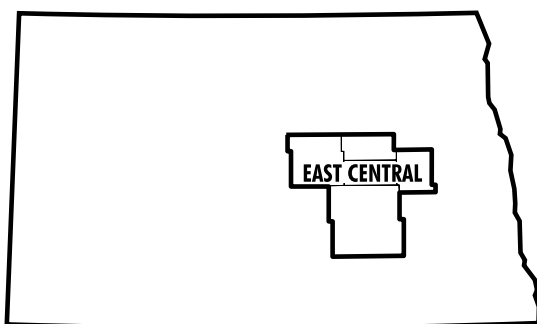




FARM MANAGEMENT PLANNING GUIDE

January 2017

Projected 2017 Crop Budgets



East Central North Dakota

Andrew Swenson, Farm Management Specialist
Ron Haugen, Farm Management Specialist

Note: This region consists of five counties: Eddy, Foster, Griggs, Stutsman and Wells.

The 2017 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 2017 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.

NDSU EXTENSION
SERVICE

North Dakota State University, Fargo, ND

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. **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.

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 2009-2015, 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 - 34 lb
 Phosphorus - 8 ppm
 Potassium - 280 ppm

Fertilizer prices:
 Nitrogen - .35/lb
 Phosphorus - .37/lb
 Potassium - .25/lb

Seed Prices:

Spring Wheat	8.75/bu
Durum	12.00/bu
Barley	7.75/bu
Corn GM	2.65/thou.kern.
Soybean RR2	.33/thou.kern.
Dry Beans	.68/lb
Oil Sunflower	1.50/thou.kern.
Conf. Sunflower	2.60/thou.kern.
Canola	11.00/lb
Flax	12.50/bu
Field Peas	13.75/bu
Oats	5.50/bu
Mustard	2.00/lb
Buckwheat	.60/lb
Millet	.25/lb
Winter Wheat	7.50/bu
Rye	7.75/bu

Fuel prices:

Diesel	1.85/gal
Gas	2.10/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 80% coverage and enterprise units were assumed.

Miscellaneous: soil testing, machinery rent and custom work.

Operating Interest: Direct costs charged 4.75% 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, \$3.50 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	52	_____	45	_____
Market Price	5.05	_____	5.79*	_____
MARKET INCOME	262.60	_____	260.55	_____
DIRECT COSTS				
-Seed	15.31	_____	21.00	_____
-Herbicides	22.00	_____	22.00	_____
-Fungicides**	17.00	_____	17.00	_____
-Insecticides***	0.00	_____	0.00	_____
-Fertilizer	60.63	_____	50.87	_____
-Crop Insurance	13.10	_____	13.50	_____
-Fuel & Lubrication	12.03	_____	11.73	_____
-Repairs	19.62	_____	19.43	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	3.83	_____	3.73	_____
SUM OF LISTED DIRECT COSTS	165.02	=====	160.75	=====
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.95	_____	7.82	_____
-Machinery Depreciation	22.52	_____	22.17	_____
-Machinery Investment	13.10	_____	12.91	_____
-Land Charge	67.00	_____	67.00	_____
SUM OF LISTED INDIRECT COSTS	110.56	=====	109.91	=====
SUM OF ALL LISTED COSTS	275.59	_____	270.66	_____
RETURN TO LABOR & MANAGEMENT	(12.99)	_____	(10.11)	_____
LISTED COSTS PER BUDGET UNIT				
	(bu)		(bu)	
-Direct Costs	3.17	_____	3.57	_____
-Indirect Costs	2.13	_____	2.44	_____
-Total Costs	5.30	_____	6.01	_____

Wheat notes:

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

**Includes seed treatment, an early season foliar fungicide, and a late season fungicide which is often warranted in this region for fusarium head blight (scab) control.

***Cereal grain aphid insecticide would cost about \$4.

Malting Barley

Corn Grain

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	69	_____	119	_____
Market Price	4.00*	_____	3.30	_____
MARKET INCOME	276.00	_____	392.70	_____
DIRECT COSTS				
-Seed	13.56	_____	83.47*	_____
-Herbicides	19.20	_____	23.00	_____
-Fungicides	17.00**	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	47.97	_____	72.99	_____
-Crop Insurance	11.10	_____	22.10	_____
-Fuel & Lubrication	12.67	_____	17.16	_____
-Repairs	19.85	_____	24.67	_____
-Drying	0.00	_____	21.42	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	3.39	_____	6.33	_____
SUM OF LISTED DIRECT COSTS	146.25	=====	272.64	=====
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.30	_____	10.59	_____
-Machinery Depreciation	23.58	_____	34.59	_____
-Machinery Investment	13.69	_____	19.90	_____
-Land Charge	67.00	_____	67.00	_____
SUM OF LISTED INDIRECT COSTS	112.57	=====	132.07	=====
SUM OF ALL LISTED COSTS	258.82	_____	404.72	_____
RETURN TO LABOR & MANAGEMENT	17.18	_____	(12.02)	_____
LISTED COSTS PER BUDGET UNIT	(bu)		(bu)	
-Direct Costs	2.12	_____	2.29	_____
-Indirect Costs	1.63	_____	1.11	_____
-Total Costs	3.75	_____	3.40	_____

Barley notes:

*There is risk of not making malting barley quality. Use \$2.70 price for feed barley quality.

**Includes seed treatment, an early season foliar fungicide and a late season fungicide recommended when conditions are favorable for fusarium head blight (scab) 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	31	_____	1580	_____
Market Price	8.85	_____	0.24	_____
MARKET INCOME	274.35	_____	379.20	_____
DIRECT COSTS				
-Seed	65.75*	_____	56.10	_____
-Herbicides	22.00	_____	45.80*	_____
-Fungicides	0.00	_____	20.00**	_____
-Insecticides	4.00**	_____	0.00	_____
-Fertilizer	6.41	_____	32.92	_____
-Crop Insurance	13.50	_____	15.00	_____
-Fuel & Lubrication	10.14	_____	13.14	_____
-Repairs	18.61	_____	23.09	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	4.75	_____	12.75	_____
-Operating Interest	3.45	_____	5.20	_____
SUM OF LISTED DIRECT COSTS	148.60	=====	223.99	=====
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.58	_____	8.66	_____
-Machinery Depreciation	21.91	_____	28.19	_____
-Machinery Investment	12.58	_____	16.31	_____
-Land Charge	67.00	_____	67.00	_____
SUM OF LISTED INDIRECT COSTS	109.08	=====	120.15	=====
SUM OF ALL LISTED COSTS	257.68	_____	344.15	_____
RETURN TO LABOR & MANAGEMENT	16.67	_____	35.05	_____
LISTED COSTS PER BUDGET UNIT	(bu)		(lb)	
-Direct Costs	4.79	_____	0.14	_____
-Indirect Costs	3.52	_____	0.08	_____
-Total Costs	8.31	_____	0.22	_____

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. A second treatment may be necessary. Fungicide for rust at \$4-\$12 plus application maybe necessary.

Oil Sunflower Confection Sunflower

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1490		1290	
Market Price	0.172		0.222	
MARKET INCOME	256.28		286.38	
DIRECT COSTS				
-Seed	33.00		49.40	
-Herbicides	27.00		29.20	
-Fungicides	0.00*		0.00*	
-Insecticides	6.00**		12.00**	
-Fertilizer	30.10		24.46	
-Crop Insurance	13.20		15.90	
-Fuel & Lubrication	12.34		12.06	
-Repairs	19.59		19.41	
-Drying	4.47		3.87	
-Miscellaneous	9.50		17.50	
-Operating Interest	3.69		4.37	
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	158.87		188.17	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.40		8.28	
-Machinery Depreciation	24.16		23.84	
-Machinery Investment	14.76		14.60	
-Land Charge	67.00		67.00	
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	114.31		113.72	
SUM OF ALL LISTED COSTS	273.19		301.88	
RETURN TO LABOR & MANAGEMENT	(16.91)		(15.50)	
LISTED COSTS PER BUDGET UNIT				
	(lb)		(lb)	
-Direct Costs	0.11		0.15	
-Indirect Costs	0.08		0.09	
-Total Costs	0.18		0.23	

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."

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 \$6 per application. Each custom application cost of \$8 is under "Miscellaneous."

Canola

Flax

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1570	_____	18	_____
Market Price	0.161	_____	8.60	_____
MARKET INCOME	252.77	_____	154.80	_____
DIRECT COSTS				
-Seed	55.00*	_____	12.50	_____
-Herbicides	22.50	_____	21.00	_____
-Fungicides	0.00**	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	54.43	_____	17.74	_____
-Crop Insurance	14.20	_____	6.00	_____
-Fuel & Lubrication	11.40	_____	11.29	_____
-Repairs	18.78	_____	19.62	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	4.22	_____	2.13	_____
SUM OF LISTED DIRECT COSTS	182.03	=====	91.78	=====
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.75	_____	7.82	_____
-Machinery Depreciation	21.73	_____	22.33	_____
-Machinery Investment	13.19	_____	13.79	_____
-Land Charge	67.00	_____	67.00	_____
SUM OF LISTED INDIRECT COSTS	109.68	=====	110.94	=====
SUM OF ALL LISTED COSTS	291.70	_____	202.73	_____
RETURN TO LABOR & MANAGEMENT	(38.93)	_____	(47.93)	_____
LISTED COSTS PER BUDGET UNIT	(lb)		(bu)	
-Direct Costs	0.12	_____	5.10	_____
-Indirect Costs	0.07	_____	6.16	_____
-Total Costs	0.19	_____	11.26	_____

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	36		71	
Market Price	6.24		2.16	
MARKET INCOME	224.64		153.36	
DIRECT COSTS				
-Seed	41.25		11.00	
-Herbicides	31.50		5.25	
-Fungicides	1.50		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	8.62		40.89	
-Crop Insurance	10.30		7.30	
-Fuel & Lubrication	11.92		13.45	
-Repairs	20.71		20.43	
-Drying	0.00		0.00	
-Miscellaneous	9.25		1.50	
-Operating Interest	3.21		2.37	
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	138.26		102.19	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.01		8.57	
-Machinery Depreciation	24.28		24.43	
-Machinery Investment	13.83		14.52	
-Land Charge	67.00		67.00	
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	113.13		114.51	
SUM OF ALL LISTED COSTS	251.39		216.70	
RETURN TO LABOR & MANAGEMENT	(26.75)		(63.34)	
LISTED COSTS PER BUDGET UNIT	(bu)		(bu)	
-Direct Costs	3.84		1.44	
-Indirect Costs	3.14		1.61	
-Total Costs	6.98		3.05	

Field Pea notes:

Green pea price is expected to be about \$.70 higher than yellow peas.

Yellow Mustard

Buckwheat

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	850	_____	950	_____
Market Price	0.305	_____	0.193	_____
MARKET INCOME	259.25	_____	183.35	_____
DIRECT COSTS				
-Seed	24.00	_____	30.00	_____
-Herbicides	13.70	_____	11.50	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides	6.00*	_____	0.00	_____
-Fertilizer	20.76	_____	14.16	_____
-Crop Insurance	0.00**	_____	8.90*	_____
-Fuel & Lubrication	10.45	_____	10.61	_____
-Repairs	18.54	_____	18.66	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	2.26	_____	2.26	_____
SUM OF LISTED DIRECT COSTS	97.20	_____	97.59	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.51	_____	7.60	_____
-Machinery Depreciation	21.29	_____	21.52	_____
-Machinery Investment	12.86	_____	12.97	_____
-Land Charge	67.00	_____	67.00	_____
SUM OF LISTED INDIRECT COSTS	108.66	_____	109.08	_____
SUM OF ALL LISTED COSTS	205.86	_____	206.67	_____
RETURN TO LABOR & MANAGEMENT	53.39	_____	(23.32)	_____
LISTED COSTS PER BUDGET UNIT				
	(lb)		(lb)	
-Direct Costs	0.11	_____	0.10	_____
-Indirect Costs	0.13	_____	0.11	_____
-Total Costs	0.24	_____	0.22	_____

Yellow Mustard notes:

*Insecticide seed treatment for flea beetles.

**Crop insurance is not available.

Buckwheat notes:

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

Millet

Winter Wheat

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1700	_____	52*	_____
Market Price	0.065	_____	4.29	_____
MARKET INCOME	110.50	_____	223.08	_____
DIRECT COSTS				
-Seed	6.25	_____	9.00	_____
-Herbicides	3.25	_____	23.90	_____
-Fungicides	0.00	_____	9.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	21.96	_____	60.63	_____
-Crop Insurance	0.00	_____	13.10	_____
-Fuel & Lubrication	11.85	_____	10.29	_____
-Repairs	19.41	_____	17.46	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	7.50	_____
-Operating Interest	1.53	_____	3.58	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	65.74	_____	154.47	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.90	_____	7.38	_____
-Machinery Depreciation	22.59	_____	20.28	_____
-Machinery Investment	13.54	_____	11.20	_____
-Land Charge	67.00	_____	67.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	111.04	_____	105.87	_____
SUM OF ALL LISTED COSTS	176.78	_____	260.33	_____
RETURN TO LABOR & MANAGEMENT	(66.28)	_____	(37.25)	_____
LISTED COSTS PER BUDGET UNIT	(lb)		(bu)	
-Direct Costs	0.04	_____	2.97	_____
-Indirect Costs	0.07	_____	2.04	_____
-Total Costs	0.10	_____	5.01	_____

Winter Wheat notes:

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

Rye

	Per Acre	Your Figures
Market Yield	46	_____
Market Price	4.60	_____
MARKET INCOME	211.60	_____
DIRECT COSTS		
-Seed	9.30	_____
-Herbicides	6.50	_____
-Fungicides	0.00	_____
-Insecticides	0.00	_____
-Fertilizer	52.26	_____
-Crop Insurance	7.40	_____
-Fuel & Lubrication	10.08	_____
-Repairs	17.03	_____
-Drying	0.00	_____
-Miscellaneous	7.50	_____
-Operating Interest	2.61	_____
	=====	=====
SUM OF LISTED DIRECT COSTS	112.69	_____
INDIRECT (FIXED) COSTS		
-Misc. Overhead	7.32	_____
-Machinery Depreciation	20.02	_____
-Machinery Investment	11.18	_____
-Land Charge	67.00	_____
	=====	=====
SUM OF LISTED INDIRECT COSTS	105.52	_____
SUM OF ALL LISTED COSTS	218.21	_____
RETURN TO LABOR & MANAGEMENT	(6.61)	_____
LISTED COSTS PER BUDGET UNIT	(bu)	
-Direct Costs	2.45	_____
-Indirect Costs	2.29	_____
-Total Costs	4.74	_____

2017 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)	38600	150 hr	15	12300	11.69 /hr	7.64 /hr	7.92 /hr	
Semi & Trailer (used)	43300	150 hr	10	12400	20.60 /hr	8.36 /hr	9.57 /hr	
Pick-up Truck	32000	300 hr	10	7400	8.20 /hr	2.96 /hr	3.67 /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
Chisel Plow 38 ft	43300	3000 ac	15	25280	0.40 /ac	0.51 /ac	0.96 /ac	19.6
Field Cultivator 48 ft	48900	3000 ac	15	28558	0.45 /ac	0.58 /ac	0.86 /ac	24.7
Tandem Disk 28 ft	34300	800 ac	20	9830	1.53 /ac	1.24 /ac	0.87 /ac	13.6
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	30500	100 hr	20	5200	12.65 /hr	8.03 /hr	7.60 /hr	
Grain auger	13000	50 hr	20	750	12.25 /hr	6.19 /hr	4.80 /hr	

The NDSU Extension Service does not endorse commercial products or companies even though reference may be made to tradenames, trademarks or service names. NDSU encourages you to use and share this content, but please do so under the conditions of our Creative Commons license. You may copy, distribute, transmit and adapt this work as long as you give full attribution, don't use the work for commercial purposes and share your resulting work similarly. For more information, visit www.ag.ndsu.edu/agcomm/creative-commons.

For more information on this and other topics, see www.ag.ndsu.edu