



Projected No-till 2006 Crop Budgets Southwest North Dakota

Ron Haugen, Farm Management Specialist

Andrew Swenson, Farm Management Specialist

Roger Ashley, Area Agronomist, Dickinson Research Extension Center

The 2006 no-till crop budgets provide an estimate of revenues and costs for selected crops. Each set of budgets is developed for a multicounty region. Each region has considerable variation in soil type and productivity, and weather conditions, as well as management and production practices. Therefore, **these budgets are intended to be used only as a guide. Individuals are highly encouraged to develop their 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 decide 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, or rental, expense of machinery and land, and real estate tax if land is owned, respectively.

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 2006 crop year, with crop yields assumed at break-even levels for 2006 prices, and machinery ownership costs as 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, as well as 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 also should be considered. Crop insurance is not available for some crops.

The budgets can be used to estimate cash flow 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.

Direct and counter-cyclical payments under the 2002 Farm Bill are omitted from the budgets because those payments are tied to historic farm program base acres and payment yields, not to current crop selection or production. Direct payments for this region are about \$6.25 per acre when averaged over all crop acreage. Counter-cyclical payments will occur if the national average price of wheat, feed grains or soybeans is below a certain level. Counter-cyclical payment rates per bushel of 10 cents for wheat, 35 cents for corn, and 6 cents for barley are expected with the price levels used in the budgets. The estimate over all crop acreage is about \$1.75 per acre for this region.

NDSU
Extension Service

North Dakota State University, Fargo, ND 58105

Counter-cyclical payments will vary by a farm's base acres and payment yields, and will dissipate if prices rise.

No-till Definition

Budgets in this publication are estimated based on no-till practices as defined below:

The no-till planting system leaves 30 percent or more of the soil surface covered with crop residue after planting. In addition to crop residue cover, the soil is left undisturbed from harvest to planting except for strips of up to one-third of the row width (strips may involve only residue disturbance or may include soil disturbance). Planting or drilling is accomplished using disc openers, coulters, row cleaners, in-row chisels or roto-tillers. Weed control is accomplished primarily with crop protection products. Other common terms used to describe no-till include direct-seeding, slot planting, zero-till, row-till and slot-till. Source: National Crop Residue Management Survey, Conservation Technology Information Center. 2002. www.ctic.purdue.edu/Core4/CT/Definitions.html

Sequence of Operations

After weeds and volunteer crops emerge or resume growth, a herbicide (usually glyphosate) is applied to eliminate the "green bridge" and early competition from weeds. With specific crops such as sunflowers, flax and field peas, and where herbicide labels permit, preplant residue herbicides are tank-mixed with glyphosate for the preplant burn-down for residual weed control.

Nitrogen fertilizer, usually in the form of urea, is broadcast. Sufficient rainfall prior to significant volatilization of fertilizer is required to move nitrogen into the soil. Some producers apply fertilizer with coulters or knives in a separate operation prior to seeding. Some drills have the capability to place seed and fertilizer in separate bands to avoid injury from fertilizer.

Postemergent application of crop protection chemicals are made as required. When wheat follows wheat, a foliar fungicide product is included with the herbicide to control diseases such as tan spot. When wheat follows nonhost crops, the foliar fungicide product is not included.

Harvest is done with a combine equipped with a straw spreader or straw chopper. Some producers use a stripper header rather than a conventional header for wheat and barley that leaves more residue intact and less crop residue going through the combine.

Rotational Acre Budgets

In research trials, no-till practices properly implemented will increase grain yields an average of 47 percent in southwestern North Dakota, when compared with conventionally tilled yields. Rotations are an integral part of no-till, and when the proper diversity in the rotation occurs, producers have increased yields by about 30 percent over continuous wheat. Source: Roger Ashley, Dickinson REC.

Producers who use no-till seeding practices must build a systems-approach to managing inputs for profitability. No-till systems with rotations having little diversity will fail in the long run. Crop rotations are the most effective way of reducing many pest populations. Soil environments created by some crops remain after their growth and improve the growth efficiency of following crops. This rotational effect is specific for some crop combinations and sequences. A positive relationship between these crops in a rotation can make some rotations more profitable than other rotations in the long run.

A specific rotation is not assumed in this publication; however, two rotation examples are given on pages 4 and 5. The inclusion of field peas in the rotation reduces the amount of fertilizer nitrogen applied and eliminates a foliar fungicide application for the control of tan spot for the following spring wheat crop. This reduces input costs and increases net return for the wheat crop, as well as for the entire rotation sequence.

Use net return per rotational acre to measure profitability of different crop rotations correctly. In a rotational acre analysis, net returns for each crop year in the rotation are summed and divided by the number of years in the rotation, thereby standardizing all rotations to an acre basis. Break-even yields were calculated based on the expected market price. Producers can estimate the net return by multiplying the expected market price by expected yield in each crop and subtracting the sum of costs. This is done for each crop, and a composite budget for the rotation can be derived by summing the costs and returns for the life of the rotation and dividing by the number of years in the rotation.

Comparison to Conventional Budgets

In comparing the profitability of a no-till budget to a conventional budget, one must keep in mind the return to labor and management. It is often difficult to distinguish between return to labor and return to management from an owner/operator point of view. Economists often assume a charge for owner labor and management, resulting in an economic profit or loss for the enterprise. A charge is not included for labor of management; the bottom line is return to labor and management. Typically less labor and machinery investment is needed for a no-till operation, as compared with a conventional operation. However, management time and costs typically would be higher in a no-till operation. Risk factors for each enterprise also are not considered.

Primary Assumptions

All crops are assumed to be planted on dryland continuously cropped ground.

Costs of moving crop to local market/storage are included.

Expected Market Price: Best estimates by NDSU Extension economists. The greater of projected market price or marketing loan rate is used.

Break-even yields at expected market price are calculated to cover all listed costs.

Fertilizer: Cost of fertilizer applied, based on soil test, to meet yield goal of 130 percent of market yield. Nitrogen fertilizer can be reduced if previous crop was soybeans, dry beans, field peas or lentils.

Soil test

Nitrogen	- 45 lb
Phosphorus	- 12 ppm
Potassium	- 356 ppm

Fertilizer prices:

Nitrogen	- .335/lb
Phosphorus	- .25/lb
Potassium	- .185/lb

Seed Prices:

Spring Wheat	5.80/bu
Durum	6.00/bu
Barley	4.20/bu
Corn grain RR	1.43/thous.kern.
Oil Sunflower	.66/thou.kern.
Conf. Sunflower	1.10/thou.kern.
Flax	9.00/bu
Canola RR	3.20/lb
Oats	3.25/bu
Field Peas	5.75/bu
Millet	.17/lb
Buckwheat	.28/lb
Safflower	.45/lb
Lentils	.19/lb
Mustard	.65/lb
Large Chickpeas	.65/lb
Rye	4.00/bu
Winter Wheat	4.75/bu

Fuel prices:

Diesel	2.10/gal
Gasoline	2.20/gal

Lubrication charge: 15 percent of fuel cost

Crop Insurance: Coverage levels are 70 percent on all insurable crops. MPCl estimates are used, except for RA-HPO on spring wheat and soybeans.

Miscellaneous: Soil testing, machinery rent and custom work.

Operating Interest: Direct costs charged 7.75 percent interest for six-month period.

Miscellaneous Overhead: Machinery housing and insurance at .5 percent and .85 percent, respectively, of average machinery investment. Also, liability insurance and license fees of trucks. In addition, \$1 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 percent 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. Average machinery investment = (purchase price + disposal price)/2

Depreciation = (purchase price - disposal price/ years of ownership)

Example 1. CROP ROTATION

	Year 1	Year 2	Year 3	Year 4	
Crop Composite	Spring Wheat 25%	Winter Wheat 25%	Grain Corn 25%	Field Peas 25%	Composite Budget 100%
Break-even Yield at					
Expected Market Price:	35.5 bu	44.3 bu	76.6 bu	32.9 bu	N/A
Expected Market Price	\$3.41	\$3.04	\$1.97	\$3.50	N/A
MARKET INCOME	121.05	126.92	150.85	115.20	128.51
DIRECT COSTS					
-Seed	7.25	4.75	27.17	17.25	14.11
-Herbicides	13.05	8.13	10.50	17.39	12.27
-Fungicides	1.50	6.50	0.00	0.00	2.00
-Insecticides	0.00	0.00	0.00	0.00	0.00
-Fertilizer	25.60	39.23	20.21	0.00	21.26
-Crop Insurance	4.30	3.30	0.00	4.10	2.93
-Fuel & Lubrication	8.21	8.82	10.32	9.25	9.15
-Repairs	8.75	9.37	10.90	10.10	9.78
-Drying	0.00	0.00	8.64	0.00	2.16
-Miscellaneous	5.00	5.00	5.00	7.00	5.50
-Operating Interest	2.85	3.30	3.59	2.52	3.07
	=====	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	76.52	88.40	96.34	67.61	82.22
INDIRECT (FIXED) COSTS					
-Misc. Overhead	3.03	3.30	4.17	3.28	3.45
-Machinery Depreciation	10.68	11.54	16.34	12.49	12.76
-Machinery Investment	5.82	6.40	9.01	6.81	7.01
-Land Investment	25.00	25.00	25.00	25.00	25.00
	=====	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	44.54	46.01	54.52	47.59	48.17
SUM OF ALL LISTED COSTS	121.05	126.92	150.85	115.20	128.51

Example 2. CROP ROTATION

	Year 1	Year 2	Year 3	
Crop Composite	Spring Wheat 33.3%	Grain Corn 33.3%	Field Peas 33.3%	Composite Budget 100%
Break-even Yield at				
Expected Market Price:	35.5 bu	76.6 bu	32.9 bu	N/A
Expected Market Price	\$3.41	\$1.97	\$3.50	N/A
MARKET INCOME	121.05	150.85	115.20	129.03
DIRECT COSTS				
-Seed	7.25	27.17	17.25	17.22
-Herbicides	13.05	10.50	17.39	13.65
-Fungicides	1.50	0.00	0.00	0.50
-Insecticides	0.00	0.00	0.00	0.00
-Fertilizer	25.60	20.21	0.00	15.27
-Crop Insurance	4.30	0.00	4.10	2.80
-Fuel & Lubrication	8.21	10.32	9.25	9.26
-Repairs	8.75	10.90	10.10	9.92
-Drying	0.00	8.64	0.00	2.88
-Miscellaneous	5.00	5.00	7.00	5.67
-Operating Interest	2.85	3.59	2.52	2.99
SUM OF LISTED DIRECT COSTS	76.52	96.34	67.61	80.16
INDIRECT (FIXED) COSTS				
-Misc. Overhead	3.03	4.17	3.28	3.49
-Machinery Depreciation	10.68	16.34	12.49	13.17
-Machinery Investment	5.82	9.01	6.81	7.21
-Land Investment	25.00	25.00	25.00	25.00
SUM OF LISTED INDIRECT COSTS	44.54	54.52	47.59	48.88
SUM OF ALL LISTED COSTS	121.05	150.85	115.20	129.03

No-till Spring Wheat

No-till Durum

	Per Acre	Your Figures	Per Acre	Your Figures
Break-even Yield at				
Expected Market Price (bu):	35.5	_____	35.4	_____
Expected Market Price:	\$ 3.41	_____	\$ 3.43	_____
MARKET INCOME	121.05	_____	121.42	_____
DIRECT COSTS				
-Seed	7.25	_____	9.00	_____
-Herbicides	13.05	_____	13.05	_____
-Fungicides	1.50*	_____	1.50*	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	25.60	_____	25.60	_____
-Crop Insurance	4.30	_____	2.90	_____
-Fuel & Lubrication	8.21	_____	8.21	_____
-Repairs	8.75	_____	8.75	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	5.00	_____	5.00	_____
-Operating Interest	2.85	_____	2.87	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	76.52	_____	76.88	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	3.03	_____	3.03	_____
-Machinery Depreciation	10.68	_____	10.68	_____
-Machinery Investment	5.82	_____	5.82	_____
-Land Charge	25.00	_____	25.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	44.54	_____	44.54	_____
SUM OF ALL LISTED COSTS	121.05	_____	121.42	_____
RETURN TO LABOR & MANAGEMENT	—	_____	—	_____

notes:

*Early season foliar fungicide would cost about \$3-\$5 and late season fungicide would cost about \$9.50 plus application. Recent trials consistently show yield response of 5-10% with early season fungicide, if spring wheat or durum is planted into residue, and 15-20% with late application if weather favors disease development.

No-till Malting Barley

No-till Corn Grain

	Per Acre	Your Figures	Per Acre	Your Figures
Break-even Yield at Expected Market Price (bu):	50.0	_____	76.6	_____
Expected Market Price:	\$ 2.31*	_____	\$ 1.97	_____
MARKET INCOME	115.43	_____	150.85	_____
DIRECT COSTS				
-Seed	6.30	_____	27.17*	_____
-Herbicides	12.55	_____	10.50	_____
-Fungicides	1.25	_____	0.00	_____
-Insecticides	0.00	_____	0.00**	_____
-Fertilizer	18.45	_____	20.21	_____
-Crop Insurance	3.10	_____	0.00***	_____
-Fuel & Lubrication	9.47	_____	10.32	_____
-Repairs	9.60	_____	10.90	_____
-Drying	0.00	_____	8.64	_____
-Miscellaneous	5.00	_____	5.00	_____
-Operating Interest	2.55	_____	3.59	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	68.27	_____	96.34	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	3.42	_____	4.17	_____
-Machinery Depreciation	11.96	_____	16.34	_____
-Machinery Investment	6.79	_____	9.01	_____
-Land Charge	25.00	_____	25.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	47.16	_____	54.52	_____
SUM OF ALL LISTED COSTS	115.43	_____	150.85	_____
RETURN TO LABOR & MANAGEMENT	—	_____	—	_____

Barley notes:

*Use county loan rate of about \$1.69 for feed barley price. Break-even yield for field barley would be 68.3 bu.

Corn notes:

*Glyphosate resistant corn.

**Insecticide for wireworm, rootworm, cutworm and white grub would cost \$15-\$16 for granular applied or about \$5 per acre for seed treatment (only suppression for cutworm). Corn borer insecticide, foliar applied mid-season, would cost about \$7 plus application.

***Crop insurance only available by written agreement.

No-till Oil Sunflowers

No-till Confectionery Sunflowers

	Per Acre	Your Figures	Per Acre	Your Figures
Break-even Yield at				
Expected Market Price (lb):	1,235.5	_____	1,075.1	_____
Expected Market Price:	\$ 0.110	_____	\$ 0.146	_____
MARKET INCOME	135.90	_____	156.97	_____
DIRECT COSTS				
-Seed	13.20	_____	19.80	_____
-Herbicides	28.55	_____	26.55	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides	0.00*	_____	6.00*	_____
-Fertilizer	13.28	_____	13.28	_____
-Crop Insurance	7.80	_____	10.80	_____
-Fuel & Lubrication	7.55	_____	7.55	_____
-Repairs	7.96	_____	7.96	_____
-Drying	2.50	_____	2.44	_____
-Miscellaneous	5.00	_____	9.75	_____
-Operating Interest	3.33	_____	4.11	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	89.16	_____	110.23	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	3.31	_____	3.31	_____
-Machinery Depreciation	11.74	_____	11.74	_____
-Machinery Investment	6.68	_____	6.68	_____
-Land Charge	25.00	_____	25.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	46.74	_____	46.74	_____
SUM OF ALL LISTED COSTS	135.90	_____	156.97	_____
RETURN TO LABOR & MANAGEMENT	—	_____	—	_____

Oil Sunflower notes:

*Seed treatment for control of wireworm and flea beetle.
 Sunflower beetle insecticide would cost about \$2 plus application.
 Red seed weevil insecticide would cost about \$6 plus application.

Confectionery Sunflower notes:

*Includes seed treatment for control of wireworm and flea beetle, \$5, and one spraying for head feeding insects (red seed weevil, lygus bug and banded moths) at about \$6 per acre. Custom application cost of \$4.75 is under "Miscellaneous." A second spraying is often needed. Insecticide for sunflower beetle would cost about \$2 plus application.

No-till Canola

No-till Flax

	Per Acre	Your Figures	Per Acre	Your Figures
Break-even Yield at Expected Market Price (lb):	1,483.9	_____	23.6	_____
Expected Market Price:	\$ 0.100	_____	\$ 5.24	_____
MARKET INCOME	148.39	_____	123.62	_____
DIRECT COSTS				
-Seed	17.60*	_____	5.40	_____
-Herbicides	20.25**	_____	17.46	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides	6.00	_____	0.00*	_____
-Fertilizer	27.62***	_____	22.78	_____
-Crop Insurance	4.40	_____	5.90	_____
-Fuel & Lubrication	8.70	_____	8.85	_____
-Repairs	9.24	_____	9.31	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	5.00	_____	5.00	_____
-Operating Interest	3.83	_____	2.89	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	102.64	_____	77.60	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	3.11	_____	3.17	_____
-Machinery Depreciation	11.23	_____	11.37	_____
-Machinery Investment	6.41	_____	6.49	_____
-Land Charge	25.00	_____	25.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	45.75	_____	46.02	_____
SUM OF ALL LISTED COSTS	148.39	_____	123.62	_____
RETURN TO LABOR & MANAGEMENT	—	_____	—	_____

Canola notes:

*Glyphosate resistant canola.

**Includes technology fee.

***Fertilizer cost includes 20 lbs sulfur at \$.265/lb.

Flax notes:

*Insecticide for late season grasshopper outbreaks would cost about \$8 per acre plus application.

No-till Field Peas

No-till Oats

	Per Acre	Your Figures	Per Acre	Your Figures
Break-even Yield at Expected Market Price (bu):	32.9	_____	77.9	_____
Expected Market Price:	\$ 3.50*	_____	\$ 1.38	_____
MARKET INCOME	115.20	_____	107.52	_____
DIRECT COSTS				
-Seed	17.25**	_____	6.50	_____
-Herbicides	17.39	_____	4.63	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	0.00	_____	18.16	_____
-Crop Insurance	4.10	_____	4.40	_____
-Fuel & Lubrication	9.25	_____	9.69	_____
-Repairs	10.10	_____	9.70	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	7.00	_____	5.00	_____
-Operating Interest	2.52	_____	2.25	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	67.61	_____	60.33	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	3.28	_____	3.47	_____
-Machinery Depreciation	12.49	_____	11.95	_____
-Machinery Investment	6.81	_____	6.77	_____
-Land Charge	25.00	_____	25.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	47.59	_____	47.18	_____
SUM OF ALL LISTED COSTS	115.20	_____	107.52	_____
RETURN TO LABOR & MANAGEMENT	—	_____	—	_____

Field Pea notes:

*Loan rate is used because it is higher than expected market price.

**Producer's own seed is used. Seed cost for new grower would be about \$27.

No-till Lentils

No-till Yellow Mustard

	Per Acre	Your Figures	Per Acre	Your Figures
Break-even Yield at Expected Market Price (lb):	979.3	_____	801.7	_____
Expected Market Price:	\$ 0.117*	_____	\$ 0.129	_____
MARKET INCOME	114.58	_____	103.42	_____
DIRECT COSTS				
-Seed	13.30	_____	6.50	_____
-Herbicides	18.89	_____	9.95	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	0.00	_____	11.64	_____
-Crop Insurance	8.20	_____	5.20	_____
-Fuel & Lubrication	9.68	_____	8.48	_____
-Repairs	10.34	_____	9.14	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	4.00	_____	5.00	_____
-Operating Interest	2.50	_____	2.17	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	66.90	_____	58.08	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	3.23	_____	3.02	_____
-Machinery Depreciation	12.56	_____	11.01	_____
-Machinery Investment	6.89	_____	6.31	_____
-Land Charge	25.00	_____	25.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	47.68	_____	45.34	_____
SUM OF ALL LISTED COSTS	114.58	_____	103.42	_____
RETURN TO LABOR & MANAGEMENT	—	_____	—	_____

Lentil notes:

*Loan rate is used because it is higher than expected market price.

No-til Safflowers

No-till Buckwheat

	Per Acre	Your Figures	Per Acre	Your Figures
Break-even Yield at				
Expected Market Price (lb):	857.5	_____	756.5	_____
Expected Market Price:	\$ 0.120	_____	\$ 0.118	_____
MARKET INCOME	102.90	_____	89.27	_____
DIRECT COSTS				
-Seed	11.25	_____	14.00	_____
-Herbicides	14.64	_____	2.75	_____
-Fungicides	0.10	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	5.26	_____	2.65	_____
-Crop Insurance	4.20	_____	0.00	_____
-Fuel & Lubrication	7.83	_____	8.57	_____
-Repairs	8.58	_____	9.18	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	5.00	_____	5.00	_____
-Operating Interest	2.20	_____	1.63	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	59.06	_____	43.77	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	2.87	_____	3.05	_____
-Machinery Depreciation	10.32	_____	11.09	_____
-Machinery Investment	5.64	_____	6.35	_____
-Land Charge	25.00	_____	25.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	43.84	_____	45.49	_____
SUM OF ALL LISTED COSTS	102.90	_____	89.27	_____
RETURN TO LABOR & MANAGEMENT	—	_____	—	_____

notes:

No-till Millet

No-till Large Chickpeas

	Per Acre	Your Figures	Per Acre	Your Figures
Break-even Yield at Expected Market Price (lb):	1,344.0	_____	1,020.5	_____
Expected Market Price:	\$ 0.065	_____	\$ 0.24	_____
MARKET INCOME	87.36	_____	244.92	_____
DIRECT COSTS				
-Seed	4.25	_____	78.00	_____
-Herbicides	4.25	_____	18.89	_____
-Fungicides	0.00	_____	49.00*	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	8.04	_____	2.25	_____
-Crop Insurance	0.00	_____	6.80	_____
-Fuel & Lubrication	8.88	_____	10.37	_____
-Repairs	9.32	_____	11.66	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	5.00	_____	10.00	_____
-Operating Interest	1.54	_____	7.25	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	41.29	_____	194.22	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	3.18	_____	3.58	_____
-Machinery Depreciation	11.40	_____	14.04	_____
-Machinery Investment	6.50	_____	8.09	_____
-Land Charge	25.00	_____	25.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	46.08	_____	50.70	_____
SUM OF ALL LISTED COSTS	87.36	_____	244.92	_____
RETURN TO LABOR & MANAGEMENT	—	_____	—	_____

Large Chickpea notes:

*Three treatments of fungicide for ascochyta blight. More treatment may be necessary. Two different chemistries should be used for fungicide resistance management.

No-till Winter Wheat

No-till Rye

	Per Acre	Your Figures	Per Acre	Your Figures
Break-even Yield at				
Expected Market Price (bu):	44.3	_____	53.6	_____
Expected Market Price:	\$ 3.04	_____	\$ 1.97	_____
 MARKET INCOME	 134.63	 _____	 105.51	 _____
 DIRECT COSTS				
-Seed	4.75	_____	4.80	_____
-Herbicides	8.13	_____	2.75	_____
-Fungicides	6.50	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	39.23	_____	27.24	_____
-Crop Insurance	3.30	_____	3.50	_____
-Fuel & Lubrication	8.82	_____	8.00	_____
-Repairs	9.37	_____	8.33	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	5.00	_____	5.00	_____
-Operating Interest	3.30	_____	2.31	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	88.40	_____	61.93	_____
 INDIRECT (FIXED) COSTS				
-Misc. Overhead	3.30	_____	2.92	_____
-Machinery Depreciation	11.54	_____	10.22	_____
-Machinery Investment	6.40	_____	5.44	_____
-Land Charge	25.00	_____	25.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	46.24	_____	43.58	_____
 SUM OF ALL LISTED COSTS	 134.63	 _____	 105.51	 _____
 RETURN TO LABOR & MANAGEMENT	 —	 _____	 —	 _____

notes:

2006 No-till Machinery List

Machine	Purch. Price	Annual Use	Years to trade	Trade in	Deprec.	Invest.	Repairs	Ac/hr
2WD 100HP Tractor	52000	400 hr	20	16813	4.40/hr	3.87/hr	5.31/hr	
2WD 160HP Tractor	85800	500 hr	15	25385	8.06/hr	5.00/hr	8.74/hr	
4WD 280HP Tractor	118100	500 hr	15	34978	11.08/hr	6.89/hr	6.88/hr	
SP Combine (base unit)	140200	250 hr	12	34889	35.10/hr	15.76/hr	22.77/hr	
Tandem Truck (used)	30000	150 hr	15	10000	8.89/hr	6.00/hr	5.33/hr	
Semi & Trailer (used)	35000	150 hr	10	10000	16.67/hr	6.75/hr	6.67/hr	
Pickup	19700	300 hr	10	4100	5.20/hr	1.79/hr	2.58/hr	
Swather 25 ft	16500	1000 ac	20	3909	0.63/ac	0.46/ac	0.29/ac	12.1
Sprayer 90 ft	25200	2500 ac	15	10334	0.41/ac	0.32/ac	0.32/ac	42.5
No-till Drill 30 ft	73500	1800 ac	12	34658	1.80/ac	1.35/ac	3.40/ac	12.7
Planter 12-30	40100	800 ac	20	12465	1.67/ac	1.50/ac	2.32/ac	10.6
Corn head 6-30	24100	400 ac	20	2325	2.72/ac	1.48/ac	0.74/ac	5.1
Grain head w/pu	10500	800 ac	15	2193	0.69/ac	0.36/ac	0.20/ac	8.5
Grain str. cut 25 ft	14200	1200 ac	10	4876	0.78/ac	0.36/ac	0.26/ac	8.5
Head w/sunf pans 25 ft	17700	400 ac	20	1867	1.98/ac	1.10/ac	0.33/ac	8.5
Grain auger	6500	50 hr	20	500	6.00/hr	3.15/hr	0.66/hr	

Example Sequence of Operations

Field operations sequence for spring wheat and durum

OP. NO.	DESCRIPTION	(FEET) WIDTH	(MPH) SPEED	(AC/HR) Fld Cap	(\$/AC) FUEL & LUBE	(\$/AC) EST. REPAIRS
1	Spray (burn-down)	90	6.0	42.5	0.25	0.45
2	Plant	30	5.0	12.7	2.34	3.94
3	Spray (postemergence)	90	6.0	42.5	0.25	0.45
4	Combine str. cut	25	4.0	8.5	2.88	2.94
	Trucks*				1.07	0.50
	Grain auger (pto)				0.15	0.01
	Pickup allocation				1.28	0.47
Total					8.22	8.76

* Truck costs will vary among crops.

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

County commissions, North Dakota State University and U.S. Department of Agriculture cooperating. Duane Hauck, director, Fargo, N.D. Distributed in furtherance of the acts of Congress of May 8 and June 30, 1914. We offer our programs and facilities to all people regardless of race, color, national origin, religion, gender, disability, age, veteran's status or sexual orientation; and are an equal opportunity institution. This publication will be made available in alternative formats for people with disabilities upon request, (701) 231-7881.

200-2-06