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Crop Enterprise and Principal Rotation Budgets for Sustainable Agriculture Case Farms in South Dakota

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CROP ENTERPRISE AND PRINCIPAL ROTATION BUDGETS FOR SUSTAINABLE AGRICULTURE CASE FARMS IN SOUTH DAKOTA

by

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**Corrections were made in Rotation U in July 1990.

Preface

Crop enterprise and rotation budgets for 12 South Dakota case study sustainable farms are presented in this research report. These case farms were selected from a total of 22 sustainable farms in the State, for which on-farm interviews with the operators were conducted during early 1989. Descriptive results of those on-farm interviews were reported in South Dakota State University (SDSU) Economics Research Report 89-5, **Crop and Livestock Enterprises, Risk Evaluation, and Management Strategies on South Dakota Sustainable Farms**, November 1989. Practices and views identified in the portions of the interviews pertaining to government farm programs and policies were reported in SDSU Economics Staff Paper 89-7, **Farm Program Participation and Policy Perspectives of Sustainable Farmers in South Dakota**, October 1989. Livestock budgets for case study sustainable farms are presently under development and will be published in a separate report.

The present research report provides a base for several types of analyses now underway and to be pursued further in the remainder of 1990 and in 1991. Those analyses include: (1) comparisons of net returns on "sustainable" and "conventional" farms in South Dakota; (2) estimations of the effects of changes in Federal farm programs and in other public programs and policies on the relative profitability of sustainable and conventional farming systems; and (3) assessments of the affects of conversions from sustainable to conventional systems on the strength of rural economies. Results of those analyses will be included in future reports. The program of research leading to the present research report, reports cited above, and future reports from the analyses just mentioned is supported by the SDSU Agricultural Experiment Station and by Grant No. 88-56 from the Northwest Area Foundation (in St. Paul, MN).

We wish to thank Rod Kappes for his assistance in much of the crop enterprise budgeting. Clarence Mends deserves appreciation for doing much of the work on the budgets for Rotation H; that rotation system is also being used in a companion study supported by the U.S. Department of Agriculture's "Low-Input/Sustainable Agriculture" research and education program. Mr. Mends also collaborated in development of the machine costs and reviewed the budgets and a draft of this report. Many thanks to Mrs. Verna Clark for patiently and accurately typing the manuscript and its revisions. Any remaining errors are the responsibility of the authors.

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Introduction

The findings from 32 sustainable farmers in South Dakota who responded to a mail survey during the summer of 1988 were published in April 1989 (Taylor, et al., 1989b). On-farm, personal interviews were conducted with 22 of those 32 farmers during January-March 1989. Insights obtained through those interviews were reported in November 1989 (Taylor, et al., 1989a).

The present report contains crop enterprise and principal rotation budgets for 12 of those 22 farmers that were interviewed.[1] The principal rotation budget looks at the overall profitability of the system, rather than the profitability of each individual crop. These budgets were developed based on information acquired during the on-farm interviews. Figure 1 shows the location of the 12 farms for which the budgets were constructed.

Some of these principal rotation budgets will be used in the analysis of various economic and farm policy conditions affecting the profitability of sustainable farming systems. That analysis will be described in a future report.

In the first major section of this report, the procedures used in preparing the budgets are described in some detail. The second section contains the budget spreadsheets. The report concludes with an economic summary of the 12 farms.

Budgeting Procedures

This section describes the general procedures and assumptions used to construct the budget spreadsheets for the case farms. These budget spreadsheets were developed on the basis of what each farmer described during the interview to be his "principal crop rotation". Refer to Taylor, et al. (1989a) for detailed descriptions of the crop rotations.

Types of Costs

The three types of costs used in these budgets are direct (or operating), fixed, and land costs. Direct costs are those expenses that result from planting, maintaining, and harvesting a crop. Items such as seed, fertilizer, pesticide, fuel and lubrication, machinery repairs, crop operating loan interest, and labor constitute direct costs. Fixed costs, which are incurred whether a crop is grown or not, include depreciation, real estate taxes,

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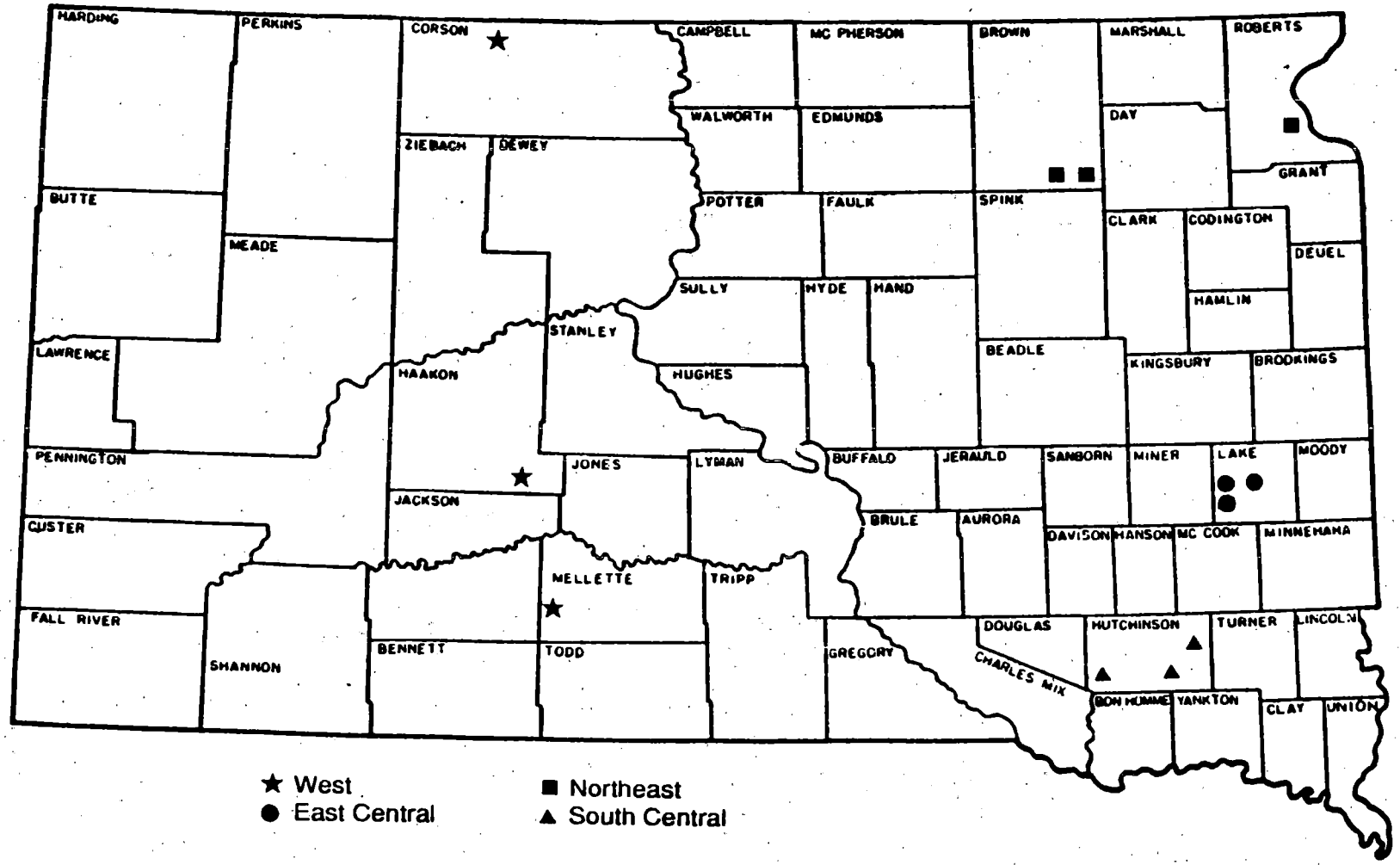
[1]At the time of this publication, only the crop budgets had been completed. The livestock budgets are in the process of being developed and will be published soon.

Figure 1. Location of 12 South Dakota farms for which budgets were prepared.



interest on capital, housing of machinery, and insurance on buildings and equipment. Land cost is the charge for owning or renting farmland (Mends, et al., 1989).

Input Use and Price Assumptions

Principal assumptions about input use and prices are described in this section.

Seeding Rates. Most seeding rates were taken from the template used to develop South Dakota State University (SDSU) Cooperative Extension Service (CES) publication EMC-864 (Hoyt, et al., 1989). This publication divided South Dakota into nine regions and, if necessary, modified the seeding rates for similar crops in different regions. The location of each of the 12 farms with respect to these regional divisions determined the seeding rate used in the spreadsheet.

The seeding rate for sweet clover was based on SDSU Economics Research Report 89-3 (Mends, et al., 1989). For crops raised by farmers not covered by this publication and EMC-864 (e.g., flax, rye, millet, and buckwheat), seeding rates were taken from SDSU CES Extension Extra publication 8020 (Hall, 1985). There were no regional variations among seeding rates for crops in that publication.

For some farms, however, the chosen seeding rates differ from those given in the above sources. The reason for this is because of special circumstances discovered during the interviews.

Seeding units per acre are listed in 1,000s of kernels for corn; bushels for oats, spring wheat, soybeans, rye, flax, barley, and winter wheat; and pounds for sweet clover, forage sudan, buckwheat, millet, alfalfa, and sunflowers.

Seed Prices. See Table 1 for seed prices used in the budgets. The prices in Table 1 are 1988 estimates based on price lists from six individual seed dealers around South Dakota. These price lists were obtained from Robert J. Pollmann, Manager of the South Dakota Seed Certification Service. Clarence Mends, SDSU Economics Department Research Associate, calculated the average prices from the six lists and adjusted some prices to the nearest nickel. Mends then confirmed these estimated prices with Pollmann. Prices were based on specific varieties for some of the crops.

Because the small grain seeded on set-aside acres was assumed to be taken from the farmers' bins, the price for it was assumed to be less than the price for seeding the same small grain intended for harvesting. The seed cost for set-aside acres was assumed to be the same as the farmers' selling price plus a $0.25/bu. charge for cleaning the seed.

Fertilizer Prices. Dry fertilizer prices used in the budgets are listed in Table 2. These estimated 1988 prices were determined by visiting with James R. Gerwing, of the SDSU Plant Science Department. Information on fertilizer application rates was furnished by the farmers.

Table 1. Estimated South Dakota Seed Prices for 1988.

Commodity	Price Per Unit
Corn	$ 0.80/1,000 kernels
Oats	$ 4.48/bu.
Spring Wheat	$ 6.55/bu.
Soybeans	$11.05/bu.
Rye	$ 4.80/bu.
Flax	$ 9.25/bu.
Barley	$ 4.80/bu.
Winter Wheat	$ 7.00/bu.
Sweet Clover	$ 0.50/lb.
Forage Sudan	$ 0.30/lb.
Buckwheat	$ 0.30/lb.
Millet	$ 0.16/lb.
Alfalfa	$ 1.95/lb.
Sunflowers	$ 3.25/lb.

Table 2. Estimated South Dakota Dry Fertilizer Prices for 1988

Fertilizer	Price
Nitrogen	$0.20/lb. of N
Phosphorus	$0.19/lb. of P_2O_5
Potassium	$0.13/lb. of K_2O

Some producers indicated that they used various "biological" or "organic" soil amendments. These items were accounted for under the "Other Fertilizer" category on the spreadsheets.

Herbicide Prices. The herbicide prices used in the budgets were taken from SDSU CES Extension Extra publication 8012 (Wrage and Johnson, 1988). The rates of herbicide application were provided by the farmers during the interviews.

Crop Insurance. Each farmer was assumed to purchase Federal Multiple Peril Crop Insurance (MPCI) on all crops for which insurance is available in each farmer's respective county. (Different counties can insure different crops.) In all budgets, we used the 65% coverage level, the 1988 medium price election, and premium coefficients based on the respective 1988 county rate tables. The premium coefficients were taken from CROP INSURE, a computer software package developed and copyrighted by the American Association of Crop Insurers.[2]

The cost of insurance was calculated as follows:

Farm Program Base Yield	x	65% Coverage Level	x	Medium Price Election	x	Premium Coefficient	=	Cost Per Acre

For non-program crops that do not have a Federal farm program base yield (i.e., soybeans, flax, rye, and sunflowers), the estimated grain yield on the spreadsheet was also assumed to be the base yield for the purpose of calculating the crop insurance cost per acre.

Storage. The costs used in the budgets for storing silage and various types of grain are listed in Table 3.

Drying. An estimated drying cost of $0.15/bu. was used in the budgets. This drying cost was applied to only the corn that was combined.

Overhead. Estimated overhead expenses used in the budgets are itemized in Table 4.

Corn Shelling. An estimated shelling cost of $0.09/bu. was assumed for corn that was harvested with an ear corn picker. This shelling cost was entered on the spreadsheet in the "Harvesting" row under the "Custom Machine Hire" section.

Labor. For persons operating machinery, a wage rate of $6.42/hr. was used. Some budgets required a labor charge for hand weeding. A wage rate of $4.28/hr. was used for the hand weeding.

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[2]Special thanks to Gerald Toland, Associate Professor, SDSU Economics Department, for allowing us to use the software.

Table 3. Estimated Storage Costs

Crop	Storage Cost Per Unit
Corn Silage	$4.00/ton
Picked Corn	$0.13/bu.
Sunflowers	$0.003/lb.
All other grains	$0.11/bu.

Table 4. Estimated Overhead Costs

Type of Crop	Cost per Acre
Row Crops	$5.50
Small Grains & Alfalfa	$5.00
Summer Fallow & Set-aside	$2.50

Interest. The annual percentage rate of interest assumed on all direct costs except labor was 12 percent. It was also assumed that the money for direct costs would be borrowed for an average time period of 6 months.

Cropland Values. A cropland value of $440/acre was used for the three farms in the south central region and $420/acre was used for the three farms in the east central region. Two different cropland values were used in both the northeast and west regions. In the northeast region, a cropland value of $300/acre was used for the two farms in Brown County and $330/acre was used for the farm in Roberts County. In the west region, cropland was valued at $200/acre for the farms in Haakon and Mellette counties and at $180/acre for the farm in Corson County. Cropland values were based on Janssen (1988) and the South Dakota Agricultural Statistics Service (SDASS, 1989).

Real Estate Tax and Land Charge. Real estate tax and land charge rates of 1.5 percent and 7 percent of cropland value, respectively, were used in the budgets.

Machinery Assumptions

The machine costs used in the crop budgets are listed in Annex Table 1-1. The machine costs were separated into five components: (1) fuel and lubrication; (2) machinery repairs; (3) labor; (4) machinery housing, interest, and insurance; and (5) depreciation. Annex 1 also explains how the machine costs were derived.

During the on-farm interviews, each farmer was asked to describe the tillage practices followed in a "typical" year, from spring pre-plant through post-harvest, for each crop in the principal rotation (see Annex 3 in Taylor, et al., 1989a). Individual enterprise budgets were developed for each crop based on the machine cost components (Annex Table 1-1) and these tillage practices.

It was assumed that machine costs would be charged to the individual crop enterprise budgets based on the tillage practices performed during the calendar year. This resulted in unusually high machine costs for some individual crop enterprise budgets. For example, the pre-plant and planting operations for winter wheat following summer fallow are all charged to the summer fallow enterprise, since these tillage practices are performed during early Fall of the summer fallow year. (The seed cost for winter wheat is also charged to the summer fallow enterprise.)

It was also assumed that each farmer would use the same age, size, and type of implement for any given tillage practice, and that each farmer used that implement for the same number of acres or hours per year. This was done to isolate differences in enterprise costs due to differences in tillage practices, rather than differences due to variations in efficiency of machinery use.

Yield Assumptions

Yield data were acquired during the on-farm interviews. Each farmer was asked to estimate the yield for crops grown in his principal rotation, from the standpoint of growing conditions considered to be "most normal". These yield estimates were used in the budgets.

In cases where specific yield data were not obtained in the interview, yields were estimated on the basis of information in Hoyt, et al. (1989) and SDASS (1986, 1987, 1988, and 1989). (This is explained in greater detail in the next section on principal rotation budgets.) Some of the estimated yields were based on adjustments of data from these other sources, based on comments made about relative yields during the interview.

The yield information from SDASS covered 5 years. The estimated yields were determined by throwing out the high and low, and averaging the remaining yields.

Yields are expressed in pounds per acre for sunflowers, tons per acre for alfalfa hay and corn silage, and bushels per acre for all other crops.

Principal Rotation Analysis and Output Price and Federal Farm Program Assumptions

Estimated selling prices used in this report were taken from Hoyt, et al. (1989). These prices were based on 1988 expected local market prices. They do not reflect the impact of the drought that materialized in 1988. Thus, these 1988 expected prices were intended to reflect what would have been received under "normal" growing conditions. This was done to reflect more "normal" prices, rather than "drought-induced" prices, since the enterprise budgets were based on "normal" crop yields.

For those crops grown by farmers but not listed in Hoyt, et al. (1989), the following sources were used to determine a 1988 estimated selling price: (1) SDASS (1989); (2) Wietgrefe (1989); (3) local elevator quotes; and (4) a standardized formula for valuing silage compared to the market prices of corn and hay (obtained from Burton Pflueger, Associate Professor, SDSU Economics Department, October 5, 1989).

Base yields for program crops (i.e., corn, oats, barley, wheat, and grain sorghum) were obtained during the on-farm interview or from respective county Agricultural Stabilization and Conservation Service (ASCS) offices (county base yield averages). The base yields are explained in greater detail in the following section on principal rotation budgets.

Estimated payments made for different levels of participation in the 1988 Federal farm program are listed in Table 5. Deficiency payments were taken from Hoyt, et al. (1989). These were expected 1988 deficiency payments, not necessarily those that were actually paid as a result of the drought-induced market prices in 1988. Thus, they represent deficiency payments that could have been expected under "normal" growing conditions. The paid land diversion rates were taken from U.S. Department of Agriculture (USDA, 1989).

Table 5. Estimated Government Payments

Commodity	Payment in $/bu. Deficiency Payment	Paid Land Diversion	0-92 Payment[a]
Corn	0.89	1.75	0.82
Wheat	0.50	--	0.46
Oats	--	--	0.28[b]
Barley	0.53	1.40	0.49

[a]Calculated by taking deficiency payment times 92 percent. For example, 0.89 * .92 = 0.8188 or 0.82.

[b]The 0-92 payment for oats is based on a $0.30 projected deficiency payment. There actually was no deficiency payment for oats, since the market price was higher than the target price. The 0-92 payment is guaranteed, even though there may be no deficiency payment.

Acreage reduction (set-aside) requirements for different levels of participation in the 1988 Federal farm program are listed in Table 6. They were taken from USDA (1989).

During the on-farm interviews, farmers were asked to describe their level of participation in the Federal farm program. A higher level of participation would indicate participation in the paid diversion program and/or the 0-92 provision. The acreage distributions used in the spreadsheets were developed based on these participation levels and other statements made during the interviews about average planted acreages.

Principal Rotation Budgets

This section contains a brief summary of the principal crop rotation and a budget spreadsheet for each of the 12 case farms. Refer to Annex 2 in Taylor, et al. (1989a) for more information on these farms.

The method of labeling the rotations in this report is the same as that followed by Taylor, et al. (1989a). For example, Rotation A in this report is the same as Rotation A in Taylor, et al. (1989a).

The brief summary for each farm contains information about the crop rotation, yields, crop acreages, level of participation in the Federal farm program, and particular assumptions that were made.

The budget spreadsheets consist of an "Input Section" page, an "Input Summary and Results" page, and a "Whole-Farm Results" page.

The "Input Section" contains yield, price, and farm program data used to calculate total income per acre. The information for computing direct (or operating) and fixed costs also appears in this section.

The "Input Summary and Results" section shows the costs and returns per acre for each crop enterprise. Preceding some of the calculated results are Roman numerals. Using corn in Rotation A, for example, Roman numerals highlight the following: (I) Total income per acre, $169.80; (II) Total direct (operating) costs per acre, $70.18; (III) Total fixed costs per acre, $32.91; (IV) Production costs per acre, which is the sum of direct and fixed costs, $103.09; (V) Land charges per acre, $30.80; (VI) Total production and land costs per acre, $133.89; and (VII) Income over all costs per acre, $35.91.

Numbers that appear in parentheses in the budgets reflect negative values. Since costs were allocated on a calendar year basis, the costs of fall tillage and planting operations were assigned to the crop just harvested. In a similar manner, establishment costs for alfalfa were included with a small grain crop, since those costs take place during the calendar year in which the small grain is the primary crop. This approach to allocating costs was followed in all of the budgets. Because of these calculation procedures and economic trade-offs between different components in particular rotations, the budgets should be viewed from a collective rotation system or whole-farm standpoint, rather than from the standpoint of individual crop enterprises.

Table 6. Acreage Reduction Requirements for 1988.

Commodity	Non-Paid	Optional Paid Land Diversion
Corn	20%	10%
Wheat	27.5%	--
Oats	5%	--
Barley	20%	10%

The "Whole-Farm Results" page contains a variety of information. Near the top of the page is a table displaying the acreage distribution and income over all costs on a dollar per acre and a dollar per crop enterprise basis. Below this table and to the left is an overview of the results. The overview contains the following items: (1) gross income; (2) direct costs excluding labor; (3) income over non-labor and non-land costs (i.e., return to land, labor, and management); (4) income over non-land costs (i.e., return to land and management); and (5) income over all costs (i.e., return to management). Finally, there is a table indicating the level of participation in the Federal farm program.

Farms in South Central Region*

*Rotations are for farms in Hutchinson County.

South Central - Rotation A. Corn - Soybeans - Corn - Rye or Oats with alfalfa seeded in the fall - Alfalfa (4-5 yrs.)

About 310 acres are in this rotation. The acreage distribution, "normal" harvested yields, and farm program base yields assumed for the spreadsheet are as follows:

Crop	Acres	"Normal" Harvested Yield	Farm Program Base Yield
Corn (grain)	74	60 bu/ac.	60 bu/ac.
Corn (silage)	38	8.3 ton/ac.	60 bu/ac.
Soybeans	50	30 bu/ac.	--
Oats	69	60 bu/ac.	48 bu/ac.
Alfalfa	30	3.5 ton/ac.	--
Set-Aside	48	--	--
Total	309		

All "normal" harvested yields, except for corn silage and alfalfa, were obtained during the on-farm interview. The yield for corn silage was taken from the SDASS (1986, 1987, 1988, and 1989). A 5-year corn silage average, with the high and low thrown out, was calculated. The alfalfa yield was obtained from Hoyt, et al. (1989). The base yield information was obtained during the interview.

Participation in the farm program is usually at the higher levels. This farmer generally participates only in the corn program. A cover crop of oats is seeded on the set-aside acres.

To accurately reflect the alfalfa costs, it was assumed that each year 6 acres would be established and 6 acres would be broken up. The alfalfa is established in late summer after the oats harvest along with a new seeding of oats as a nurse crop.

Fertilizer and herbicides are used as needed. Herbicides are often banded in the row and/or spot sprayed. The costs for these inputs are included in the spreadsheet. A portion of the acreage devoted to oats and soybeans receives near conventional levels of herbicide application; thus, explaining the "Soybeans (Treflan)" and "Oats (2-4-D)" columns on the spreadsheet. Yields were assumed to be the same for oats and soybeans grown with different levels of inputs, since no yield differences were indicated during the interview.

UT SECTION--ROTATION A.

	Corn Picked	Corn Combined	Soybeans	Soybeans (Treflan)	Corn Silage	Oats	Oats (2-4-D)	Oats w/Alf	Alfalfa Cont	Alfalfa Brk	Corn Pd Div	Set Aside
EIPTS:												
timated grain yield (units/ac.)	60.0	60.0	30.0	30.0	8.3	60.0	60.0	60.0	3.5	3.5	0.0	0.0
timated selling price or value ($/unit)	$1.94	$1.94	$6.50	$6.50	$19.26	$1.80	$1.80	$1.80	$50.00	$50.00	$0.00	$0.00
VERNMENT PAYMENT:												
se yield (units/ac.)	60	60	30	30	60	48	48	48	0	0	60	0
ficiency payment ($/unit)	$0.89	$0.89	$0.00	$0.00	$0.89	$0.00	$0.00	$0.00	$0.00	$0.00	$1.75	$0.00
RECT COSTS:												
ed 1 (units/ac	20.5	20.5	1	1	20.5	3	3	4.5	0	0	2	2
($/unit)	$0.80	$0.80	$11.05	$11.05	$0.80	$4.48	$4.48	$4.48	$0.00	$0.00	$2.05	$2.05
ed 2 (units/ac	0	0	0	0	0	0	0	10	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$1.95	$0.00	$0.00	$0.00	$0.00
rtilizer 1 (units/ac.)	0	0	0	0	0	32	32	32	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.20	$0.20	$0.20	$0.00	$0.00	$0.00	$0.00
rtilizer 2 (units/ac.)	0	0	0	0	0	16	16	16	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.19	$0.19	$0.19	$0.00	$0.00	$0.00	$0.00
rtilizer 3 (units/ac.)	0	0	0	0	0	6	6	6	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.13	$0.13	$0.13	$0.00	$0.00	$0.00	$0.00
ther Fertilizer (units/acre)	0	0	0	0	0	0	0	0	18	18	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.19	$0.19	$0.00	$0.00
rtilizer application ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
rbicide 1 (units/ac.)	0.7	0.7	0.05	1.5	0.7	0	0.5	0	0	0	0	0
($/unit)	$2.51	$2.51	$9.57	$3.28	$2.51	$0.00	$1.12	$0.00	$0.00	$0.00	$0.00	$0.00
rbicide 2 (units/ac.)	0.12	0.12	0	0.05	0.12	0	0	0	0	0	0	0
($/unit)	$1.12	$1.12	$0.00	$9.57	$1.12	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
rbicide application ($/ac.)	$0.00	$0.00	$0.00	$2.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
nsecticide (units/ac.)	0	0	0	0	0	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
nsecticide application ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
rop insurance ($/ac.)	$4.04	$4.04	$2.65	$2.65	$4.00	$1.32	$1.32	$1.32	$0.00	$0.00	$0.00	$0.00
torage ($/unit)	$0.13	$0.11	$0.11	$0.11	$4.00	$0.11	$0.11	$0.11	$0.00	$0.00	$0.00	$0.00
rying ($/unit)	$0.00	$0.15	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
verhead ($/ac.)	$5.50	$5.50	$5.50	$5.50	$5.50	$5.00	$5.00	$5.00	$5.00	$5.00	$2.50	$2.50
ustom machine hire												
Tillage ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Planting ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Harvesting ($/ac.)	$5.40	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
uel and lubrication ($/ac.)	$4.87	$3.94	$3.75	$3.52	$7.40	$6.09	$6.37	$6.73	$2.41	$3.90	$1.46	$1.46
achinery repair ($/ac.)	$7.75	$8.18	$8.01	$7.75	$13.31	$14.26	$14.63	$15.77	$7.69	$9.10	$1.93	$1.93
rop operating loan borrowed (months)	6	6	6	6	6	6	6	6	6	6	6	6
nterest APR(%)	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
abor 1 (hrs./ac.)	2.08	1.48	1.41	1.28	2.32	1.91	2.08	2.20	1.28	1.58	0.47	0.47
($/hr)	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42
abor 2 (hrs./ac.)	0.00	0.00	0.60	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
($/hr.)	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28
XED COSTS:												
nterest, Housing, and Ins. on Machinery	$13.45	$14.50	$15.01	$14.46	$16.70	$19.58	$20.18	$21.89	$11.41	$15.11	$4.04	$4.04
epreciation on machinery & equipment	$12.86	$16.27	$16.84	$16.34	$16.14	$21.11	$21.77	$23.31	$13.66	$17.20	$3.77	$3.77
and Cost ($/acre)	$440	$440	$440	$440	$440	$440	$440	$440	$440	$440	$440	$440
eal Estate Tax Percentage	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50

----------(end of Input Section)----------

INPUT SUMMARY AND RESULTS--ROTATION A.

	Corn Picked	Corn Combined	Soybeans	Soybeans (Treflan)	Corn Silage	Oats	Oats (2-4-D)	Oats w/Alf	Alfalfa Cont	Alfalfa Brk	Corn Pd Div	Set Aside
RECEIPTS:												
Estimated grain yield (units/ac.).....	60.0	60.0	30.0	30.0	8.3	60.0	60.0	60.0	3.5	3.5	0.0	0.0
Estimated selling price or value ($/unit)...	$1.94	$1.94	$6.50	$6.50	$19.26	$1.80	$1.80	$1.80	$50.00	$50.00	$0.00	$0.00
GOVERNMENT PAYMENT:												
Base yield (units/ac.).....	60	60	30	30	60	48	48	48	0	0	60	0
Deficiency payment ($/unit).....	$0.89	$0.89	$0.00	$0.00	$0.89	$0.00	$0.00	$0.00	$0.00	$0.00	$1.75	$0.00
I. Total income per acre.....	$169.80	$169.80	$195.00	$195.00	$213.26	$108.00	$108.00	$108.00	$175.00	$175.00	$105.00	$0.00
DIRECT COSTS:												
Seed ($/ac.).....	$16.40	$16.40	$11.05	$11.05	$16.40	$13.44	$13.44	$39.66	$0.00	$0.00	$4.10	$4.10
Fertilizer ($/ac.).	$0.00	$0.00	$0.00	$0.00	$0.00	$10.22	$10.22	$10.22	$3.42	$3.42	$0.00	$0.00
Fertilizer application ($/ac.).....	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Herbicide ($/ac.).....	$1.89	$1.89	$0.48	$5.40	$1.89	$0.00	$0.56	$0.00	$0.00	$0.00	$0.00	$0.00
Herbicide application ($/ac.).....	$0.00	$0.00	$0.00	$2.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Insecticide ($/ac.).....	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Insecticide application ($/ac.).....	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Crop insurance ($/ac.).....	$4.04	$4.04	$2.65	$2.65	$4.00	$1.32	$1.32	$1.32	$0.00	$0.00	$0.00	$0.00
Storage ($/ac.).....	$7.80	$6.60	$3.30	$3.30	$33.20	$6.60	$6.60	$6.60	$0.00	$0.00	$0.00	$0.00
Drying ($/ac.).....	$0.00	$9.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Overhead ($/ac.).....	$5.50	$5.50	$5.50	$5.50	$5.50	$5.00	$5.00	$5.00	$5.00	$5.00	$2.50	$2.50
Custom machine hire ($/ac.).....	$5.40	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Fuel and lubrication ($/ac.).....	$4.87	$3.94	$3.75	$3.52	$7.40	$6.09	$6.37	$6.73	$2.41	$3.90	$1.46	$1.46
Machinery repair ($/ac.).....	$7.75	$8.18	$8.01	$7.75	$13.31	$14.26	$14.63	$15.77	$7.69	$9.10	$1.93	$1.93
Interest on non labor direct costs ($/ac)...	$3.17	$3.29	$2.06	$2.44	$4.84	$3.37	$3.44	$5.05	$1.10	$1.27	$0.59	$0.59
Labor charge($/ac.).....	$13.35	$9.50	$11.62	$10.79	$14.89	$12.26	$13.35	$14.12	$8.22	$10.14	$3.02	$3.02
II. Total direct (operating) costs.....	$70.18	$68.34	$48.42	$54.39	$101.43	$72.56	$74.94	$104.47	$27.83	$32.83	$13.60	$13.60
Income over direct costs (I minus II)....	$99.62	$101.46	$146.58	$140.61	$111.82	$35.44	$33.06	$3.53	$147.17	$142.17	$91.40	($13.60)
Breakeven price per unit (direct costs)..	$1.17	$1.14	$1.61	$1.81	$12.22	$1.21	$1.25	$1.74	$7.95	$9.38	ERR	ERR
FIXED COSTS:												
Interest, Housing & Ins. on machinery ($/ac)	$13.45	$14.50	$15.01	$14.46	$16.70	$19.58	$20.18	$21.89	$11.41	$15.11	$4.04	$4.04
Deprec. on machinery and equipment ($/ac.)..	$12.86	$16.27	$16.84	$16.34	$16.14	$21.11	$21.77	$23.31	$13.66	$17.20	$3.77	$3.77
Real estate taxes ($/ac.).....	$6.60	$6.60	$6.60	$6.60	$6.60	$6.60	$6.60	$6.60	$6.60	$6.60	$6.60	$6.60
III. Total fixed costs.....	$32.91	$37.37	$38.45	$37.40	$39.44	$47.29	$48.55	$51.80	$31.67	$38.91	$14.41	$14.41
IV. Production costs ($/ac., excluding land) (II plus III)	$103.09	$105.71	$86.87	$91.79	$140.87	$119.85	$123.49	$156.27	$59.50	$71.74	$28.01	$28.01
Production costs ($/unit).....	$1.72	$1.76	$2.90	$3.06	$16.97	$2.00	$2.06	$2.60	$17.00	$20.50	ERR	ERR
V. Land charges ($/ac.).....	$30.80	$30.80	$30.80	$30.80	$30.80	$30.80	$30.80	$30.80	$30.80	$30.80	$30.80	$30.80
VI. Total production and land costs ($/ac.). (IV plus V)	$133.89	$136.51	$117.67	$122.59	$171.67	$150.65	$154.29	$187.07	$90.30	$102.54	$58.81	$58.81
Production and land costs ($/unit).....	$2.23	$2.28	$3.92	$4.09	$20.68	$2.51	$2.57	$3.12	$25.80	$29.30	ERR	ERR
Breakeven yield (units/ac.)..... (at selling price)	69.0	70.4	18.1	18.9	8.9	83.7	85.7	103.9	1.8	2.1	ERR	ERR
VII. Income over all costs ($/acre)..... (I minus VI)	$35.91	$33.29	$77.33	$72.41	$41.58	($42.65)	($46.29)	($79.07)	$84.70	$72.46	$46.19	($58.81)
Income over all costs ($/unit).....	$0.60	$0.55	$2.58	$2.41	$5.01	($0.71)	($0.77)	($1.32)	$24.20	$20.70	ERR	ERR

WHOLE-FARM RESULTS--ROTATION A.

Acreage Distribution and Income Over All Costs

	Corn Picked	Corn Combined	Soybeans	Soybeans (Treflan)	Corn Silage	Oats	Oats (2-4-D)	Oats w/Alf	Alfalfa Cont	Alfalfa Brk	Corn Pd Div	Set Aside	Total
Crop Distribution (acres).....	37	37	20	30	38	32	31	6	24	6	16	32	309
Income Over All Costs..... ($/acre)	$35.91	$33.29	$77.33	$72.41	$41.58	($42.65)	($46.29)	($79.07)	$84.70	$72.46	$46.19	($58.81)	$19.13
Income Over All Costs..... ($/crop)	$1,329	$1,232	$1,547	$2,172	$1,580	($1,365)	($1,435)	($474)	$2,033	$435	$739	($1,882)	$5,910

Item	Dollars/acre
Gross Income	$145
Direct Costs (excl. labor)	$49
Income over non-labor & non-land costs	$67
Income over non-land costs	$57
Income over all costs	$19

Farm Program Provisions:
Acreage Reduction Requirements

Crop	Non-Paid Acreage (%)	Optional Paid Acreage (%)	Optional Paid Rate ($/bu.)
Corn	20	10	$1.75
Wheat	***	***	***
Oats	***	***	***
Barley	***	***	***
Sorghum	***	***	***

South Central - Rotation D. Soybeans - Spring Wheat

This farm has 260 acres that are owned and 120 acres that are rented. The rotation on the owned land is divided so one-half of the acreage is in soybeans and the other half is in spring wheat. The rotation on the rented land is divided so one-half of the acreage is in corn and the other half is in a combination of soybeans and spring wheat.

For the spreadsheet, we used only the 260 acres of owned land. The acreage distribution, "normal" harvested yields, and farm program wheat base yield assumed for the spreadsheet are as follows:

Crop	Acres	"Normal" Harvested Yield	Farm Program Base Yield
Soybeans	134	25.5 bu/ac.	--
Spring Wheat	91	29 bu/ac.	29 bu/ac.
Set-Aside	35	--	--
Total	260		

The "normal" harvested yield and base yield information were obtained during the on-farm interview.

Participation in the farm program is usually at the higher levels. This farmer likes to use the programs to rest approximately 35-40 acres of the owned land per year. We assumed a minimum participation level because it allowed the desired 35-40 acres of rested land. A spring wheat/sweet clover mix is planted on the set-aside acres and plowed down as a green manure crop sometime in late summer or early fall.

Spot spraying with a purchased chemical herbicide is done only as needed in the spring wheat.

INPUT SECTION--ROTATION D.

	Soybeans	Spring Wheat	Set Aside
RECEIPTS:			
Estimated grain yield (units/ac.)	25.5	29.0	0.0
Estimated selling price or value ($/unit)	$6.50	$3.75	$0.00
GOVERNMENT PAYMENT:			
Base yield (units/ac.)	25.5	29	0
Deficiency payment ($/unit)	$0.00	$0.50	$0.00
DIRECT COSTS:			
Seed 1 (units/ac	1	1.25	1.25
($/unit)	$11.55	$6.55	$4.00
Seed 2 (units/ac	0	0	9.5
($/unit)	$0.00	$0.00	$0.50
Fertilizer 1 (units/ac.)	0	0	0
($/unit)	$0.00	$0.00	$0.00
Fertilizer 2 (units/ac.)	0	0	0
($/unit)	$0.00	$0.00	$0.00
Fertilizer 3 (units/ac.)	0	0	0
($/unit)	$0.00	$0.00	$0.00
Fertilizer application ($/ac.)	$0.00	$0.00	$0.00
Herbicide 1 (units/ac.)	0	0.12	0
($/unit)	$0.00	$1.12	$0.00
Herbicide 2 (units/ac.)	0	0	0
($/unit)	$0.00	$0.00	$0.00
Herbicide application ($/ac.)	$0.00	$0.00	$0.00
Insecticide (units/ac.)	0	0	0
($/unit)	$0.00	$0.00	$0.00
Insecticide application ($/ac.)	$0.00	$0.00	$0.00
Crop insurance ($/ac.)	$2.65	$2.16	$0.00
Storage ($/unit)	$0.11	$0.11	$0.00
Drying ($/unit)	$0.00	$0.00	$0.00
Overhead ($/ac.)	$5.50	$5.00	$2.50
Custom machine hire			
Tillage ($/ac.)	$0.00	$0.00	$0.00
Planting ($/ac.)	$0.00	$0.00	$0.00
Harvesting ($/ac.)	$0.00	$0.00	$0.00
Fuel and lubrication ($/ac.)	$5.26	$5.81	$2.58
Machinery repair ($/ac.)	$8.57	$11.38	$3.71
Crop operating loan borrowed (months)	6	6	6
Interest APR(%)	12.00	12.00	12.00
Labor 1 (hrs./ac.)	1.50	1.66	0.77
($/hr)	$6.42	$6.42	$6.42
Labor 2 (hrs./ac.)	1.29	0.00	0.00
($/hr.)	$4.28	$4.28	$4.28
FIXED COSTS:			
Interest, Housing, and Ins. on Machinery	$16.21	$16.83	$5.11
Depreciation on machinery & equipment	$17.27	$17.97	$4.95
Land Cost ($/acre)	$440	$440	$440
Real Estate Tax Percentage	1.50	1.50	1.50

----------(end of Input Section)----------

INPUT SUMMARY AND RESULTS--ROTATION D.

	Soybeans	Spring Wheat	Set Aside
RECEIPTS:			
Estimated grain yield (units/ac.).....	25.5	29.0	0.0
Estimated selling price or value ($/unit)...	$6.50	$3.75	$0.00
GOVERNMENT PAYMENT:			
Base yield (units/ac.).....	26	29	0
Deficiency payment ($/unit).....	$0.00	$0.50	$0.00
I. Total income per acre.....	$165.75	$123.25	$0.00
DIRECT COSTS:			
Seed ($/ac.).....	$11.55	$8.19	$9.75
Fertilizer ($/ac.).	$0.00	$0.00	$0.00
Fertilizer application ($/ac.).....	$0.00	$0.00	$0.00
Herbicide ($/ac.).....	$0.00	$0.13	$0.00
Herbicide application ($/ac.).....	$0.00	$0.00	$0.00
Insecticide ($/ac.).....	$0.00	$0.00	$0.00
Insecticide application ($/ac.).....	$0.00	$0.00	$0.00
Crop insurance ($/ac.).....	$2.65	$2.16	$0.00
Storage ($/ac.).....	$2.81	$3.19	$0.00
Drying ($/ac.).....	$0.00	$0.00	$0.00
Overhead ($/ac.).....	$5.50	$5.00	$2.50
Custom machine hire ($/ac.).....	$0.00	$0.00	$0.00
Fuel and lubrication ($/ac.).....	$5.26	$5.81	$2.58
Machinery repair ($/ac.).....	$8.57	$11.38	$3.71
Interest on non labor direct costs ($/ac)...	$2.15	$2.12	$1.10
Labor charge($/ac.).....	$15.15	$10.66	$4.94
II. Total direct (operating) costs.....	$53.64	$48.64	$24.58
Income over direct costs (I minus II)....	$112.11	$74.61	($24.58)
Breakeven price per unit (direct costs)..	$2.10	$1.68	ERR
FIXED COSTS:			
Interest, Housing & Ins. on machinery ($/ac)	$16.21	$16.83	$5.11
Deprec. on machinery and equipment ($/ac.)..	$17.27	$17.97	$4.95
Real estate taxes ($/ac.).....	$6.60	$6.60	$6.60
III. Total fixed costs.....	$40.08	$41.40	$16.66
IV. Production costs ($/ac., excluding land) (II plus III)	$93.72	$90.04	$41.24
Production costs ($/unit)...	$3.68	$3.10	ERR
V. Land charges ($/ac.).....	$30.80	$30.80	$30.80
VI. Total production and land costs ($/ac.). (IV plus V)	$124.52	$120.84	$72.04
Production and land costs ($/unit).....	$4.88	$4.17	ERR
Breakeven yield (units/ac.)..... (at selling price)	19.2	32.2	ERR
VII. Income over all costs ($/acre)..... (I minus VI)	$41.23	$2.41	($72.04)
Income over all costs ($/unit).....	$1.62	$0.08	ERR

WHOLE-FARM RESULTS--ROTATION D.

Acreage Distribution and Income Over All Costs

	Soybeans	Spring Wheat	Set Aside	Total
Crop Distribution (acres).....	134	91	35	260
Income Over All Costs..... ($/acre)	$41.23	$2.41	($72.04)	$12.39
Income Over All Costs..... ($/crop)	$5,525	$219	($2,521)	$3,222

****

Item	Dollars /acre
Gross Income	$129
Direct Costs (excl. Labor)	$36
Income over non-labor & non-land costs	$62
Income over non-land costs	$50
Income over all costs	$12

Farm Program Provisions:
Acreage Reduction Requirements

Crop	Non-Paid Acreage (%)	Optional Paid Acreage (%)	Optional Paid Rate ($/bu.)
Corn	***	***	***
Wheat	27.5	***	***
Oats	***	***	***
Barley	***	***	***
Sorghum	***	***	***

South Central - Rotation G. Spring Wheat - Soybeans with a fall sowing of rye - Rye - Soybeans - Rye seeded with alfalfa - Alfalfa (3 yrs.)

This rotation has 267 acres of cropland. The acreage distribution, "normal" harvested yields, and farm program wheat base yield assumed for the spreadsheet are as follows:

Crop	Acres	"Normal" Harvested Yield	Farm Program Base Yield
Spring Wheat	17	26 bu/ac.	26 bu/ac.
Soybeans	98	25 bu/ac.	--
Rye	98	31 bu/ac.	--
Set-Aside	6	--	--
Alfalfa	48	3.5 ton/ac.	--
Total	267		

The "normal" yield for soybeans and the spring wheat base yield were obtained during the on-farm interview. The "normal" yield for alfalfa was taken from Hoyt, et al. (1989). The spring wheat "normal" yield was estimated by refering to Hoyt, et al. (1989) and by reducing the yield indicated in that source, since this farmer did not have a long history of raising spring wheat. The "normal" yield for rye is a 5-year average (high and low excluded) of data from the SDASS (1989).

Participation in the farm program is usually at the minimum level. The set-aside acres are maintained with the use of a rotary mower and a minimum amount of tillage.

To accurately portray the alfalfa costs, it was assumed that each year 16 acres would be established and 16 acres would be broken up. Alfalfa is broadcast in the rye crop during the spring.

This farmer does not use any chemical herbicide or fertilizer. The "other fertilizer" applied to the soybeans is an organic adendment used to treat the seed at planting time to aid in germination.

INPUT SECTION--ROTATION G.

	Soybeans	Rye	Rye w/ Alfalfa	Alfalfa Cont	Alfalfa Brk	Spring Wheat	Set Aside
RECEIPTS:							
Estimated grain yield (units/ac.)	25.0	31.0	31.0	3.5	3.5	26.0	0.0
Estimated selling price or value ($/unit)	$6.50	$1.66	$1.66	$50.00	$50.00	$3.75	$0.00
GOVERNMENT PAYMENT:							
Base yield (units/ac.)	25	0	0	0	0	26	0
Deficiency payment ($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.50	$0.00
DIRECT COSTS:							
Seed 1 (units/ac	1	0	0	0	0	1.25	0
($/unit)	$11.05	$0.00	$0.00	$0.00	$0.00	$6.55	$0.00
Seed 2 (units/ac	1.61	0	10	0	0	0	0
($/unit)	$4.80	$0.00	$1.95	$0.00	$0.00	$0.00	$0.00
Fertilizer 1 (units/ac.)	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Fertilizer 2 (units/ac.)	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Fertilizer 3 (units/ac.)	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Other Fertilizer (units/ac.)	0.8	0	0	0	0	0	0
($/unit)	$5.25	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Fertilizer application ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Herbicide 1 (units/ac.)	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Herbicide 2 (units/ac.)	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Herbicide application ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Insecticide (units/ac.)	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Insecticide application ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Crop insurance ($/ac.)	$3.12	$0.00	$0.00	$0.00	$0.00	$1.94	$0.00
Storage ($/unit)	$0.11	$0.11	$0.11	$0.00	$0.00	$0.11	$0.00
Drying ($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Overhead ($/ac.)	$5.50	$5.00	$5.00	$5.00	$5.00	$5.00	$2.50
Custom machine hire							
Tillage ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Planting ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Harvesting ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Fuel and lubrication ($/ac.)	$6.96	$2.08	$1.19	$2.35	$4.45	$3.10	$1.05
Machinery repair ($/ac.)	$15.18	$4.55	$3.88	$7.61	$9.35	$7.11	$1.51
Crop operating loan borrowed (months)	6	6	6	6	6	6	6
Interest APR(%)	12.00	12.00	12.00	12.00	12.00	12.00	12.00
Labor 1 (hrs./ac.)	2.52	0.45	0.35	1.25	1.57	0.94	0.55
($/hr)	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42
Labor 2 (hrs./ac.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
($/hr.)	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28
FIXED COSTS:							
Interest, Housing, and Ins. on Machinery	$22.57	$8.88	$7.15	$11.19	$15.75	$12.22	$2.14
Depreciation on machinery & equipment	$24.36	$10.48	$8.84	$13.44	$17.80	$14.12	$2.18
Land Cost ($/acre)	$440	$440	$440	$440	$440	$440	$440
Real Estate Tax Percentage	1.50	1.50	1.50	1.50	1.50	1.50	1.50

----------(end of Input Section)----------

INPUT SUMMARY AND RESULTS--ROTATION G.

	Soybeans	Rye	Rye w/ Alfalfa	Alfalfa Cont	Alfalfa Brk	Spring Wheat	Set Aside
RECEIPTS:							
Estimated grain yield (units/ac.).....	25.0	31.0	31.0	3.5	3.5	26.0	0.0
Estimated selling price or value ($/unit)...	$6.50	$1.66	$1.66	$50.00	$50.00	$3.75	$0.00
GOVERNMENT PAYMENT:							
Base yield (units/ac.).....	25	0	0	0	0	26	0
Deficiency payment ($/unit).....	$0.00	$0.00	$0.00	$0.00	$0.00	$0.50	$0.00
I. Total income per acre.....	$162.50	$51.46	$51.46	$175.00	$175.00	$110.50	$0.00
DIRECT COSTS:							
Seed ($/ac.).....	$18.78	$0.00	$19.50	$0.00	$0.00	$8.19	$0.00
Fertilizer ($/ac.).	$4.20	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Fertilizer application ($/ac.).....	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Herbicide ($/ac.).....	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Herbicide application ($/ac.).....	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Insecticide ($/ac.).....	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Insecticide application ($/ac.).....	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Crop insurance ($/ac.).....	$3.12	$0.00	$0.00	$0.00	$0.00	$1.94	$0.00
Storage ($/ac.).....	$2.75	$3.41	$3.41	$0.00	$0.00	$2.86	$0.00
Drying ($/ac.).....	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Overhead ($/ac.).....	$5.50	$5.00	$5.00	$5.00	$5.00	$5.00	$2.50
Custom machine hire ($/ac.).....	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Fuel and lubrication ($/ac.).....	$6.96	$2.08	$1.19	$2.35	$4.45	$3.10	$1.05
Machinery repair ($/ac.).....	$15.18	$4.55	$3.88	$7.61	$9.35	$7.11	$1.51
Interest on non labor direct costs ($/ac)...	$3.34	$0.89	$1.95	$0.89	$1.11	$1.67	$0.30
Labor charge($/ac.).....	$16.18	$2.89	$2.25	$8.03	$10.08	$6.03	$3.53
II. Total direct (operating) costs.....	$76.01	$18.82	$37.18	$23.87	$29.99	$35.90	$8.89
Income over direct costs (I minus II)....	$86.49	$32.64	$14.28	$151.13	$145.01	$74.60	($8.89)
Breakeven price per unit (direct costs)..	$3.04	$0.61	$1.20	$6.82	$8.57	$1.38	ERR
FIXED COSTS:							
Interest, Housing & Ins. on machinery ($/ac)	$22.57	$8.88	$7.15	$11.19	$15.75	$12.22	$2.14
Deprec. on machinery and equipment ($/ac.)..	$24.36	$10.48	$8.84	$13.44	$17.80	$14.12	$2.18
Real estate taxes ($/ac.).....	$6.60	$6.60	$6.60	$6.60	$6.60	$6.60	$6.60
III. Total fixed costs.....	$53.53	$25.96	$22.59	$31.23	$40.15	$32.94	$10.92
IV. Production costs ($/ac., excluding land) (II plus III)	$129.54	$44.78	$59.77	$55.10	$70.14	$68.84	$19.81
Production costs ($/unit)...	$5.18	$1.44	$1.93	$15.74	$20.04	$2.65	ERR
V. Land charges ($/ac.).....	$30.80	$30.80	$30.80	$30.80	$30.80	$30.80	$30.80
VI. Total production and land costs ($/ac.). (IV plus V)	$160.34	$75.58	$90.57	$85.90	$100.94	$99.64	$50.61
Production and land costs ($/unit).....	$6.41	$2.44	$2.92	$24.54	$28.84	$3.83	ERR
Breakeven yield (units/ac.)..... (at selling price)	24.7	45.5	54.6	1.7	2.0	26.6	ERR
VII. Income over all costs ($/acre)..... (I minus VI)	$2.16	($24.12)	($39.11)	$89.10	$74.06	$10.86	($50.61)
Income over all costs ($/unit).....	$0.09	($0.78)	($1.26)	$25.46	$21.16	$0.42	ERR

WHOLE-FARM RESULTS--ROATION G.

Acreage Distribution and Income Over All Costs

	Soybeans	Rye	Rye w/ Alfalfa	Alfalfa Cont	Alfalfa Brk	Spring Wheat	Set Aside	Total
Crop Distribution (acres).....	98	82	16	32	16	17	6	267
Income Over All Costs..... ($/acre)	$2.16	($24.12)	($39.11)	$89.10	$74.06	$10.86	($50.61)	$5.71
Income Over All Costs..... ($/crop)	$212	($1,978)	($626)	$2,851	$1,185	$185	($304)	$1,525

****

Item	Dollars/acre
Gross Income	$117
Direct Costs (excl. labor)	$34
Income over non-labor & non-land costs	$52
Income over non-land costs	$43
Income over all costs	$6

Farm Program Provisions:
Acreage Reduction Requirements

Crop	Non-Paid Acreage (%)	Optional Paid Acreage (%)	Optional Paid Rate ($/bu.)
Corn	***	***	***
Wheat	27.5	***	***
Oats	***	***	***
Barley	***	***	***
Sorghum	***	***	***

Farms in East Central Region*

*Rotations are for farms in Lake County

East Central - Rotation H. Soybeans - Corn - Small Grain (Oats, Spring Wheat, or Barley) seeded with alfalfa - Alfalfa (1 yr.)

The 720 acres of cropland are divided so approximately one-fourth of the acreage is used in each of the four parts of the rotation.

The acreage distribution, "normal" harvested yields, and farm program base yields assumed for the spreadsheet are as follows:

Crop	Acres	"Normal" Harvested Yield	Farm Program Base Yield
Soybeans	172	24 bu/ac.	--
Corn	162	85 bu/ac.	70 bu/ac.
Oats	66	43 bu/ac.	60 bu/ac.
Spring Wheat	40	18 bu/ac.	30 bu/ac.
Alfalfa	140	2.5 ton/ac.	--
Set-Aside	140	--	--
Total	720		

The "normal" harvested yield for each crop is a 5-year (1985-1989) average (with the high and low yields thrown out) of yield data reported by the farmer. The farm program base yield information was obtained during the on-farm interview.

Participation in the farm program fluctuates between the minimum and higher levels. Small grain (oats and/or barley) is used as a cover crop on the farm program set-aside areas. Alfalfa is established on the set-aside acres by interseeding it with the small grain.

Some chemical herbicides are used on a small amount of the corn and soybean acreage. For budgeting purposes, it was decided to spread the herbicide costs over all the corn and soybean acres. These costs are shown in the "herbicide application" row of the budget spreadsheet.

INPUT SECTION--ROTATION H.

	Corn	Soybeans	Spring Wheat	Oats	Oats w/A non-paid setaside	Barley w/A n-p setaside	Barley w/A pcorn setaside	Barley w/A corn 0/92	Alfalfa
RECEIPTS:									
Estimated grain yield (units/ac.)	85.0	24.0	18.0	43.0	0.0	0.0	0.0	0.0	2.5
Estimated selling price or value ($/unit)	$1.90	$6.50	$3.75	$1.76	$0.00	$0.00	$0.00	$0.00	$50.00
GOVERNMENT PAYMENT:									
Base yield (units/ac.)	70	24	30	60	0	0	70	70	0
Deficiency payment ($/unit)	$0.89	$0.00	$0.50	$0.00	$0.00	$0.00	$1.75	$0.82	$0.00
DIRECT COSTS:									
Seed 1 (units/ac	18	1	1	2	2	2	2	2	0
($/unit)	$0.80	$11.05	$6.55	$4.48	$2.01	$2.15	$2.15	$2.15	$0.00
Seed 2 (units/ac	0	0	0	0	5	5	5	5	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$1.95	$1.95	$1.95	$1.95	$0.00
Fertilizer 1 (units/ac.)	0	0	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Fertilizer 2 (units/ac.)	0	0	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Fertilizer 3 (units/ac.)	0	0	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Fertilizer application ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Herbicide 1 (units/ac.)	0	0	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Herbicide 2 (units/ac.)	0	0	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Herbicide application ($/ac.)	$0.50	$3.50	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Insecticide (units/ac.)	0	0	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Insecticide application ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Crop insurance ($/ac.)	$3.34	$3.06	$2.19	$1.12	$0.00	$0.00	$0.00	$0.00	$0.00
Storage ($/unit)	$0.11	$0.11	$0.11	$0.11	$0.00	$0.00	$0.00	$0.00	$0.00
Drying ($/unit)	$0.15	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Overhead ($/ac.)	$5.50	$5.50	$5.00	$5.00	$2.50	$2.50	$2.50	$2.50	$5.00
Custom machine hire									
Tillage ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Planting ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Harvesting ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Fuel and lubrication ($/ac.)	$5.88	$4.54	$3.13	$3.33	$2.45	$2.45	$2.45	$2.45	$5.24
Machinery repair ($/ac.)	$10.92	$8.85	$9.46	$9.82	$5.59	$5.59	$5.59	$5.59	$8.92
Crop operating loan borrowed (months)	6	6	6	6	6	6	6	6	6
Interest APR(%)	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
Labor 1 (hrs./ac.)	2.13	1.64	1.12	1.21	1.07	1.07	1.07	1.07	1.77
($/hr)	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42
Labor 2 (hrs./ac.)	0.00	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00
($/hr.)	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28
FIXED COSTS:									
Interest, Housing, and Ins. on Machinery	$19.09	$16.24	$14.30	$14.62	$6.84	$6.84	$6.84	$6.84	$14.42
Depreciation on machinery & equipment	$20.44	$17.82	$16.07	$16.37	$7.14	$7.14	$7.14	$7.14	$15.21
Land Cost ($/acre)	$420	$420	$420	$420	$420	$420	$420	$420	$420
Real Estate Tax Percentage	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50

----------(end of Input Section)----------

INPUT SUMMARY AND RESULTS--ROTATION H.

	Corn	Soybeans	Spring Wheat	Oats	Oats w/A non-paid setaside	Barley w/A n-p setaside	Barley w/A pcorn setaside	Barley w/A corn 0/92	Alfalfa
RECEIPTS:									
Estimated grain yield (units/ac.).....	85.0	24.0	18.0	43.0	0.0	0.0	0.0	0.0	2.5
Estimated selling price or value ($/unit)...	$1.90	$6.50	$3.75	$1.76	$0.00	$0.00	$0.00	$0.00	$50.00
GOVERNMENT PAYMENT:									
Base yield (units/ac.).....	70	24	30	60	0	0	70	70	0
Deficiency payment ($/unit).....	$0.89	$0.00	$0.50	$0.00	$0.00	$0.00	$1.75	$0.82	$0.00
I. Total income per acre.....	$223.80	$156.00	$82.50	$75.68	$0.00	$0.00	$122.50	$57.40	$125.00
DIRECT COSTS:									
Seed ($/ac.).....	$14.40	$11.05	$6.55	$8.96	$13.77	$14.05	$14.05	$14.05	$0.00
Fertilizer ($/ac.).	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Fertilizer application ($/ac.).....	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Herbicide ($/ac.).....	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Herbicide application ($/ac.).....	$0.50	$3.50	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Insecticide ($/ac.).....	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Insecticide application ($/ac.).....	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Crop insurance ($/ac.).....	$3.34	$3.06	$2.19	$1.12	$0.00	$0.00	$0.00	$0.00	$0.00
Storage ($/ac.).....	$9.35	$2.64	$1.98	$4.73	$0.00	$0.00	$0.00	$0.00	$0.00
Drying ($/ac.).....	$12.75	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Overhead ($/ac.).....	$5.50	$5.50	$5.00	$5.00	$2.50	$2.50	$2.50	$2.50	$5.00
Custom machine hire ($/ac.).....	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Fuel and lubrication ($/ac.).....	$5.88	$4.54	$3.13	$3.33	$2.45	$2.45	$2.45	$2.45	$5.24
Machinery repair ($/ac.).....	$10.92	$8.85	$9.46	$9.82	$5.59	$5.59	$5.59	$5.59	$8.92
Interest on non labor direct costs ($/ac)...	$3.71	$2.32	$1.68	$1.95	$1.44	$1.46	$1.46	$1.46	$1.13
Labor charge($/ac.).....	$13.67	$12.58	$7.19	$7.77	$6.87	$6.87	$6.87	$6.87	$11.36
II. Total direct (operating) costs.....	$80.03	$54.04	$37.18	$42.68	$32.62	$32.91	$32.91	$32.91	$31.66
Income over direct costs (I minus II)....	$143.77	$101.96	$45.32	$33.00	($32.62)	($32.91)	$89.59	$24.49	$93.34
Breakeven price per unit (direct costs)..	$0.94	$2.25	$2.07	$0.99	ERR	ERR	ERR	ERR	$12.66
FIXED COSTS:									
Interest, Housing & Ins. on machinery ($/ac)	$19.09	$16.24	$14.30	$14.62	$6.84	$6.84	$6.84	$6.84	$14.42
Deprec. on machinery and equipment ($/ac.)..	$20.44	$17.82	$16.07	$16.37	$7.14	$7.14	$7.14	$7.14	$15.21
Real estate taxes ($/ac.).....	$6.30	$6.30	$6.30	$6.30	$6.30	$6.30	$6.30	$6.30	$6.30
III. Total fixed costs.....	$45.83	$40.36	$36.67	$37.29	$20.28	$20.28	$20.28	$20.28	$35.93
IV. Production costs ($/ac., excluding land) (II plus III)	$125.86	$94.40	$73.85	$79.97	$52.90	$53.19	$53.19	$53.19	$67.59
Production costs ($/unit)...	$1.48	$3.93	$4.10	$1.86	ERR	ERR	ERR	ERR	$27.03
V. Land charges ($/ac.).....	$29.40	$29.40	$29.40	$29.40	$29.40	$29.40	$29.40	$29.40	$29.40
VI. Total production and land costs ($/ac.). (IV plus V)	$155.26	$123.80	$103.25	$109.37	$82.30	$82.59	$82.59	$82.59	$96.99
Production and land costs ($/unit).....	$1.83	$5.16	$5.74	$2.54	ERR	ERR	ERR	ERR	$38.79
Breakeven yield (units/ac.)..... (at selling price)	81.7	19.0	27.5	62.1	ERR	ERR	ERR	ERR	1.9
VII. Income over all costs ($/acre)..... (I minus VI)	$68.54	$32.20	($20.75)	($33.69)	($82.30)	($82.59)	$39.91	($25.19)	$28.01
Income over all costs ($/unit).....	$0.81	$1.34	($1.15)	($0.78)	ERR	ERR	ERR	ERR	$11.21

WHOLE FARM RESULTS--ROTATION H.

Acreage Distribution and Income over All Costs.

	Corn	Soybeans	Spring Wheat	Oats	Oats w/A non-paid setaside	Barley w/A n-p setaside	Barley w/A pcorn setaside	Barley w/A corn 0/92	Alfalfa	Total
Crop Distribution (acres)..	162	172	40	66	34	63	29	14	140	720
Income Over All Costs..... ($/acre)	$68.54	$32.20	($20.75)	($33.69)	($82.30)	($82.59)	$39.91	($25.19)	$28.01	$14.33
Income Over All Costs..... ($/crop)	$11,104	$5,539	($830)	($2,224)	($2,798)	($5,203)	$1,157	($353)	$3,922	$10,314

Item	Dollars/acre
Gross Income	$129
Direct cost (excl.labor)	$39
Income over non-labor & non-land costs	$61
Income over non-land costs	$50
Income over all costs	$14

Farm Program Provisions:
Acreage Reduction Requirements

Crop	Non-Paid Acreage (%)	Optional Paid Acreage (%)	Optional Paid Rate ($/bu)
Corn	20.0	10.0	1.75
Wheat	27.5	***	***
Oats	5.0	***	***
Barley	20.0	***	***
Sorghum	***	***	***

East Central - Rotation K. Flax or Soybeans - Spring Wheat or Corn - Corn, Barley, or Spring Wheat seeded with Sweet Clover - Soybeans - Corn - Barley seeded with Alfalfa - Alfalfa (3 yrs.)

This farm of 500 acres has around 260 acres that are farmed without the use of purchased chemical fertilizers and herbicides. The other 240 acres are farmed using chemical fertilizers and herbicides.

In the spreadsheet, we modeled the acres farmed without the use of chemical fertilizers and herbicides. The acreage distribution, "normal" harvested yields, and farm program base yields are as follows:

Crop	Acres	"Normal" Harvested Yield	Farm Program Base Yield
Soybeans	58	25 bu/ac.	--
Spring Wheat	29	35 bu/ac.	30 bu/ac.
Set-Aside (Sweet Clover)	30	--	--
Corn	29	65 bu/ac.	65 bu/ac.
Barley	29	45 bu/ac.	45 bu/ac.
Alfalfa	87	2.8 ton/ac.	--
Total	262		

The "normal" harvested yields for barley, spring wheat, and alfalfa were taken from Hoyt, et al. (1989). The yields for corn and soybeans were also taken from Hoyt, et al. (1989); however, the yields indicated in that source were adjusted downward to reflect the farmer's opinion that corn and soybean yields obtained by one who uses chemical fertilizers and herbicides would be higher than his. Base yield information was obtained during the on-farm interview.

Participation in the farm program fluctuates between the minimum and higher levels. We used the higher level on corn and minimum level on wheat and barley. A cover crop of sweet clover is used on the set-aside acres. The sweet clover is usually plowed down in July and, in order to reduce erosion, some barley may be broadcast for winter cover. The costs for a barley cover crop were not included in the spreadsheet because this practice is not always done.

To accurately reflect the alfalfa costs, it was assumed that each year 29 acres would be established and 29 acres would be broken up. This farmer normally establishes alfalfa with barley as a nurse crop.

INPUT SECTION--ROTATION K.

	Soybeans	S.Wheat w/Clover	Clover non-paid Setaside	Clover paid Setaside	Corn	Barley w/ Alf	Alfalfa Cont	Alfalfa Brk
RECEIPTS:								
Estimated grain yield (units/ac.)	25.0	35.0	0.0	0.0	65.0	45.0	2.8	2.8
Estimated selling price or value ($/unit)	$6.50	$3.75	$0.00	$0.00	$1.90	$1.90	$50.00	$50.00
GOVERNMENT PAYMENT:								
Base yield (units/ac.)	25	30	0	65	65	45	0	0
Deficiency payment ($/unit)	$0.00	$0.50	$0.00	$1.75	$0.89	$0.53	$0.00	$0.00
DIRECT COSTS:								
Seed 1 (units/ac	1	1.25	0	0	18	1.25	0	0
($/unit)	$11.05	$6.55	$0.00	$0.00	$0.80	$4.80	$0.00	$0.00
Seed 2 (units/ac	0	9.5	0	0	0	10	0	0
($/unit)	$0.00	$0.50	$0.00	$0.00	$0.00	$1.95	$0.00	$0.00
Fertilizer 1 (units/ac.)	0	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Fertilizer 2 (units/ac.)	0	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Fertilizer 3 (units/ac.)	0	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Fertilizer application ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Herbicide 1 (units/ac.)	0	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Herbicide 2 (units/ac.)	0	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Herbicide application ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Insecticide (units/ac.)	0	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Insecticide application ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Crop insurance ($/ac.)	$3.19	$2.19	$0.00	$0.00	$3.11	$2.27	$0.00	$0.00
Storage ($/unit)	$0.11	$0.11	$0.00	$0.00	$0.11	$0.11	$0.00	$0.00
Drying ($/unit)	$0.00	$0.00	$0.00	$0.00	$0.15	$0.00	$0.00	$0.00
Overhead ($/ac.)	$5.50	$5.00	$2.50	$2.50	$5.50	$5.00	$5.00	$5.00
Custom machine hire								
Tillage ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Planting ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Harvesting ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Fuel and lubrication ($/ac.)	$5.10	$2.33	$1.96	$1.96	$4.25	$3.89	$2.01	$3.97
Machinery repair ($/ac.)	$9.48	$6.81	$1.62	$1.62	$8.95	$8.18	$6.97	$8.59
Crop operating loan borrowed (months)	6	6	6	6	6	6	6	6
Interest APR(%)	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
Labor 1 (hrs./ac.)	1.63	0.77	0.41	0.41	1.49	1.18	1.16	1.57
($/hr)	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42
Labor 2 (hrs./ac.)	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
($/hr.)	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28
FIXED COSTS:								
Interest, Housing, and Ins. on Machinery	$17.28	$12.30	$3.12	$3.12	$16.51	$15.01	$10.24	$13.36
Depreciation on machinery & equipment	$18.38	$13.83	$2.61	$2.61	$17.96	$16.12	$11.97	$14.58
Land Cost ($/acre)	$420	$420	$420	$420	$420	$420	$420	$420
Real Estate Tax Percentage	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50

----------(end of Input Section)----------

INPUT SUMMARY AND RESULTS--ROTATION K.

	Soybeans	S.Wheat w/Clover	Clover non-paid Setaside	Clover paid Setaside	Corn	Barley w/Alf	Alfalfa Cont	Alfalfa Brk
RECEIPTS:								
Estimated grain yield (units/ac.)	25.0	35.0	0.0	0.0	65.0	45.0	2.8	2.8
Estimated selling price or value ($/unit)	$6.50	$3.75	$0.00	$0.00	$1.90	$1.90	$50.00	$50.00
GOVERNMENT PAYMENT:								
Base yield (units/ac.)	25	30	0	65	65	45	0	0
Deficiency payment ($/unit)	$0.00	$0.50	$0.00	$1.75	$0.89	$0.53	$0.00	$0.00
I. Total income per acre	$162.50	$146.25	$0.00	$113.75	$181.35	$109.35	$140.00	$140.00
DIRECT COSTS:								
Seed ($/ac.)	$11.05	$12.94	$0.00	$0.00	$14.40	$25.50	$0.00	$0.00
Fertilizer ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Fertilizer application ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Herbicide ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Herbicide application ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Insecticide ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Insecticide application ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Crop insurance ($/ac.)	$3.19	$2.19	$0.00	$0.00	$3.11	$2.27	$0.00	$0.00
Storage ($/ac.)	$2.75	$3.85	$0.00	$0.00	$7.15	$4.95	$0.00	$0.00
Drying ($/ac.)	$0.00	$0.00	$0.00	$0.00	$9.75	$0.00	$0.00	$0.00
Overhead ($/ac.)	$5.50	$5.00	$2.50	$2.50	$5.50	$5.00	$5.00	$5.00
Custom machine hire ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Fuel and lubrication ($/ac.)	$5.10	$2.33	$1.96	$1.96	$4.25	$3.89	$2.01	$3.97
Machinery repair ($/ac.)	$9.48	$6.81	$1.62	$1.62	$8.95	$8.18	$6.97	$8.59
Interest on non labor direct costs ($/ac)	$2.19	$1.96	$0.36	$0.36	$3.14	$2.95	$0.83	$1.04
Labor charge($/ac.)	$15.47	$4.94	$2.63	$2.63	$9.57	$7.58	$7.45	$10.08
II. Total direct (operating) costs	$54.73	$40.02	$9.07	$9.07	$65.81	$60.31	$22.25	$28.68
Income over direct costs (I minus II)	$107.77	$106.23	($9.07)	$104.68	$115.54	$49.04	$117.75	$111.32
Breakeven price per unit (direct costs)	$2.19	$1.14	ERR	ERR	$1.01	$1.34	$7.95	$10.24
FIXED COSTS:								
Interest, Housing & Ins. on machinery ($/ac)	$17.28	$12.30	$3.12	$3.12	$16.51	$15.01	$10.24	$13.36
Deprec. on machinery and equipment ($/ac.)	$18.38	$13.83	$2.61	$2.61	$17.96	$16.12	$11.97	$14.58
Real estate taxes ($/ac.)	$6.30	$6.30	$6.30	$6.30	$6.30	$6.30	$6.30	$6.30
III. Total fixed costs	$41.96	$32.43	$12.03	$12.03	$40.77	$37.43	$28.51	$34.24
IV. Production costs ($/ac., excluding land) (II plus III)	$96.69	$72.45	$21.10	$21.10	$106.58	$97.74	$50.76	$62.92
Production costs ($/unit)	$3.87	$2.07	ERR	ERR	$1.64	$2.17	$18.13	$22.47
V. Land charges ($/ac.)	$29.40	$29.40	$29.40	$29.40	$29.40	$29.40	$29.40	$29.40
VI. Total production and land costs ($/ac.). (IV plus V)	$126.09	$101.85	$50.50	$50.50	$135.98	$127.14	$80.16	$92.32
Production and land costs ($/unit)	$5.04	$2.91	ERR	ERR	$2.09	$2.83	$28.63	$32.97
Breakeven yield (units/ac.) (at selling price)	19.4	27.2	ERR	ERR	71.6	66.9	1.6	1.8
VII. Income over all costs ($/acre) (I minus VI)	$36.41	$44.40	($50.50)	$63.25	$45.37	($17.79)	$59.84	$47.68
Income over all costs ($/unit)	$1.46	$1.27	ERR	ERR	$0.70	($0.40)	$21.37	$17.03

WHOLE-FARM RESULTS--ROTATION K.

Acreage Distribution and Income Over All Costs

	Soybeans	S.Wheat w/Clover	Clover non-paid Setaside	Clover paid Setaside	Corn	Barley w/Alf	Alfalfa Cont	Alfalfa Brk	Total
Crop Distribution (acres).....	58	29	26	4	29	29	58	29	262
Income Over All Costs..... ($/acre)	$36.41	$44.40	($50.50)	$63.25	$45.37	($17.79)	$59.84	$47.68	$30.50
Income Over All Costs..... ($/crop)	$2,112	$1,287	($1,313)	$253	$1,316	($516)	$3,470	$1,383	$7,992

Item	Dollars/acre
Gross Income	$133
Direct costs (excl. labor)	$31
Income over non-labor & non-land costs	$75
Income over non-land costs	$66
Income over all costs	$31

Farm Program Provisions:
Acreage Reduction Requirements

Crop	Non-Paid Acreage (%)	Optional Paid Acreage (%)	Optional Paid Rate ($/bu)
Corn	20	10	$1.75
Wheat	27.5	***	***
Oats	***	***	***
Barley	20	***	***
Sorghum	***	***	***

East Central - Rotation L. Soybeans - Corn - Oats seeded with Sweet Clover or Alfalfa - Sweet Clover Summer Fallow

A majority of the 1,060 acres of cropland on this farm are grown with this rotation. However, some alfalfa, flax, and rye are also grown.

The acreage distribution, "normal" harvested yields, and farm program base yields assumed for the spreadsheet are as follows:

Crop	Acres	"Normal" Harvested Yield	Farm Program Base Yield
Soybeans	180	27 bu/ac.	--
Corn (grain)	175	75 bu/ac.	69 bu/ac.
Corn (silage)	25	9.0 ton/ac.	69 bu/ac.
Oats	200	65 bu/ac.	59 bu/ac.
Set-Aside	180	--	--
Alfalfa	100	2.8 ton/ac.	--
Flax	100	22 bu/ac.	--
Rye	100	45 bu/ac.	--
Total	1,060		

All "normal" harvested yields, except for corn silage and alfalfa, were obtained during the on-farm interview. The silage yield is a 5-year average (high and low yield thrown out) of data from SDASS (1986, 1987, 1988, and 1989). The alfalfa yield was taken from Hoyt, et al. (1989). The farm program base yields were obtained during the interview.

Participation in the farm program is usually at the higher levels in order to maximize the sweet clover acreage in the rotation. Sweet clover seeded with oats provides set-aside acreage for the year after the oats is harvested. The sweet clover is usually incorporated with a disc during late summer. Sweet clover may also be harvested for seed, but provisions for this were not included in the spreadsheet, because all the sweet clover acreage was used to meet the set-aside requirements.

To accurately portray the alfalfa costs, it was assumed that each year 20 acres would be established and 20 acres would be broken up. The alfalfa is established with oats as a nurse crop.

Some purchased chemical fertilizers and herbicides are sometimes used, but costs for these were not included in the spreadsheet because they are not applied on a regular basis.

PUT SECTION--ROTATION L.

	Corn Combine	Corn Silage	Oats w/ Swt Cl	Oats w/ Alfalfa	Corn Pd Div	Corn Pd 0-92	Barley Pd Div	Barley Pd 0-92	Set Asd Swt Cl	Soybean	Alfalfa Cont	Alfalfa Brk	Flax	Rye
CEIPTS:														
stimated grain yield (units/ac.)	75.0	9.0	65.0	65.0	0.0	0.0	0.0	0.0	0.0	27.0	2.8	2.8	22.0	45.0
stimated selling price or value ($/unit)	$1.90	$19.10	$1.76	$1.76	$0.00	$0.00	$0.00	$0.00	$0.00	$6.50	$50.00	$50.00	$5.05	$1.66
VERNMENT PAYMENT:														
ase yield (units/ac.)	69	69	59	59	69	69	44	44	0	27	0	0	22	0
efficiency payment ($/unit)	$0.89	$0.89	$0.00	$0.00	$1.75	$0.82	$1.40	$0.49	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
RECT COSTS:														
eed 1 (units/ac	18	18	2.5	2.5	0	0	0	0	0	1	0	0	0.86	0
($/unit)	$0.80	$0.80	$4.48	$4.48	$0.00	$0.00	$0.00	$0.00	$0.00	$11.05	$0.00	$0.00	$9.25	$0.00
eed 2 (units/ac	0	0	9.5	10	0	0	0	0	0	0	0	0	1.61	0
($/unit)	$0.00	$0.00	$0.50	$1.95	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$4.80	$0.00
ertilizer 1 (units/ac.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
ertilizer 2 (units/ac.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
ertilizer 3 (units/ac.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
ertilizer application ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
erbicide 1 (units/ac.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
erbicide 2 (units/ac.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
erbicide application ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
nsecticide (units/ac.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
($/unit)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
nsecticide application ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
rop insurance ($/ac.)	$3.30	$3.03	$1.10	$1.10	$0.00	$0.00	$0.00	$0.00	$0.00	$3.44	$0.00	$0.00	$3.26	$0.00
torage ($/unit)	$0.11	$4.00	$0.11	$0.11	$0.00	$0.00	$0.00	$0.00	$0.00	$0.11	$0.00	$0.00	$0.11	$0.11
rying ($/unit)	$0.15	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
verhead ($/ac.)	$5.50	$5.50	$5.00	$5.00	$2.50	$2.50	$2.50	$2.50	$2.50	$5.50	$5.00	$5.00	$5.00	$5.00
ustom machine hire														
Tillage ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Planting ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Harvesting ($/ac.)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
uel and lubrication ($/ac.)	$4.27	$6.80	$3.96	$3.96	$0.88	$0.88	$0.88	$0.88	$0.88	$5.16	$3.39	$5.35	$4.42	$2.27
achinery repair ($/ac.)	$8.50	$12.89	$12.53	$12.53	$1.08	$1.08	$1.08	$1.08	$1.08	$9.00	$10.93	$12.55	$11.02	$6.05
rop operating loan borrowed (months)	6	6	6	6	6	6	6	6	6	6	6	6	6	6
nterest APR(%)	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
abor 1 (hrs./ac.)	1.57	2.20	1.51	1.51	0.29	0.29	0.29	0.29	0.29	1.76	1.63	2.04	1.64	0.65
($/hr)	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42	$6.42
abor 2 (hrs./ac.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.60	0.00	0.00	0.00	0.00
($/hr.)	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28	$4.28
ED COSTS:														
nterest, Housing, and Ins. on Machinery	$14.91	$15.63	$15.31	$15.31	$2.84	$2.84	$2.84	$2.84	$2.84	$17.48	$12.87	$15.99	$16.22	$10.42
epreciation on machinery & equipment	$16.49	$15.16	$17.19	$17.19	$2.72	$2.72	$2.72	$2.72	$2.72	$18.58	$14.58	$17.19	$18.34	$11.81
and Cost ($/acre)	$420	$420	$420	$420	$420	$420	$420	$420	$420	$420	$420	$420	$420	$420
eal Estate Tax Percentage	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50

(end of Input Section)

INPUT SUMMARY AND RESULTS--ROTATION L.

	Corn Combine	Corn Silage	Oats w/ Swt Cl	Oats w/ Alfalfa	Corn Pd Div	Corn Pd 0-92	Barley Pd Div	Barley Pd 0-92	Set Asd Swt Cl	Soybean	Alfalfa Cont	Alfalfa Brk	Flax	Ry
RECEIPTS:														
Estimated grain yield (units/ac.).....	75.0	9.0	65.0	65.0	0.0	0.0	0.0	0.0	0.0	27.0	2.8	2.8	22.0	45.
Estimated selling price or value ($/unit)...	$1.90	$19.10	$1.76	$1.76	$0.00	$0.00	$0.00	$0.00	$0.00	$6.50	$50.00	$50.00	$5.05	$1.6
GOVERNMENT PAYMENT:														
Base yield (units/ac.).....	69	69	59	59	69	69	44	44	0	27	0	0	22	
Deficiency payment ($/unit).....	$0.89	$0.89	$0.00	$0.00	$1.75	$0.82	$1.40	$0.49	$0.00	$0.00	$0.00	$0.00	$0.00	$0.0
I. Total income per acre.....	$203.91	$233.31	$114.40	$114.40	$120.75	$56.58	$61.60	$21.56	$0.00	$175.50	$140.00	$140.00	$111.10	$74.7
DIRECT COSTS:														
Seed ($/ac.).....	$14.40	$14.40	$15.95	$30.70	$0.00	$0.00	$0.00	$0.00	$0.00	$11.05	$0.00	$0.00	$15.68	$0.0
Fertilizer ($/ac.).	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.0
Fertilizer application ($/ac.).....	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.0
Herbicide ($/ac.).....	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.0
Herbicide application ($/ac.).....	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.0
Insecticide ($/ac.).....	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.0
Insecticide application ($/ac.).....	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.0
Crop insurance ($/ac.).....	$3.30	$3.03	$1.10	$1.10	$0.00	$0.00	$0.00	$0.00	$0.00	$3.44	$0.00	$0.00	$3.26	$0.0
Storage ($/ac.).....	$8.25	$36.00	$7.15	$7.15	$0.00	$0.00	$0.00	$0.00	$0.00	$2.97	$0.00	$0.00	$2.42	$4.9
Drying ($/ac.).....	$11.25	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.0
Overhead ($/ac.).....	$5.50	$5.50	$5.00	$5.00	$2.50	$2.50	$2.50	$2.50	$2.50	$5.50	$5.00	$5.00	$5.00	$5.0
Custom machine hire ($/ac.).....	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.0
Fuel and lubrication ($/ac.).....	$4.27	$6.80	$3.96	$3.96	$0.88	$0.88	$0.88	$0.88	$0.88	$5.16	$3.39	$5.35	$4.42	$2.2
Machinery repair ($/ac.).....	$8.50	$12.89	$12.53	$12.53	$1.08	$1.08	$1.08	$1.08	$1.08	$9.00	$10.93	$12.55	$11.02	$6.0
Interest on non labor direct costs ($/ac)...	$3.28	$4.65	$2.70	$3.58	$0.26	$0.26	$0.26	$0.26	$0.26	$2.20	$1.14	$1.36	$2.47	$1.0
Labor charge($/ac.).....	$10.08	$14.12	$9.69	$9.69	$1.86	$1.86	$1.86	$1.86	$1.86	$18.15	$10.46	$13.10	$10.53	$4.1
II. Total direct (operating) costs.....	$68.83	$97.40	$58.09	$73.72	$6.59	$6.59	$6.59	$6.59	$6.59	$57.46	$30.93	$37.35	$54.81	$23.5
Income over direct costs (I minus II)....	$135.08	$135.91	$56.31	$40.68	$114.16	$49.99	$55.01	$14.97	($6.59)	$118.04	$109.07	$102.65	$56.29	$51.
Breakeven price per unit (direct costs)..	$0.92	$10.82	$0.89	$1.13	ERR	ERR	ERR	ERR	ERR	$2.13	$11.05	$13.36	$2.49	$0.5
FIXED COSTS:														
Interest, Housing & Ins. on machinery ($/ac)	$14.91	$15.63	$15.31	$15.31	$2.84	$2.84	$2.84	$2.84	$2.84	$17.48	$12.87	$15.99	$16.22	$10.4
Deprec. on machinery and equipment ($/ac.)..	$16.49	$15.16	$17.19	$17.19	$2.72	$2.72	$2.72	$2.72	$2.72	$18.58	$14.58	$17.19	$18.34	$11.8
Real estate taxes ($/ac.).....	$6.30	$6.30	$6.30	$6.30	$6.30	$6.30	$6.30	$6.30	$6.30	$6.30	$6.30	$6.30	$6.30	$6.3
III. Total fixed costs.....	$37.70	$37.09	$38.80	$38.80	$11.86	$11.86	$11.86	$11.86	$11.86	$42.36	$33.75	$39.48	$40.86	$28.5
IV. Production costs ($/ac., excluding land) (II plus III)	$106.53	$134.49	$96.89	$112.52	$18.45	$18.45	$18.45	$18.45	$18.45	$99.82	$64.68	$76.83	$95.67	$52.0
Production costs ($/unit)...	$1.42	$14.94	$1.49	$1.73	ERR	ERR	ERR	ERR	ERR	$3.70	$23.10	$27.44	$4.35	$1.1
V. Land charges ($/ac.).....	$29.40	$29.40	$29.40	$29.40	$29.40	$29.40	$29.40	$29.40	$29.40	$29.40	$29.40	$29.40	$29.40	$29.4
VI. Total production and land costs ($/ac.). (IV plus V)	$135.93	$163.89	$126.29	$141.92	$47.85	$47.85	$47.85	$47.85	$47.85	$129.22	$94.08	$106.23	$125.07	$81.4
Production and land costs ($/unit).....	$1.81	$18.21	$1.94	$2.18	ERR	ERR	ERR	ERR	ERR	$4.79	$33.60	$37.94	$5.68	$1.8
Breakeven yield (units/ac.)..... (at selling price)	71.5	8.6	71.8	80.6	ERR	ERR	ERR	ERR	ERR	19.9	1.9	2.1	24.8	49
VII. Income over all costs ($/acre)..... (I minus VI)	$67.98	$69.42	($11.89)	($27.52)	$72.90	$8.73	$13.75	($26.29)	($47.85)	$46.28	$45.92	$33.77	($13.97)	($6.
Income over all costs ($/unit).....	$0.91	$7.71	($0.18)	($0.42)	ERR	ERR	ERR	ERR	ERR	$1.71	$16.40	$12.06	($0.63)	($0.

WHOLE-FARM RESULTS--ROTATION L.

Acreage Distribution and Income Over All Costs

	Corn Combine	Corn Silage	Oats w/ Swt Cl	Oats w/ Alfalfa	Corn Pd Div	Corn Pd 0-92	Barley Pd Div	Barley Pd 0-92	Set Asd Swt Cl	Soybean	Alfalfa Cont	Alfalfa Brk	Flax	Rye	Total
Crop Distribution (acres).....	175	25	180	20	34	38	4	28	76	180	80	20	100	100	1060
Income Over All Costs..... ($/acre)	$67.98	$69.42	($11.89)	($27.52)	$72.90	$8.73	$13.75	($26.29)	($47.85)	$46.28	$45.92	$33.77	($13.97)	($6.75)	$18.91
Income Over All Costs..... ($/crop)	$11,897	$1,736	($2,141)	($550)	$2,479	$332	$55	($736)	($3,636)	$8,330	$3,674	$675	($1,397)	($675)	$20,042

Item	Dollars/acre
Gross Income	$128
Direct costs (excl. labor)	$37
Income over non-labor & non-land costs	$64
Income over non-land costs	$55
Income over all costs	$19

Farm Program Provisions:
Acreage Reduction Requirements

Crop	Non-Paid Acreage (%)	Optional Paid Acreage (%)	Optional Paid Rate ($/bu)
Corn	20	10	$1.75
Wheat	***	***	***
Oats	***	***	***
Barley	20	10	$1.40
Sorghum	***	***	***

Farms in Northeast Region*

*In the Northeast Region, Rotations R and S are for farms in Brown County and Rotation Q is for a farm in Roberts County.

Northeast - Rotation Q. Summer Fallow with a fall seeding of Winter Wheat or Rye - Rye or Winter Wheat - Soybeans - Sunflowers - Millet

This farm of 330 acres has about 175 acres that are farmed without the use of purchased chemical herbicides and fertilizers. The other 155 acres are in a soybean-soybean-wheat rotation on which some chemical herbicides and fertilizers are used.

In the spreadsheet, we modeled the acres farmed without the use of chemical fertilizers and herbicides. The "other fertilizer" is an organic amendment used to treat the seed at planting time to aid in germination. The approximate acreage distribution, "normal" harvested yields, and farm program wheat base yield assumed for the spreadsheet are as follows:

Crop	Acres	"Normal" Harvested Yield	Farm Program Base Yield
Summer Fallow	38	--	--
Winter Wheat	31	35 bu/ac.	25 bu/ac.
Soybeans	36	30 bu/ac.	--
Sunflowers	36	1400 lbs/ac.	--
Millet	36	2,000 lbs/ac. (35.7 bu/ac.)	--
Total	177		

The "normal" harvested yields for soybeans, sunflowers, and millet were obtained during the on-farm interview. The winter wheat yield came from Hoyt, et al. (1989). The farm program base yield was obtained during the interview.

Participation in the farm program is usually at the higher levels. The required and paid set-aside acreage for the Federal farm program is satisfied by the summer fallow ground. Fallow is maintained with frequent tillage throughout the summer. Winter wheat is planted on this fallow ground in the fall.