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ECONOMIC PROFILES FOR CORN, HAY AND PASTURE

by

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INTRODUCTION

In April of 1980 Senate Bill 8923--A and Assembly Bill 11551--A was enacted by the New York Legislature which altered the procedures for valuing qualified farm land. The valuation procedure was changed from a market base to income capitalization. The legislation stipulates that the land classification system be administered by the New York Department of Agriculture and Markets. The State Division of Equalization and Assessment is to calculate land values using the income capitalization approach based on economic profiles developed by the College of Agriculture and Life Sciences at Cornell University.

The purpose of this document is to explain briefly how faculty of the Department of Agricultural Economics at Cornell University constructed economic profiles for corn and hay. A description of the construction of one economic profile using a series of tables that contain the most important parameters utilized dominates the discussion. In this document, the term "economic profile" refers to the information required to determine the return to land for one high- or low-lime soil group.

In total, 14 economic profiles were constructed for eight soil groups. Soil Groups I through VI have an economic profile for high-lime and another for low-lime soil mapping units. Soil Groups VII and VIII have an economic profile for low lime only since high-lime soil mapping units are almost nonexistent. For all except Soil Group VIII, the economic profile consists of an enterprise budget for corn and an enterprise budget for hay with the net income for the total economic profile being weighted on the specified rotation.

The enterprise budgets utilized in construction of the economic profile were constructed using the economic engineering approach. In this approach, enterprise budgets are designed to be representative of the internal and external characteristics of an average farm in the state. The principal internal characteristic in this case was the soil group; however, other internal characteristics of importance include crop acres, acreages of each crop, the machinery complement and a specification of an average level of management. The external characteristics were

incorporated through the use of average state input and output prices. The budgets, consequently, are not an average of actual observations; however, nearly all of the data used in constructing enterprise budgets is based wholly or partially upon actual observation and collection of information.

For each crop two sets of budgets were prepared. The first was constructed for the year 1979. Second, in order to compute a five-year average for 1975-1979, input prices were indexed using indices published in Agricultural Prices. Output prices were based on data contained in New York Agricultural Statistics. The same input levels and yields were used for the 1979 and 1975-1979 enterprise budgets.

The years 1975-1979 were used as the basis for determination of net returns to land for two reasons. First, use of data for only one year could lead to wide fluctuations in net returns because of changes in prices and costs. The five-year average was chosen to be consistent with the five-year average effective interest rate on new Federal Land Bank loans made in the Springfield District to be used as the capitalization rate as defined in the 1980 Agricultural Districts legislation. Second, the 1975-1979 time period was the most recent possible as data for the 1980 crop year were not available to meet deadlines for computing 1981 agricultural values.

Agricultural values calculated for upstate mineral soils by the State Division of Equalization and Assessment draw upon not only returns from corn and hay, but also apples and grapes. Information on the procedure for determination of agricultural values is contained in Report on the Proposed 1981 Farmland Use Values for Agricultural Value Assessment in New York by the State Board of Equalization and Assessment, January 9, 1981.

CONSTRUCTION OF ECONOMIC PROFILES

The methodology is illustrated by describing the procedure used to construct an economic profile for Soil Group I, low lime (page 30). Although the discussion focuses primarily on this economic profile, it is general enough to indicate how the procedure was used. Tables containing supporting information follow this section and are referenced throughout the discussion. The 14 economic profiles are in the final section on pages 28-42.

Yield

For each soil group the yields for corn silage and hay were obtainable under average management. The basis for these yields was specified for each soil mapping unit by Professor W. Shaw Reid and represents an obtainable prudent management yield. These yields were derived from Soil Conservation Service Form 5 information, Cornell research and from other information available to Professor Reid. The yields from the individual soil mapping units were utilized to obtain an average yield for each soil group representing prudent management. These averages were then multiplied by a factor to obtain average yields under conditions of average management. The factors are listed in Table 14. The difference between these factors and 1.0 represents the yield reduction due to harvesting loss, field size loss (the need for headlands, etc.) and the conversion from prudent to average management. As can be seen in the budgets, the yields for Soil Group I are 18.3 tons of corn silage per acre and 3.8 tons of dry hay per acre. The yields are the same for high lime and low lime on a given soil group. The yields for all soil groups are listed in Table 10.

Price

Since a large proportion of the hay and corn crops produced in New York State are fed to livestock on the farm, the determination of a price for these crops was difficult. The procedure chosen was to use published prices to obtain a price that could be obtained for the product at harvest time as it is ready to leave the farm. The prices used for corn silage are listed in Table 4. The unadjusted weighted price came from the weighted average of corn silage and corn grain prices, based on acreage in the state

of each, converted to a corn silage price. These prices came from New York Agricultural Statistics. Adjustments to this price were required to represent a farmgate price. The adjustment in the corn silage price was to include the cost of a silo for storage since the published price represents the price of the corn silage in a silo. The corn grain price was adjusted for the cost of moving it from the farmgate to market and a drying cost for half of the crop that did not already have a drying cost included in the net price. The adjustment was calculated for 1979 and then indexed to represent 1975-1979. This farmgate adjustment was subtracted from the average unadjusted price for 1975-1979 and used for corn grown on all soil groups.

Hay prices are listed in Table 5. These were based on prices for "alfalfa hay baled" published in New York Agricultural Statistics. The average harvest time prices as published were \$56.50 per ton for 1979 and \$56.85 per ton for the five-year average. The quality of the hay crop was determined by the quality of the soil. Since better quality soils can support higher percentages of legumes, an adjustment was made in the price to reflect this quality differential. This price was used as a basis and adjusted for the protein and energy content of the hay; prices of corn grain and soybean meal were used to scale the hay crop price for changes in quality. Consequently, the price per ton is different for each of the Soil Groups except Soil Group II and III which both have 75 percent legume. The hay price for 1975-1979 used in Soil Group I is \$61.25.

The value of production or the total revenue from an acre of corn or hay crop was the yield times the price. This value of production is the final row under income and was \$283.65 for corn and \$232.75 for hay for the five-year average for Group I soils (page 30).

Growing Expenses

The input levels and consequently the resulting growing expenses depend on two factors. The first is the yield just discussed; the second is the crop rotation for each soil group. In the second column of Table 7, the number associated with C is the number of years in 10 that corn is grown and the number associated with H is the number of years in 10 that

hay is grown. In Soil Group I there is a rotation of seven years of corn followed by three years of hay.

Seed expense was calculated using the seeding rates shown in Table 6. For corn the seeding rate for all soil groups was 25,000 kernels planted per acre. Using the price of seed corn in Table 9, the cost can be determined easily. Seeding costs for hay were more difficult since the establishment cost must be determined and then divided by the years of life of the stand. For the first four soil groups, an alfalfa-timothy mixture was seeded while on Soil Groups V through VII a birdsfoot trefoil-timothy mixture was seeded. Cost was determined using the seeding rates multiplied by the prices in Table 9 divided by the number of years of life of the stand.

Fertilizer prices in Table 9 were multiplied by the quantities applied (Table 7) to determine fertilizer cost. For corn, the calculation was straightforward, the number of pounds of nitrogen, potassium and phosphorus multiplied by their prices. For hay the calculation was more difficult as the total cost of fertilizer for the years in rotation must be determined and then divided by the number of years of life of the stand. As an example, for Soil Group I the first year 60 pounds of phosphorus and potassium were required while in the second and third years 40 pounds of phosphorus and 160 pounds of potassium were needed. The costs for phosphorus as an example would then be $60 + 40 + 40 = 140$ divided by 3 equals 46.67 multiplied by the per pound price for phosphorus.

Lime is the next expense and was included as one-half ton per year multiplied by the price of lime contained in Table 9. No lime is required on high lime soils.

Chemical cost was obtained utilizing the chemical application program specified in Table 8 multiplied by the associated prices in Table 9. The average cost per year was determined by finding the total cost for the years of life of the stand of hay or for the years corn was grown in the rotation. This total was then divided by the number of years of hay or corn in the rotation. For hay on Class I soil, the chemical program is premerge in the establishment year and

methoxychlor each year. The cost of these four chemical applications was summed and divided by three. For corn, the cost of the chemical program indicated in Table 8 for years one, two, and three through seven was summed and divided by seven to attain the \$17.85 average annual cost.

Power and equipment costs of fuel, oil and grease; repairs and maintenance; and "other" costs were calculated using the economic engineering approach. Information in An Economic Analysis of New York Field Crop Enterprises was used. The fuel, oil and grease expense was taken directly from that publication for Soil Group I; repairs and maintenance costs were increased to account for the nine-year average life of the machinery complement used for economic profiles as contrasted with the seven-year average life of the machinery in that publication. "Other" costs were taken directly from that publication.

Fuel, oil and grease and repairs and maintenance were increased by five percent in Soil Groups III and IV, by 10 percent in Soil Groups V and VI, and by 15 percent in Soil Groups VII and VIII to reflect the increased costs of machinery operation with steeper slopes and/or poorer drainage as the soil quality declines. The power and equipment costs for growing hay were constant except for the increase because of slope and/or drainage for the establishment year. This cost was calculated and then divided by the years of life of the stand.

Harvesting Expenses

Harvesting expenses were calculated in a similar manner to power and equipment expenses for growing. Fuel, oil and grease and repairs and maintenance were again constructed using the economic engineering approach; however, for harvesting, the cost depended upon the harvesting system and quantities harvested. For corn the fuel, oil and grease and repairs and maintenance costs were based on the costs in An Economic Analysis of New York Field Crop Enterprises (with repairs and maintenance increased to reflect change in years of life) with adjustments for the yield in each soil group. Again, all fuel, oil and grease and repairs and maintenance costs were increased as indicated above to reflect slope and/or drainage. These costs plus baler twine for hay were determined

primarily by the number of cuttings. As indicated in Table 10, three cuttings are specified for Soil Groups I - III, two cuttings for Soil Groups IV and V and one cutting for Soil Groups VI and VII.

Other Variable Costs

The remaining variable costs are interest on operating capital, management charge and labor. The interest on operating capital is a charge for the capital required to purchase inputs for growing the crop. The charge is for an average of six months from planting until harvest and is charged at the short-term interest rate of Production Credit Associations in the Springfield District (Table 12).

The charge for operator labor and management, his/her family and any hired labor is included in two parts. The first is a management charge to compensate the operator or operators of the farm for his/her management input. This charge is five percent of the total value of production. The second charge is for the hours of labor invested in the production and harvesting of the crop. The labor requirements are listed in Table 10.

Fixed Expenses

An important expense for any crop production enterprise is the machinery which must be purchased to plant and harvest the crop. Machinery investments are fixed costs since this machinery must be available whether it is utilized or not. The procedure used to determine the fixed costs for corn and hay is outlined below utilizing the information in Tables 1 and 2.

Upon examination of the rotations on each of the eight soil groups, an average farm has 150 acres of hay, 120 acres of corn and 30 acres of pasture, for a total of 300 crop acres. Table 1 contains the machinery complement and the allocation of the different items of machinery to the corn silage, hay and pasture enterprises. These proportions were then used to calculate the total and per acre cost (1979 new cost) for each of the three enterprises.

The fixed cost per year was then determined (Table 2) using this 1979 new investment cost for each crop. The cost indices in Table 11 were used to calculate the average investment cost of the machinery complement on the farm for the 1979 crop year and the average of the 1975-1979 crop years. This index was based on a machinery complement purchased evenly over the preceding nine years. The 1979 index was multiplied by the 1979 new investment cost to obtain the average investment cost for the 1979 crop year. The 1975-1979 index was used for converting the 1979 new machinery complement investment back to a 1975-1979 average as was calculated for the 1979 crop year.

Annual fixed cost is composed of depreciation, interest and insurance. Depreciation is the annual charge for the use of the machinery. It was calculated using straight line depreciation for the nine-year life with a 10 percent salvage value. The interest on investment represents the fact that if the farmer had not invested in machinery, he/she could have put that money someplace else and obtained a return. It was calculated using the interest rate of 11.28 percent for 1979 and 9.45 percent for the 1975-1979 average, multiplied by the average investment cost. The insurance charge is 1.5 percent of the average investment.

Table 3 contains further information on fixed costs. The first item is the cost of machinery storage to house the equipment complement listed in Table 1 and which is charged on a per acre basis to each of the three enterprises. Again, depreciation, interest and insurance are charged on a building that was built, on the average, over a 15-year period. The fixed cost of the electric fencing was used in the pasture enterprise (Soil Group VIII) and the cost reflected accordingly. The fixed cost information on the corn silage storage was used as previously described for calculating the price of corn silage.

Return to Land

The total expenses were derived by adding total growing, total harvesting, interest on operating capital, management charge, labor and fixed costs less property tax. This total was then subtracted from the value of production to obtain the return to land less property taxes.

The return to land for corn and hay for the 1975-1979 crop years were then weighted by the rotation indicated in Table 7 to obtain a weighted average return to land. Based upon the weighted average return to land and the capitalization rate, a property tax charge at a rate indicated in Table 13 was deducted to yield net return to land.

SUPPORTING INFORMATION

TABLES 1 - 14

TABLE 1.

INVESTMENT IN POWER AND EQUIPMENT COMPLEMENT FOR CORN SILAGE,
HAY AND PASTURE PRODUCTION ON 300 ACRES, ALLOCATED TO ENTERPRISES,
1979 NEW COST

Item	1979 New Cost \$	Corn Silage		Hay		Pasture	
		Proportion	Cost \$	Proportion	Cost \$	Proportion	Cost \$
Tractor, 2-wheel drive, 90 hp.	21,000	.49	10,290	.49	10,290	.02	420
Tractor, 2-wheel drive, 50 hp.	12,000	.53	6,360	.43	5,160	.04	480
Tractor, 2-wheel drive, 35 hp.	9,000	.29	2,610	.71	6,390	--	--
Plow, semi-mounted, 4-16" bottoms	4,500	.78	3,510	.20	900	.02	90
Disc harrow, 12'	3,700	.78	2,886	.20	740	.02	74
Springtooth harrow, 16'	1,700	.78	1,326	.20	340	.02	34
Cultipacker 12'	1,200	.78	936	.20	240	.02	24
Corn planter, 4-row	5,000	1.0	5,000	--	--	--	--
Cultivator, 4-row	1,800	1.0	1,800	--	--	--	--
Sprayer	2,000	.62	1,240	.38	760	--	--
Cultipack seeder 10'	2,500	--	--	.91	2,275	.09	225
Fertilizer spreader, 12'	1,400	--	--	.83	1,162	.17	238
Mower-conditioner, windrower, 9'	5,400	--	--	1.0	5,400	--	--
Side delivery rake	1,800	--	--	1.0	1,800	--	--
Baler with bale thrower	7,200	--	--	1.0	7,200	--	--
Bale wagons, 3 @ \$1,600	4,800	--	--	1.0	4,800	--	--
Forage harvester with 2-row crophead	8,200	1.0	8,200	--	--	--	--
Forage wagons, 2 @ \$5,000	10,000	1.0	10,000	--	--	--	--
Pickup truck, 1/2 ton	6,100	.40	2,440	.50	3,050	.10	610
Total	\$109,300		\$56,598		\$50,507		\$2,195
Per Acre ^{1/}			\$ 472		\$ 337		\$ 73

^{1/} Based on 120 acres of corn, 150 acres of hay and 30 acres of pasture on a 300 acre farm.

TABLE 2.
ANNUAL FIXED COSTS OF THE POWER AND EQUIPMENT COMPLEMENT
ALLOCATED TO ENTERPRISES
CROP YEARS 1979 and 1975-1979 AVERAGE

	Corn		Hay		Pasture	
	1979	1975-1979	1979	1975-1979	1979	1975-1979
INVESTMENT ^{1/}	\$37,921	\$31,129	\$33,840	\$27,779	\$1,471	\$1,207
ANNUAL FIXED COSTS						
DEPRECIATION ^{2/}	\$ 3,792	\$ 3,113	\$ 3,384	\$ 2,778	\$ 147	\$ 121
INTEREST ^{3/}	\$ 2,353	\$ 1,618	\$ 2,099	\$ 1,444	\$ 91	\$ 63
INSURANCE ^{4/}	\$ 569	\$ 467	\$ 508	\$ 417	\$ 22	\$ 18
TOTAL	\$ 6,714	\$ 5,198	\$ 5,991	\$ 4,639	\$ 260	\$ 202
PER ACRE	\$ 55.95	\$ 43.30	\$ 39.95	\$ 30.95	\$ 8.65	\$ 6.75

^{1/} Index factor of 0.67 for 1979 and 0.55 for 1975-1979 average to convert 1979 new cost to crop years average.

^{2/} Nine-year life with a 10 percent salvage value, straight line depreciation.

^{3/} Interest rate of 11.28 percent for 1979 and 9.45 percent for 1975-1979 on average investment.

^{4/} Insurance rate of 1.5 percent of investment.

TABLE 3.
INVESTMENT AND ANNUAL FIXED COSTS OF MACHINERY STORAGE,
CORN SILAGE STORAGE AND ELECTRIC FENCING

	1979 New Cost	1979 Crop Year ^{1/}	1975-1979 Crop Years Average ^{1/}
MACHINERY STORAGE			
Pole barn; three exterior walls, metal roofing, dirt floor, 6,000 sq. ft.	\$15,400	\$8,932	\$7,854
Depreciation ^{2/}	---	595	524
Interest ^{3/}	---	504	371
Insurance ^{4/}	---	134	118
Total		\$1,233	\$1,013
Per Acre		\$ 4.10	\$ 3.40
CORN SILAGE STORAGE			
Concrete stave silo; including site preparation and roof, 24' x 70'	\$21,200	\$12,296	\$10,812
Depreciation ^{2/}	---	820	721
Interest ^{3/}	---	693	511
Insurance ^{4/}	---	184	162
Total		\$ 1,697	\$ 1,394
Per Ton		\$ 2.10	\$ 1.70
ELECTRIC FENCING			
Electric fencer, wire, posts, post insulators & handles	\$ 550	\$ 319	\$ 280
Depreciation ^{2/}	---	21	19
Interest ^{3/}	---	18	13
Total		\$ 39	\$ 32
Per Acre		\$ 1.30	\$ 1.05

^{1/} Index factor of 0.58 and 0.51 used to convert 1979 new cost to crop years 1979 and 1975-1979 average.

^{2/} Fifteen-year life, straight line depreciation.

^{3/} Interest is 11.28 percent for 1979 and 9.45 for 1975-1979 on average investment.

^{4/} Insurance rate of 1.5 percent of investment.

TABLE 4.
FARMGATE CORN SILAGE PRICES

Year	Unadjusted Weighted Price ^{1/}	Adjustments ^{2/}	Weighted Farmgate Prices
	\$/ton	\$/ton	\$/ton
1975	16.75	--	--
1976	17.00	--	--
1977	15.45	--	--
1978	16.05	--	--
1979	18.05	1.60	16.45
1975-1979	16.65	1.15 ^{3/}	15.50

^{1/} Weighted average of corn silage and corn grain prices based on acreage in the state of each and converted to a silage price.

^{2/} Adjustments include: storage costs for corn silage, marketing and transportation costs for corn grain and drying costs for one-half of the corn grain. These adjustments are also weighted based on acreage in the State and converted to a silage price. Not calculated for years 1975-1978.

^{3/} Computed using cost index factors.

TABLE 5.
HAY PRICES ADJUSTED FOR QUALITY DIFFERENTIALS
BY SOIL GROUP

Soil Group	Percent Legume	Crude Protein	Net Energy	Price ^{1/}	
				1979	1975-1979
		Percent of Dry Matter	Mcal/lb. of Dry Matter	--Dollars Per Ton--	
I	80	16.50	.576	60.90	61.25
II & III	75	16.10	.570	59.75	60.10
IV	70	15.75	.564	58.70	59.05
V	60	15.00	.552	56.50	56.85
VI	40	13.50	.528	52.10	52.45
VII	30	12.75	.516	49.95	50.25
VIII	20	12.00	.504	47.75	48.05

^{1/} Using a harvest time price of \$56.50/ton for crop year 1979 and \$56.85/ton for 1975-1979 crop years, average prices were adjusted for crop quality based on percentage legume. Alfalfa hay price was specified to be 60 percent legume and adjusted for quality using corn grain and soybean meal prices.

TABLE 6.
SEEDING RATES FOR CORN AND HAY

Crop	Soil Group	Rate
Corn	I-VII	25,000 Kernels Planted Per Acre
Hay		
Alfalfa-Timothy	I-IV	12# Alfalfa and 5# Timothy
Birdsfoot Trefoil-Timothy	V-VIII	8# Birdsfoot Trefoil & 4# Timothy

TABLE 7.
FERTILIZATION RATES FOR CORN AND HAY
BY SOIL GROUP

Soil Group	Rotation	Corn	Hay ^{1/}
		N--P--K	N--P--K
I	C ₇ H ₃	90-60-60	0-40-160
II	C ₆ H ₄	85-60-60	0-40-160
III	C ₅ H ₅	75-60-60	0-40-120
IV	C ₅ H ₅	75-60-60	0-40-120
V	C ₄ H ₆	60-60-60	0-30-60
VI	C ₃ H ₇	50-60-60	0-30-60 ^{2/}
VII	C ₂ H ₈	30-60-60	0-30-60 ^{2/}
VIII	C ₀ H ₁₀	-- -- --	30-30-30

^{1/} Establishment year fertilization is 0-60-60.

^{2/} Years 7 and 8 fertilization is 30-30-30.

TABLE 8.

CHEMICAL APPLICATIONS FOR CORN AND HAY

Crop	Soil Group(s)	Year(s)	Chemical(s)	Rate Per Acre
Hay	I-VIII	1	Premerge	1-1/3 qt. at seeding
	I-IV	All	Methoxychlor	1 qt. per year
Corn ^{1/}	I	1	Atrazine	2# preplant and 2# with 1 qt. oil post emergence
		2	Atrazine	2# with 1 qt. oil post emergence
		3-7	Sutan +6.7E	4-3/4 pt. preplant and double incorporate
			Furadan	10 pounds
	II-V		Same as Group I, less years in 3-7	
	VI	1&2	Same as Group I	
		3	Atrazine & Sutan +6.7E	1# Atrazine and 4-3/4 pt. Sutan +6.7E post emergence
			Furadan	10 pounds
	VIII	1	Same as Group I	
		2	Sutan +6.7E	6 pt. preplant and double incorporate

^{1/} Planter box treatment 1 ounce of Captan and 1 ounce of Diazanone per seed unit all years, all soil groups.

TABLE 9.

SEED, FERTILIZER AND LIME, AND CHEMICAL COSTS, 1979

Item	Cost
<u>Seed</u>	
Corn	\$55.00/80,000 Kernels
Alfalfa	\$ 2.45/lb.
Birdsfoot Trefoil	\$ 4.65/lb.
Timothy	\$ 1.35/lb.
<u>Fertilizer & Lime</u>	
Nitrogen	\$ 0.23/lb.
Phosphorus	\$ 0.22/lb.
Potassium	\$ 0.13/lb.
Lime	\$29.00/ton spread
<u>Chemicals</u>	
Premerge	\$11.45/gal.
Methoxychlor	\$10.15/gal.
Atrazine	\$11.50/gal.
Crop Oil	\$ 7.20/gal.
Sutan + 6.7E	\$19.30/gal.
Furadan	\$ 0.92/lb.
Captan	\$ 1.80/lb.
Diazanone	\$ 4.00/lb.

TABLE 10.
LABOR REQUIREMENTS FOR CORN AND HAY
BY SOIL GROUP AND YIELD

Soil Group	Corn		Hay	
	Yield	Labor	Yield	Labor ^{1/}
	T/Ac.	Hrs./Ac.	T/Ac.	Hrs./Ac.
I	18.3	6.2	3.8	7.7
II	17.0	6.1	3.5	7.4
III	15.1	5.9	3.1	7.1
IV	12.9	5.8	2.6	5.4
V	11.9	5.7	2.3	5.2
VI	10.3	5.5	1.9	3.8
VII	8.8	5.4	1.5	3.4
VIII	--	--	1.0	1.0 ^{2/}

^{1/} Soil Groups I-III, three cuttings per year; IV and V two cuttings per year and VI and VII one cutting per year.

^{2/} Pasture

TABLE 11.

INDEX FACTORS USED TO CONVERT 1979 INVESTMENT COSTS
TO CROP YEARS 1979 AND 1975-1979 AVERAGE
AND 1979 PRODUCTION COSTS TO 1975-1979 CROP YEAR AVERAGE

Item	Index Factor	
	1979	1975-1979
Investments		
Power & Equipment	0.67	0.55
Building & Fencing Materials	0.58	0.51
Production Costs		
Seed	--	0.91
Fertilizer & Lime	--	0.98
Chemicals	--	1.05
Fuels	--	0.76
Wages	--	0.81
Items Used for Production	--	0.84
Power & Equipment Repairs	--	0.83

TABLE 12.

SHORT-TERM INTEREST RATES OF PRODUCTION CREDIT ASSOCIATIONS
IN SPRINGFIELD DISTRICT, AVERAGE EFFECTIVE RATE
OF 5 AND 10 PERCENT STOCK REQUIREMENTS

Year	Interest Rate
	---%---
1979	11.28
1978	9.12
1977	8.44
1976	8.77
1975	9.64
1975-1979 Average	9.45

TABLE 13.
MISCELLANEOUS ITEMS

Item	Cost
Labor, 1979	\$4.25/hour
Custom Fertilizer	
Application, Side Dress	
Nitrogen on Corn, 1979	\$5.00/acre
1975-1979	\$3.00/acre
Management Charge, All Crop Years	5% of value of production
Property Tax Rate, 1975-1979	\$1.65/\$100 of market value
Fuel, oil & grease and repairs and maintainance are increased for Soil Group III & IV by 5%, V & VI by 10% and VII and VIII by 15% to account for increased cost of machinery operation on steeper slopes and wetter soils.	

TABLE 14.
FACTORS FOR CONVERTING PRUDENT MANAGEMENT YIELD
TO AVERAGE HARVESTED YIELD PER CROP ACRE BY SOIL GROUP^{1/}

Soil Group	Corn	Hay & Pasture
I	0.75	0.67
II	0.73	0.65
III	0.71	0.63
IV	0.69	0.61
V	0.67	0.59
VI	0.65	0.57
VII	0.63	0.55
VIII	--	0.48

^{1/} Factors were multiplied by prudent management yields to obtain average harvested yield per crop acre. The factors are comprised of three components: harvesting loss, field size loss and conversion from prudent to average management.

ECONOMIC PROFILES
SOIL GROUPS I - VIII

SOIL GROUP I
7 CORN - 3 HAY
High Lime

	Corn		Hay	
	1979	1975-1979	1979	1975-1979
INCOME				
Yield (Tons/Acre)	18.3	18.3	3.8	3.8
Price (\$/Ton)	16.45	15.50	60.90	61.25
Value of Production	\$301.05	\$283.65	\$231.40	\$232.75
VARIABLE EXPENSES				
<u>Growing</u>				
Seed	17.20	15.65	12.05	10.95
Fertilizer				
Nitrogen	20.70	20.30	0.00	0.00
Phosphorus	13.20	12.95	10.25	10.05
Potassium	7.80	7.65	16.45	16.15
Custom Application	5.00	3.00	0.00	0.00
Lime	--	--	--	--
Chemicals	17.85	18.75	3.80	4.00
Power & Equipment				
Fuel, Oil & Grease	5.00	3.80	1.40	1.05
Repair & Maintenance	4.40	3.65	1.00	0.85
Other	2.20	1.85	3.05	2.55
Total Growing	\$93.35	\$87.60	\$48.00	\$45.60
<u>Harvesting</u>				
Power & Equipment				
Fuel, Oil & Grease	6.40	4.85	7.75	5.90
Repair & Maintenance	4.55	3.80	9.90	8.25
Twine	--	--	4.55	3.85
Other	1.65	1.40	2.30	1.95
Total Harvesting	\$12.60	\$10.05	\$24.50	\$19.95
<u>Interest on Operating Capital</u>	6.00	4.60	4.10	3.10
<u>Management Charge</u>	15.05	14.20	11.55	11.65
<u>Labor</u>	26.35	21.35	32.70	26.50
TOTAL VARIABLE EXPENSES	\$153.35	\$137.80	\$120.85	\$106.80
FIXED EXPENSES				
Power & Equipment	55.95	43.30	39.95	30.95
Machinery Storage	4.10	3.40	4.10	3.40
TOTAL FIXED EXPENSES (less property tax)	\$60.05	\$46.70	\$44.05	\$34.35
TOTAL EXPENSES	\$213.40	\$184.50	\$164.90	\$141.15
RETURN TO LAND (less property tax)	\$87.65	\$99.15	\$66.50	\$91.60
ROTATION WEIGHTED AVERAGE				
RETURN TO LAND, 1975-1979 Average		\$96.90		
Property Tax		-15.30		
RETURN TO LAND		\$81.60		

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SOIL GROUP I
7 CORN - 3 HAY
Low Lime

	Corn		Hay	
	1979	1975-1979	1979	1975-1979
INCOME				
Yield (Tons/Acre)	18.3	18.3	3.8	3.8
Price (\$/Ton)	16.45	15.50	60.90	61.25
Value of Production	\$301.05	\$283.65	\$231.40	\$232.75
VARIABLE EXPENSES				
<u>Growing</u>				
Seed	17.20	15.65	12.05	10.95
Fertilizer				
Nitrogen	20.70	20.30	0.00	0.00
Phosphorus	13.20	12.95	10.25	10.05
Potassium	7.80	7.65	16.45	16.15
Custom Application	5.00	3.00	--	--
Lime	14.50	14.20	14.50	14.20
Chemicals	17.85	18.75	3.80	4.00
Power & Equipment				
Fuel, Oil & Grease	5.00	3.80	1.40	1.05
Repair & Maintenance	4.40	3.65	1.00	0.85
Other	2.20	1.85	3.05	2.55
Total Growing	\$107.85	\$101.80	\$62.50	\$59.80
<u>Harvesting</u>				
Power & Equipment				
Fuel, Oil & Grease	6.40	4.85	7.75	5.90
Repair & Maintenance	4.55	3.80	9.90	8.25
Twine	--	--	4.55	3.85
Other	1.65	1.40	2.30	1.95
Total Harvesting	\$12.60	\$10.05	\$24.50	\$19.95
<u>Interest on Operating Capital</u>	6.80	5.30	4.90	3.75
<u>Management Charge</u>	15.05	14.20	11.55	11.65
<u>Labor</u>	26.35	21.35	32.70	26.50
TOTAL VARIABLE EXPENSES	\$168.65	\$152.70	\$136.15	\$121.65
FIXED EXPENSES				
Power & Equipment	55.95	43.30	39.95	30.95
Machinery Storage	4.10	3.40	4.10	3.40
TOTAL FIXED EXPENSES	\$60.05	\$46.70	\$44.05	\$34.35
(less property tax)				
TOTAL EXPENSES	\$228.70	\$199.40	\$180.20	\$156.00
RETURN TO LAND				
(less property tax)	\$72.35	\$84.25	\$51.20	\$76.75
ROTATION WEIGHTED AVERAGE				
RETURN TO LAND, 1975-1979 Average		\$82.00		
Property Tax		12.95		
RETURN TO LAND		\$69.05		

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SOIL GROUP II
6 CORN - 4 HAY
High Lime

	Corn		Hay	
	1979	1975-1979	1979	1975-1979
INCOME				
Yield (Tons/Acre)	17.0	17.0	3.5	3.5
Price (\$/Ton)	16.45	15.50	59.75	60.10
Value of Production	\$279.65	\$263.50	\$209.10	\$210.35
VARIABLE EXPENSES				
<u>Growing</u>				
Seed	17.20	15.65	9.05	8.20
Fertilizer				
Nitrogen	19.55	19.15	0.00	0.00
Phosphorus	13.20	12.95	9.90	9.70
Potassium	7.80	7.65	17.55	17.20
Custom Application	5.00	3.00	--	--
Lime	--	--	--	--
Chemicals	17.35	18.25	3.50	3.65
Power & Equipment				
Fuel, Oil & Grease	5.00	3.80	1.05	0.80
Repair & Maintenance	4.40	3.65	0.75	0.60
Other	2.20	1.85	2.30	1.95
Total Growing	\$91.70	\$85.95	\$44.10	\$42.10
<u>Harvesting</u>				
Power & Equipment				
Fuel, Oil & Grease	6.25	4.75	7.75	5.90
Repair & Maintenance	4.50	3.70	9.90	8.25
Twine	--	--	4.20	3.55
Other	1.65	1.40	2.30	1.95
Total Harvesting	\$12.40	\$9.85	\$24.15	\$19.65
<u>Interest on Operating Capital</u>	5.85	4.55	3.85	2.90
<u>Management Charge</u>	14.00	13.15	10.45	10.50
<u>Labor</u>	25.90	21.00	31.45	25.45
TOTAL VARIABLE EXPENSES	\$149.85	\$134.50	\$114.00	\$100.60
FIXED EXPENSES				
Power & Equipment	55.95	43.30	39.95	30.95
Machinery Storage	4.10	3.40	4.10	3.40
TOTAL FIXED EXPENSES (less property tax)	\$60.05	\$46.70	\$44.05	\$34.35
TOTAL EXPENSES	\$209.90	\$181.20	\$158.05	\$134.95
RETURN TO LAND (less property tax)	\$69.75	\$82.30	\$51.05	\$75.40
<hr/>				
ROTATION WEIGHTED AVERAGE				
RETURN TO LAND, 1975-1979 Average		\$79.55		
Property Tax		-12.55		
RETURN TO LAND		\$67.00		

SOIL GROUP II
6 CORN - 4 HAY
Low Lime

	Corn		Hay	
	1979	1975-1979	1979	1975-1979
INCOME				
Yield (Tons/Acre)	17.0	17.0	3.5	3.5
Price (\$/Ton)	16.45	15.50	59.75	60.10
Value of Production	\$279.65	\$263.50	\$209.10	\$210.35
VARIABLE EXPENSES				
<u>Growing</u>				
Seed	17.20	15.65	9.05	8.20
Fertilizer				
Nitrogen	19.55	19.15	0.00	0.00
Phosphorus	13.20	12.95	9.90	9.70
Potassium	7.80	7.65	17.55	17.20
Custom Application	5.00	3.00	--	--
Lime	14.50	14.20	14.50	14.20
Chemicals	17.35	18.25	3.50	3.65
Power & Equipment				
Fuel, Oil & Grease	5.00	3.80	1.05	0.80
Repair & Maintenance	4.40	3.65	0.75	0.60
Other	2.20	1.85	2.30	1.95
Total Growing	\$106.20	\$100.15	\$58.60	\$56.30
<u>Harvesting</u>				
Power & Equipment				
Fuel, Oil & Grease	6.25	4.75	7.75	5.90
Repair & Maintenance	4.50	3.70	9.90	8.25
Twine	--	--	4.20	3.55
Other	1.65	1.40	2.30	1.95
Total Harvesting	\$12.40	\$9.85	\$24.15	\$19.65
<u>Interest on Operating Capital</u>	6.70	5.20	4.65	3.60
<u>Management Charge</u>	14.00	13.15	10.45	10.50
<u>Labor</u>	25.90	21.00	31.45	25.45
TOTAL VARIABLE EXPENSES	\$165.20	\$149.35	\$129.30	\$115.50
FIXED EXPENSES				
Power & Equipment	55.95	43.30	39.95	30.95
Machinery Storage	4.10	3.40	4.10	3.40
TOTAL FIXED EXPENSES				
(less property tax)	\$60.05	\$46.70	\$44.05	\$34.35
TOTAL EXPENSES	\$225.25	\$196.05	\$173.35	\$149.85
RETURN TO LAND				
(less property tax)	\$54.40	\$67.45	\$35.75	\$60.50
ROTATION WEIGHTED AVERAGE				
RETURN TO LAND, 1975-1979 Average		\$64.65		
Property Tax		-10.20		
RETURN TO LAND		\$54.45		

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SOIL GROUP III
5 CORN - 5 HAY
High Lime

	Corn		Hay	
	1979	1975-1979	1979	1975-1979
INCOME				
Yield (Tons/Acre)	15.1	15.1	3.1	3.1
Price (\$/Ton)	16.45	15.50	59.75	60.10
Value of Production	\$ 248.40	\$234.05	\$185.20	\$186.30
VARIABLE EXPENSES				
<u>Growing</u>				
Seed	17.20	15.65	7.25	6.60
Fertilizer				
Nitrogen	17.25	16.90	0.00	0.00
Phosphorus	13.20	12.95	9.70	9.50
Potassium	7.80	7.65	14.05	13.75
Custom Application	5.00	3.00	--	--
Lime	--	--	--	--
Chemicals	16.70	17.55	3.30	3.45
Power & Equipment				
Fuel, Oil & Grease	5.25	4.00	0.90	0.70
Repair & Maintenance	4.60	3.80	0.65	0.55
Other	2.20	1.85	1.85	1.55
Total Growing	\$89.20	\$83.35	\$37.70	\$36.10
<u>Harvesting</u>				
Power & Equipment				
Fuel, Oil & Grease	6.30	4.80	8.15	6.20
Repair & Maintenance	4.60	3.85	10.40	8.65
Twine	--	--	3.70	3.10
Other	1.65	1.40	2.30	1.95
Total Harvesting	\$12.55	\$10.05	\$24.55	\$19.90
<u>Interest on Operating Capital</u>	5.75	4.40	3.50	2.65
<u>Management Charge</u>	12.40	11.70	9.25	9.30
<u>Labor</u>	25.05	20.30	30.15	24.40
TOTAL VARIABLE EXPENSES	\$144.95	\$129.80	\$105.15	\$92.35
FIXED EXPENSES				
Power & Equipment	55.95	43.30	39.95	30.95
Machinery Storage	4.10	3.40	4.10	3.40
TOTAL FIXED EXPENSES				
(less property tax)	\$60.05	\$46.70	\$44.05	\$34.35
TOTAL EXPENSES	\$205.00	\$176.50	\$149.20	\$126.70
RETURN TO LAND				
(less property tax)	\$43.40	\$57.55	\$36.00	\$59.60
ROTATION WEIGHTED AVERAGE				
RETURN TO LAND, 1975-1979 Average		\$58.55		
Property Tax		- 9.25		
RETURN TO LAND		\$49.30		

SOIL GROUP III
5 CORN - 5 HAY
Low Lime

	Corn		Hay	
	1979	1975-1979	1979	1975-1979
INCOME				
Yield (Tons/Acre)	15.1	15.1	3.1	3.1
Price (\$/Ton)	16.45	15.50	59.75	60.10
Value of Production	\$248.40	\$234.05	\$185.20	\$186.30
VARIABLE EXPENSES				
<u>Growing</u>				
Seed	17.20	15.65	7.25	6.60
Fertilizer				
Nitrogen	17.25	16.90	0.00	0.00
Phosphorus	13.20	12.95	9.70	9.50
Potassium	7.80	7.65	14.05	13.75
Custom Application	5.00	3.00	--	--
Lime	14.50	14.20	14.50	14.20
Chemicals	16.70	17.55	3.30	3.45
Power & Equipment				
Fuel, Oil & Grease	5.25	4.00	0.90	0.70
Repair & Maintenance	4.60	3.80	0.65	0.55
Other	2.20	1.85	1.85	1.55
Total Growing	\$103.70	\$97.55	\$52.20	\$50.30
<u>Harvesting</u>				
Power & Equipment				
Fuel, Oil & Grease	6.30	4.80	8.15	6.20
Repair & Maintenance	4.60	3.85	10.40	8.65
Twine	--	--	3.70	3.10
Other	1.65	1.40	2.30	1.95
Total Harvesting	\$12.55	\$10.05	\$24.55	\$19.90
<u>Interest on Operating Capital</u>	6.55	5.10	4.35	3.30
<u>Management Charge</u>	12.40	11.70	9.25	9.30
<u>Labor</u>	25.05	20.30	30.15	24.40
TOTAL VARIABLE EXPENSES	\$160.25	\$144.70	\$120.50	\$107.20
FIXED EXPENSES				
Power & Equipment	55.95	43.30	39.95	30.95
Machinery Storage	4.10	3.40	4.10	3.40
TOTAL FIXED EXPENSES				
(less property tax)	\$ 60.05	\$ 46.70	\$ 44.05	\$ 34.35
TOTAL EXPENSES	\$220.30	\$191.40	\$164.55	\$141.55
RETURN TO LAND				
(less property tax)	\$ 28.10	\$ 42.65	\$ 20.65	\$ 44.75
ROTATION WEIGHTED AVERAGE				
RETURN TO LAND, 1975-1979 Average		\$43.70		
Property Tax		- 6.90		
RETURN TO LAND		\$36.80		

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SOIL GROUP IV
5 CORN - 5 HAY
High Lime

	Corn		Hay	
	1979	1975-1979	1979	1975-1979
INCOME				
Yield (Tons/Acre)	12.9	12.9	2.6	2.6
Price (\$/Ton)	16.45	15.50	58.70	59.05
Value of Production	\$212.20	\$199.95	\$152.60	\$153.55
VARIABLE EXPENSES				
<u>Growing</u>				
Seed	17.20	15.65	7.25	6.60
Fertilizer				
Nitrogen	17.25	16.90	0.00	0.00
Phosphorus	13.20	12.95	9.70	9.50
Potassium	7.80	7.65	14.05	13.75
Custom Application	5.00	3.00	--	--
Lime	--	--	--	--
Chemicals	16.70	17.55	3.30	3.45
Power & Equipment				
Fuel, Oil & Grease	5.25	4.00	0.90	0.70
Repair & Maintenance	4.60	3.80	0.65	0.55
Other	2.20	1.85	1.85	1.55
Total Growing	\$89.20	\$83.35	\$37.70	\$36.10
<u>Harvesting</u>				
Power & Equipment				
Fuel, Oil & Grease	5.85	4.45	6.70	5.10
Repair & Maintenance	4.55	3.80	7.20	5.95
Twine	--	--	3.10	2.60
Other	1.65	1.40	2.30	1.95
Total Harvesting	\$12.05	\$ 9.65	\$19.30	\$15.60
<u>Interest on Operating Capital</u>	5.70	4.40	3.20	2.45
<u>Management Charge</u>	10.60	10.00	7.65	7.70
<u>Labor</u>	24.65	19.95	22.95	18.60
TOTAL VARIABLE EXPENSES	\$142.20	\$127.35	\$90.80	\$80.45
FIXED EXPENSES				
Power & Equipment	55.95	43.30	39.95	30.95
Machinery Storage	4.10	3.40	4.10	3.40
TOTAL FIXED EXPENSES (less property tax)	\$60.05	\$ 46.70	\$44.05	\$34.35
TOTAL EXPENSES	\$202.25	\$174.05	\$134.85	\$114.80
RETURN TO LAND (less property tax)	\$9.95	\$25.90	\$17.75	\$38.75
ROTATION WEIGHTED AVERAGE				
RETURN TO LAND, 1975-1979 Average		\$32.30		
Property Tax		- 5.10		
RETURN TO LAND		\$27.20		

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SOIL GROUP IV
5 CORN -- 5 HAY
Low Lime

	Corn		Hay	
	1979	1975-1979	1979	1975-1979
INCOME				
Yield (Tons/Acre)	12.9	12.9	2.6	2.6
Price (\$/Ton)	16.45	15.50	58.70	59.05
Value of Production	\$212.20	\$199.95	\$152.60	\$153.55
VARIABLE EXPENSES				
<u>Growing</u>				
Seed	17.20	15.65	7.25	6.60
Fertilizer				
Nitrogen	17.25	16.90	0.00	0.00
Phosphorus	13.20	12.95	9.70	9.50
Potassium	7.80	7.65	14.05	13.75
Custom Application	5.00	3.00	--	--
Lime	14.50	14.20	14.50	14.20
Chemicals	16.70	17.55	3.30	3.45
Power & Equipment				
Fuel, Oil & Grease	5.25	4.00	0.90	0.70
Repair & Maintenance	4.60	3.80	0.65	0.55
Other	2.20	1.85	1.85	1.55
Total Growing	\$103.70	\$ 97.55	\$ 52.20	\$ 50.30
<u>Harvesting</u>				
Power & Equipment				
Fuel, Oil & Grease	5.85	4.45	6.70	5.10
Repair & Maintenance	4.55	3.80	7.20	5.95
Twine	--	--	3.10	2.60
Other	1.65	1.40	2.30	1.95
Total Harvesting	\$ 12.05	\$ 9.65	\$ 19.30	\$ 15.60
<u>Interest on Operating Capital</u>	6.55	5.05	4.05	3.10
<u>Management Charge</u>	10.60	10.00	7.65	7.70
<u>Labor</u>	24.65	19.95	22.95	18.60
TOTAL VARIABLE EXPENSES	\$157.55	\$142.20	\$106.15	\$ 95.30
FIXED EXPENSES				
Power & Equipment	55.95	43.30	39.95	30.95
Machinery Storage	4.10	3.40	4.10	3.40
TOTAL FIXED EXPENSES				
(less property tax)	\$ 60.05	\$ 46.70	\$ 44.05	\$ 34.35
TOTAL EXPENSES	\$217.60	\$188.90	\$150.20	\$129.65
RETURN TO LAND				
(less property tax)	(-) \$5.40	\$ 11.05	\$ 2.40	\$ 23.90
ROTATION WEIGHTED AVERAGE				
RETURN TO LAND, 1975-1979 Average		\$17.45		
Property Tax		- 2.75		
RETURN TO LAND		\$14.70		

SOIL GROUP V
4 CORN - 6 HAY
High Lime

	Corn		Hay	
	1979	1975-1979	1979	1975-1979
INCOME				
Yield (Tons/Acre)	11.9	11.9	2.3	2.3
Price (\$/Ton)	16.45	15.50	56.50	56.85
Value of Production	\$195.75	\$184.45	\$129.95	\$130.75
VARIABLE EXPENSES				
<u>Growing</u>				
Seed	17.20	15.65	7.10	6.45
Fertilizer				
Nitrogen	13.80	13.50	0.00	0.00
Phosphorus	13.20	12.95	7.70	7.55
Potassium	7.80	7.65	7.80	7.65
Custom Application	5.00	3.00	--	--
Lime	--	--	--	--
Chemicals	15.65	16.45	0.65	0.65
Power & Equipment				
Fuel, Oil & Grease	5.50	4.20	0.75	0.55
Repair & Maintenance	4.85	4.00	0.55	0.45
Other	2.20	1.85	1.55	1.30
Total Growing	\$85.20	\$79.25	\$26.10	\$24.60
<u>Harvesting</u>				
Power & Equipment				
Fuel, Oil & Grease	5.90	4.50	7.05	5.35
Repair & Maintenance	4.60	3.80	7.55	6.25
Twine	--	--	2.75	2.30
Other	1.65	1.40	2.30	1.95
Total Harvesting	\$12.15	\$ 9.70	\$19.65	\$15.85
<u>Interest on Operating Capital</u>	5.50	4.20	2.60	1.90
<u>Management Charge</u>	9.80	9.20	6.50	6.55
<u>Labor</u>	24.20	19.60	22.10	17.90
TOTAL VARIABLE EXPENSES	\$136.85	\$121.95	\$ 76.95	\$ 66.80
FIXED EXPENSES				
Power & Equipment	55.95	43.30	39.95	30.95
Machinery Storage	4.10	3.40	4.10	3.40
TOTAL FIXED EXPENSES (less property tax)	\$ 60.05	\$ 46.70	\$ 44.05	\$ 34.35
TOTAL EXPENSES	\$196.90	\$168.65	\$121.00	\$101.15
RETURN TO LAND (less property tax)	(-)\$1.15	\$ 15.80	\$ 8.95	\$ 29.60
ROTATION WEIGHTED AVERAGE				
RETURN TO LAND, 1975-1979 Average		\$24.10		
Property Tax		- 3.80		
RETURN TO LAND		\$20.30		

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SOIL GROUP V
4 CORN - 6 HAY
Low Lime

	Corn		Hay	
	1979	1975-1979	1979	1975-1979
INCOME				
Yield (Tons/Acre)	11.9	11.9	2.3	2.3
Price (\$/Ton)	16.45	15.50	56.50	56.85
Value of Production	\$195.75	\$184.45	\$129.95	\$130.75
VARIABLE EXPENSES				
<u>Growing</u>				
Seed	17.20	15.65	7.10	6.45
Fertilizer				
Nitrogen	13.80	13.50	0.00	0.00
Phosphorus	13.20	12.95	7.70	7.55
Potassium	7.80	7.65	7.80	7.65
Custom Application	5.00	3.00	--	--
Lime	14.50	14.20	14.50	14.20
Chemicals	15.65	16.45	0.65	0.65
Power & Equipment				
Fuel, Oil & Grease	5.50	4.20	0.75	0.55
Repair & Maintenance	4.85	4.00	0.55	0.45
Other	2.20	1.85	1.55	1.30
Total Growing	\$ 99.70	\$ 93.45	\$ 40.60	\$ 38.80
<u>Harvesting</u>				
Power & Equipment				
Fuel, Oil & Grease	5.90	4.50	7.05	5.35
Repair & Maintenance	4.60	3.80	7.55	6.25
Twine	--	--	2.75	2.30
Other	1.65	1.40	2.30	1.95
Total Harvesting	\$ 12.15	\$ 9.70	\$ 19.65	\$ 15.85
<u>Interest on Operating Capital</u>	6.30	4.85	3.40	2.60
<u>Management Charge</u>	9.80	9.20	6.50	6.55
<u>Labor</u>	24.20	19.60	22.10	17.90
TOTAL VARIABLE EXPENSES	\$152.15	\$136.80	\$ 92.25	\$ 81.70
FIXED EXPENSES				
Power & Equipment	55.95	43.30	39.95	30.95
Machinery Storage	4.10	3.40	4.10	3.40
TOTAL FIXED EXPENSES				
(less property tax)	\$ 60.05	\$ 46.70	\$ 44.05	\$ 34.35
TOTAL EXPENSES	\$212.20	\$183.50	\$136.30	\$116.05
RETURN TO LAND				
(less property tax)	(-) \$16.45	\$ 0.95	(-) \$6.35	\$ 14.70
ROTATION WEIGHTED AVERAGE				
RETURN TO LAND, 1975-1979 Average		\$9.20		
Property Tax		-1.45		
RETURN TO LAND		\$7.75		

SOIL GROUP VI
3 CORN - 7 HAY
High Lime

	Corn		Hay	
	1979	1975-1979	1979	1975-1979
INCOME				
Yield (Tons/Acre)	10.3	10.3	1.9	1.9
Price (\$/Ton)	16.45	15.50	52.10	52.45
Value of Production	\$169.45	\$159.65	\$ 99.00	\$ 99.65
VARIABLE EXPENSES				
<u>Growing</u>				
Seed	17.20	15.65	6.10	5.55
Fertilizer				
Nitrogen	11.50	11.25	1.00	0.95
Phosphorus	13.20	12.95	7.55	7.40
Potassium	7.80	7.65	7.25	7.10
Custom Application	5.00	3.00	--	--
Lime	--	--	--	--
Chemicals	14.90	15.65	0.55	0.55
Power & Equipment				
Fuel, Oil & Grease	5.50	4.20	0.65	0.50
Repair & Maintenance	4.85	4.00	0.45	0.35
Other	2.20	1.85	1.30	1.10
Total Growing	\$ 82.15	\$ 76.20	\$ 24.85	\$ 23.50
<u>Harvesting</u>				
Power & Equipment				
Fuel, Oil & Grease	5.50	4.20	4.20	3.20
Repair & Maintenance	4.35	3.60	4.50	3.75
Twine	--	--	2.30	1.90
Other	1.65	1.40	2.30	1.95
Total Harvesting	\$ 11.50	\$ 9.20	\$ 13.30	\$ 10.80
<u>Interest on Operating Capital</u>	5.30	4.05	2.15	1.60
<u>Management Charge</u>	8.45	8.00	4.95	5.00
<u>Labor</u>	23.35	18.90	16.15	13.10
TOTAL VARIABLE EXPENSES	\$130.75	\$116.35	\$ 61.40	\$ 54.00
FIXED EXPENSES				
Power & Equipment	55.95	43.30	39.95	30.95
Machinery Storage	4.10	3.40	4.10	3.40
TOTAL FIXED EXPENSES (less property tax)	\$ 60.05	\$ 46.70	\$ 44.05	\$ 34.35
TOTAL EXPENSES	\$190.80	\$163.05	\$105.45	\$ 88.35
RETURN TO LAND (less property tax)	(-) \$21.35	(-) \$3.40	(-) \$6.45	\$ 11.30
ROTATION WEIGHTED AVERAGE				
RETURN TO LAND, 1975-1979 Average		\$6.90		
Property Tax		-1.10		
RETURN TO LAND		\$5.80		

SOIL GROUP VI
3 CORN - 7 HAY
Low Lime

	Corn		Hay	
	1979	1975-1979	1979	1975-1979
INCOME				
Yield (Tons/Acre)	10.3	10.3	1.9	1.9
Price (\$/Ton)	16.45	15.50	52.10	52.45
Value of Production	\$169.45	\$159.65	\$99.00	\$99.65
VARIABLE EXPENSES				
<u>Growing</u>				
Seed	17.20	15.65	6.10	5.55
Fertilizer				
Nitrogen	11.50	11.25	1.00	0.95
Phosphorus	13.20	12.95	7.55	7.40
Potassium	7.80	7.65	7.25	7.10
Custom Application	5.00	3.00	--	--
Lime	14.50	14.20	14.50	14.20
Chemicals	14.90	15.65	0.55	0.55
Power & Equipment				
Fuel, Oil & Grease	5.50	4.20	0.65	0.50
Repair & Maintenance	4.85	4.00	0.45	0.35
Other	2.20	1.85	1.30	1.10
Total Growing	\$96.65	\$90.40	\$39.35	\$37.70
<u>Harvesting</u>				
Power & Equipment				
Fuel, Oil & Grease	5.50	4.20	4.20	3.20
Repair & Maintenance	4.35	3.60	4.50	3.75
Twine	--	--	2.30	1.90
Other	1.65	1.40	2.30	1.95
Total Harvesting	\$11.50	\$9.20	\$13.30	\$10.80
<u>Interest on Operating Capital</u>	6.10	4.70	2.95	2.30
<u>Management Charge</u>	8.45	8.00	4.95	5.00
<u>Labor</u>	23.35	18.90	16.15	13.10
TOTAL VARIABLE EXPENSES	\$146.05	\$131.20	\$76.70	\$68.90
FIXED EXPENSES				
Power & Equipment	55.95	43.30	39.95	30.95
Machinery Storage	4.10	3.40	4.10	3.40
TOTAL FIXED EXPENSES				
(less property tax)	\$60.05	\$46.70	\$44.05	\$34.35
TOTAL EXPENSES	\$260.10	\$177.90	\$120.75	\$103.25
RETURN TO LAND				
(less property tax)	(-)\$36.65	(-)\$18.25	(-)\$21.75	(-)\$3.60
ROTATION WEIGHTED AVERAGE				
RETURN TO LAND, 1975-1979 Average		(-)\$8.00		
Property Tax		-0.00		
RETURN TO LAND		(-)\$8.00		

SOIL GROUP VII
2 CORN - 8 HAY
Low Lime

	Corn		Hay	
	1979	1975-1979	1979	1975-1979
INCOME				
Yield (Tons/Acre)	8.8	8.8	1.5	1.5
Price (\$/Ton)	16.45	15.50	49.95	50.25
Value of Production	\$144.75	\$136.40	\$ 74.90	\$ 75.35
VARIABLE EXPENSES				
<u>Growing</u>				
Seed	17.20	15.65	5.30	4.85
Fertilizer				
Nitrogen	6.90	6.75	1.70	1.70
Phosphorus	13.20	12.95	7.40	7.30
Potassium	7.80	7.65	6.80	6.70
Custom Application	5.00	3.00	--	--
Lime	14.50	14.20	14.50	14.20
Chemicals	14.00	14.70	0.50	0.50
Power & Equipment				
Fuel, Oil & Grease	5.75	4.35	0.60	0.45
Repair & Maintenance	5.05	4.20	0.45	0.35
Other	2.20	1.85	1.15	0.95
Total Growing	\$ 91.60	\$ 85.30	\$ 38.40	\$ 37.00
<u>Harvesting</u>				
Power & Equipment				
Fuel, Oil & Grease	5.40	4.10	4.40	3.35
Repair & Maintenance	4.25	3.55	4.70	3.90
Twine	--	--	1.80	1.50
Other	1.65	1.40	2.30	1.95
Total Harvesting	\$ 11.30	\$ 9.05	\$ 13.20	\$ 10.70
<u>Interest on Operating Capital</u>	5.80	4.45	2.90	2.25
<u>Management Charge</u>	7.25	6.80	3.75	3.75
<u>Labor</u>	22.95	18.60	14.45	11.70
TOTAL VARIABLE EXPENSES	\$138.90	\$124.20	\$ 72.70	\$ 65.40
FIXED EXPENSES				
Power & Equipment	55.95	43.30	39.95	30.95
Machinery Storage	4.10	3.40	4.10	3.40
TOTAL FIXED EXPENSES				
(less property tax)	\$ 60.05	\$ 46.70	\$ 44.05	\$ 34.35
TOTAL EXPENSES	\$198.95	\$170.90	\$116.75	\$ 99.75
RETURN TO LAND				
(less property tax)	(-) \$54.20	(-) \$34.50	(-) \$41.85	(-) \$24.40
ROTATION WEIGHTED AVERAGE				
RETURN TO LAND, 1975-1979 Average			(-) \$26.40	
Property Tax			-0.00	
RETURN TO LAND			(-) \$26.40	

SOIL GROUP VIII
PASTURE
Low Lime

	Pasture	
	1979	1975-1979
INCOME		
Yield (Tons/Acre)	1.0	1.0
Price (\$/Ton)	47.70	48.05
Value of Production	\$ 47.70	\$ 48.05
VARIABLE EXPENSES		
<u>Growing</u>		
Seed	4.25	3.90
Fertilizer		
Nitrogen	6.90	6.75
Phosphorus	6.60	6.45
Potassium	3.90	3.80
Custom Application	--	--
Lime	7.25	7.10
Chemicals	0.40	0.40
Power & Equipment		
Fuel, Oil & Grease	0.50	0.35
Repair & Maintenance	0.35	0.30
Other	0.90	0.75
Total Growing	\$ 31.05	\$ 29.80
<u>Harvesting</u>		
Power & Equipment		
Fuel, Oil & Grease	--	--
Repair & Maintenance	--	--
Twine	--	--
Other	--	--
Total Harvesting	\$ 0.00	\$ 0.00
<u>Interest on Operating Capital</u>	1.75	1.40
<u>Management Charge</u>	2.40	2.40
<u>Labor</u>	4.25	3.45
TOTAL VARIABLE EXPENSES	\$ 39.45	\$ 37.05
FIXED EXPENSES		
Power & Equipment	8.65	6.75
Machinery Storage	4.10	3.40
Electric Fencing	1.30	1.05
TOTAL FIXED EXPENSES		
(less property tax)	\$ 14.05	\$ 11.20
TOTAL EXPENSES	\$ 53.50	\$ 48.25
RETURN TO LAND		
(less property tax)	(-) \$ 5.80	(-) \$ 0.20
ROTATION WEIGHTED AVERAGE		
RETURN TO LAND, 1975-1979 Average	(-) \$0.20	
Property Tax	-0.00	
RETURN TO LAND	(-) \$0.20	

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