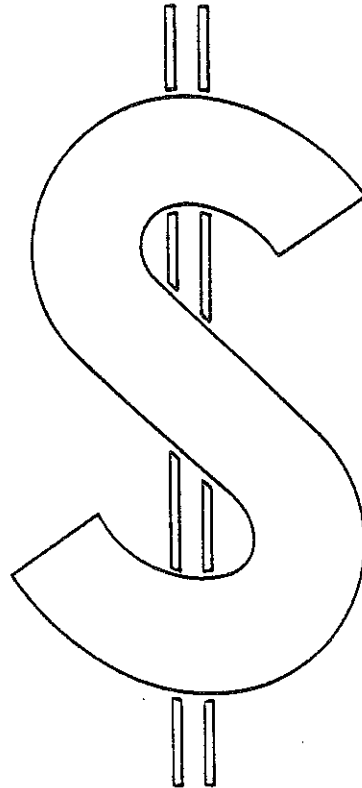
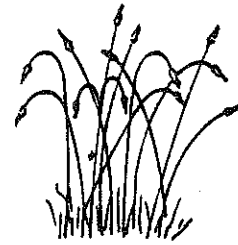


FIELD CROP ENTERPRISE BUDGETS

Cost and Returns for 1981



WAYNE A. KNOBLAUCH

Department of Agricultural Economics
New York State College of Agriculture and Life Sciences

A Statutory College of the State University
Cornell University, Ithaca, New York 14853

ENTERPRISE BUDGETS FOR SELECTED FIELD CROP EXPENSES, 1981

Crop	Corn Grain	Soybeans	Wheat	Alfalfa Timothy Hay	Corn Silage	Oats	Red Kidney Beans	Black Turtle Soup Beans
Yield Per Acre	100 bu.	30 bu.	45 bu.	4.0 T.	17 T.	80 bu.		
Enterprise Code	42	54	47	2	18	50	58	59
VARIABLE EXPENSES								
Growing								
Seed	(25000K) 17.20 (1.2 bu.)	17.30 (1.2 bu.)	13.90	8.95 ^{1/} (25000K)	15.60 (2.5 bu.)	13.25	(90 lb.) \$ 45.00	(45 lb.) \$ 33.75
Fertilizer								
Nitrogen, lbs.	(100) 32.00	(10) 3.20	(40) 12.40	(0) --	(100) 32.00	(50) 16.00	(25) 8.00	(25) 8.00
Phosphorus, lbs.	(50) 14.00	(40) 11.20	(40) 9.65	(50) 14.00	(50) 14.00	(40) 11.20	(75) 21.00	(75) 21.00
Potassium, lbs.	(50) 8.00	(40) 6.40	(40) 5.60	(135) 21.60	(50) 8.00	(40) 5.60	(50) 8.00	(50) 8.00
Lime ^{2/}	($\frac{1}{2}$ T) 14.00	14.00	14.00	14.00	14.00	($\frac{1}{2}$ T) 14.00	14.00	14.00
Chemicals	27.25	7.95	.70	4.40	27.25	.70	52.85	52.85
Power & Equipment								
Fuel, Oil & Grease	7.80	7.75	4.60	1.65	7.80	6.90	11.25	11.25
Repairs & Maintenance	4.90	4.90	2.40	.85	4.90	3.50	5.90	5.90
Other	4.00	2.70	1.35	2.80	4.00	2.65	5.30	5.30
Total Growing Cost	\$129.15	\$ 75.40	\$ 64.60	\$ 68.25	\$127.55	\$ 73.80	\$171.30	\$160.05
Harvesting								
Power & Equipment								
Fuel, Oil & Grease	\$ 4.00	\$ 4.00	\$ 4.00	\$ 12.75	\$ 10.25	\$ 4.20	6.40	6.40
Repairs & Maintenance	3.75	3.40	3.25	10.70	4.75	3.45	5.60	5.60
Other	4.00	2.65	2.65	2.80	2.00	2.65	3.55	3.55
Twine	--	--	--	10.00	--	--	--	--
Total Harvesting Cost	\$ 11.75	\$ 10.05	\$ 9.90	\$ 36.25	\$ 17.00	\$ 10.30	\$ 15.55	\$ 15.55
Selling^{3/}								
Drying	25.00	--	--	--	--	--	--	--
Other	2.60	2.00	2.00	--	--	2.00	2.00	2.00
Total Selling Cost	\$ 27.60	\$ 2.00	\$ 2.00	\$ --	\$ --	\$ 2.00	\$ 2.00	\$ 2.00
Interest on Operating Expenses ^{4/}	12.65	6.55	5.75	7.85	10.85	6.45	14.15	13.30
2 Total Selected Variable Expenses	\$181.15	\$ 94.00	\$ 82.25	\$112.35	\$155.40	\$ 92.55	\$203.00	\$190.90
4 Labor, hrs.	(6.9) 33.10	(3.8) 18.25	(3.3) 15.80	(11.7) 56.15	(8.4) 40.35	(3.3) 15.80	(4.6) 22.10	(4.6) 22.10
Total Variable Expenses	\$214.25	\$112.25	\$ 98.05	\$168.50	\$195.75	\$108.35	\$225.10	\$213.00
FIXED EXPENSES^{5/}								
Power & Equipment ^{6/}	65.85	65.85	66.25	62.05	57.65	66.25	80.20	80.20
Machinery Storage	5.45	5.45	5.45	5.45	5.45	5.45	5.45	5.45
Land Charge	(600) 66.00	66.00	66.00	66.00	66.00	66.00	66.00	66.00
Property Tax	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
Dryer	27.25	--	--	--	--	--	--	--
Total Fixed Expenses	\$176.55	\$149.30	\$149.70	\$145.50	\$143.10	\$149.70	\$163.65	\$163.65
TOTAL EXPENSES	\$390.80	\$261.55	\$247.75	\$314.00	\$336.85	\$258.05	\$388.75	\$376.65

1/ Twelve pounds of alfalfa and five pounds of timothy and all other growing expenses allocated over the four year life of the stand.

2/ Eliminate lime expense for high-lime soils.

3/ Product prices are at the farmgate and thus transportation is not included as a cost.

4/ Interest on operating expenses for 6 months at 15 percent.

5/ Represents 100 acres of each crop grown on a 500 acre farm, calculated with machinery purchased over average of last 7 years.

6/ Power and equipment includes depreciation, interest and insurance on machinery complement listed in tables 1-4 plus a pick-up truck.

INCOME AND PROFITABILITY MEASURES
FOR SELECTED FIELD CROP ENTERPRISE BUDGETS, 1981

	Corn Grain	Soybeans	Wheat	Alfalfa Timothy Hay	Corn Silage	Oats	Red Kidney Beans	Black Turtle Soup Beans
Yield per acre	100 bu.	30 bu.	45 bu.	4.0 T.	17 T.	80 bu.	18 cwt.	18 cwt.
Price per unit ^{1/}	\$2.50	\$6.00	\$3.10	\$65.00	\$20.00	\$1.70	\$23.50	\$17.00
Total	\$250.00	\$180.00	\$139.50 ^{2/}	\$260.00	\$340.00	\$136.00 ^{2/}	\$423.00	\$306.00
TOTAL VARIABLE EXPENSE ^{3/}	\$214.25	\$112.25	\$ 98.05	\$168.50	\$195.75	\$108.35	\$225.10	\$213.00
TOTAL EXPENSE	\$390.80	\$261.55	\$247.75	\$314.00	\$336.85	\$258.05	\$388.75	\$376.65
Rate of Return on Investment ^{4/}	1.6%	5.5%	2.8%	8.2%	14.4%	1.1%	18.5%	7.7%
Return Over Variable Expense	\$ 35.75	\$ 67.75	\$ 41.45	\$ 91.50	\$144.25	\$ 27.65	\$197.90	\$ 93.00
Return to Management	-\$140.80	-\$ 81.55	-\$108.25	-\$ 54.00	\$ 3.15	-\$122.05	-\$ 34.25	-\$ 70.65

1/ Sale during harvest season.

2/ Does not include value of straw.

3/ Includes labor.

4/ Land, field equipment and dryer where applicable.

Table 1. Power and Equipment Complements
and 1981 Investment Costs for Hay and Hay Crop Silage^{a/}

	New Cost	Dry Hay		Hay Crop Silage	
		Proportion Charged to Hay	Proport- ional Cost	Proportion Charged to Hay Crop Silage	Proport- ional Cost
Tractor (125 hp. with cab)	\$50,000	0.15	\$7,500	0.15	\$7,500
Tractor (60 hp.)	18,000	0.20	3,600	0.20	3,600
Plow 5-18"	9,000	0.26	540	0.06	540
Disc Harrow (16')	7,400	0.06	444	0.06	444
Spring Tooth Harrow (16')	2,100	0.06	126	0.06	126
Cultipack Seeder	3,000	1.00	3,000	1.00	3,000
Baler with Bale Thrower	8,600	1.00	8,600	--	--
Forage Harvester	12,800	--	--	0.50	6,400
Pick-up Head	3,100	--	--	1.00	3,100
Mower-Conditioner Windrower (9')	7,100	1.00	7,100	1.00	7,100
Side Delivery Rake	2,300	1.00	2,300	1.00	2,300
Hay Wagons 2 @\$2,000	4,000	1.00	4,000	--	--
Forage Wagons 2 @\$6,000	12,000	--	--	0.50	<u>6,000</u>
		Total	\$37,710		\$40,110
		Per Acre	\$377.10		\$401.10

^{a/} 500 tillable acres with 100 acres each of hay crop, corn silage, corn grain for feed, a row cash crop and a non-row cash crop.

Table 2. Power and Equipment Complements and 1981 Investment Costs
for Corn Silage and for Corn Grain and Soybeans^{a/}

	New Cost	Corn Silage		Corn Grain & Soybeans	
		Proportion Charged to Corn Silage	Propor- tional Cost	Proportion Charged to Corn & Soybeans	Propor- tional Cost
Tractor (125 hp. with cab)	\$50,000	0.15	\$7,500	0.15	\$7,500
Tractor (60 hp.)	18,000	0.20	3,600	0.20	3,600
Plow 5-18" bottoms	9,000	0.235	2,115	0.235	2,115
Planter, 4 row	7,000	0.33	2,310	0.33	2,310
Disc Harrow (16')	7,400	0.235	1,739	0.235	1,739
Spring Tooth Harrow (16')	2,100	0.235	494	0.235	494
Cultivator, 4 row	2,300	0.33	759	0.33	759
Forage Harvester	12,800	0.50 ^{b/}	6,400	--	--
2-Row Corn Head	4,000	1.00	4,000	--	--
Forage Wagons 2 @\$6,000	12,000	0.50 ^{b/}	6,000	--	--
Combine (diesel, cab, 4-row corn head or 13' grain head)	55,000	--	--	0.33	18,150
Grain Wagons 2 @\$2,500	5,000	--	--	0.33	1,650
		Total	\$34,917		\$38,317
		Per Acre	\$349.17		\$383.17

a/ 500 tillable acres with 100 acres each of hay crop, corn silage, corn grain for feed, a row cash crop and a non-row cash crop.

b/ Hay is harvested as hay crop silage; otherwise, proportion charged to corn silage would be 1.0.

Table 3. Power and Equipment Complement
and 1981 Investment Costs for Oats and Wheat^{a/}

Item	New Cost	Proportion Charged to Oats and Wheat	Proportional Cost
Tractor (125 hp. with cab)	\$50,000	0.15	\$ 7,500
Tractor (60 hp.)	18,000	0.20	3,600
Plow 5-18" bottoms	9,000	0.235	2,115
Disc Harrow (16')	7,400	0.235	1,739
Spring Tooth Harrow (16')	2,100	0.235	494
Grain Drill, 18 x 7	5,100	1.00	5,100
Combine (diesel, cab, 13' grain head)	55,000	0.33	18,150
Grain Wagons 2 @\$2,500	5,000	0.33	<u>1,650</u>
		Total	\$40,348
		Per Acre	\$403.48

^{a/} 500 tillable acres with 100 acres each of hay crop, corn silage, corn grain for feed, a row cash crop and a non-row cash crop.

Table 4.

Power and Equipment Complement
and 1981 Investment Costs for Red Kidney
Black Turtle Soup Beans^{a/}

Item	New Cost	Proportion Charged to Beans	Proportional Cost
Tractor (125 hp with cab)	\$50,000	0.15	\$ 7,500
Tractor (60 hp)	18,000	0.20	3,600
Plow 5-18" bottoms	9,000	0.235	2,115
Planter	7,000	0.33	2,310
Disc Harrow (16')	7,400	0.235	1,739
Spring Tooth Harrow (16')	2,100	0.235	494
Cultivator (4 row)	2,300	0.33	759
Bean Combine ^{b/} (44")	19,000	1.00	19,000
Puller & Divider ^{b/}	3,200	1.00	3,200
Windrower ^{b/}	6,800	1.00	6,800
Wagons 2 @\$2,500	5,000	0.33	<u>1,650</u>
Total			\$49,167
Per Acre			\$491.67

^{a/} 500 tillable acres with 100 acres each of hay crop, corn silage, corn grain for feed, a row cash crop and a non-row cash crop.

^{b/} If a direct harvest head is used, substitute the self-propelled combine proportional cost of \$15,200 plus \$10,000 for the direct harvest head.

FIELD CROP ENTERPRISE BUDGET

Crop Enterprise _____	Yield Level _____				
	Selected Variable Expense	Unit	Units Required	Cost Per Unit	Per Acre Expense
<u>Growing</u>					
Seed	_____	_____	_____	_____	_____
Fertilizer:					
Nitrogen	lbs.	_____	_____	_____	_____
Phosphorus, P ₂ O ₅	lbs.	_____	_____	_____	_____
Potassium, K ₂ O	lbs.	_____	_____	_____	_____
Lime	_____	_____	_____	_____	_____
Chemicals	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
Power & Equipment:					
Fuel, Oil & Grease	_____	_____	_____	_____	_____
Repairs & Maintenance	_____	_____	_____	_____	_____
Other	_____	_____	_____	_____	_____
Total Growing Cost					\$ _____
<u>Harvesting</u>					
Power and Equipment:					
Fuel, Oil & Grease	_____	_____	_____	_____	_____
Repairs & Maintenance	_____	_____	_____	_____	_____
Other ^a	_____	_____	_____	_____	_____
Total Harvesting Cost					\$ _____
<u>Selling</u>					
Truck, Tractor & Equipment	_____	_____	_____	_____	_____
Drying	_____	_____	_____	_____	_____
Marketing & Transportation	_____	_____	_____	_____	_____
Other	_____	_____	_____	_____	_____
Total Selling Cost					\$ _____
Total Growing, Harvesting & Selling Costs					\$ _____
<u>Interest on Operating Capital</u>					
Total (from above) + 2	=	_____			
Short-term interest rate	x	_____			
Interest on Operating Capital	=	_____			
TOTAL SELECTED VARIABLE EXPENSES					_____

^a Examples include twine for baled hay and urea for corn silage + NPN

CROP SELECTION CONSIDERATIONS

1. ADAPTABILITY TO SOILS AND CLIMATE
2. PRODUCTION MANAGEMENT EXPERTISE
3. RELATIVE YIELDS
4. PRODUCTION COSTS
 - a. PER ACRE
 - b. TIMING OF CASH FLOW
5. TIMELINESS OF FIELD OPERATIONS
 - a. PLANTING COMPETITION
 - b. HARVESTING COMPETITION
6. ROTATIONS
 - a. EROSION CONTROL
 - b. SOIL STRUCTURE
 - c. FERTILIZATION LEVELS
 - d. CROP YIELDS
7. MARKET
8. PRODUCT PRICES & VARIABILITY
9. STORAGE CAPACITY