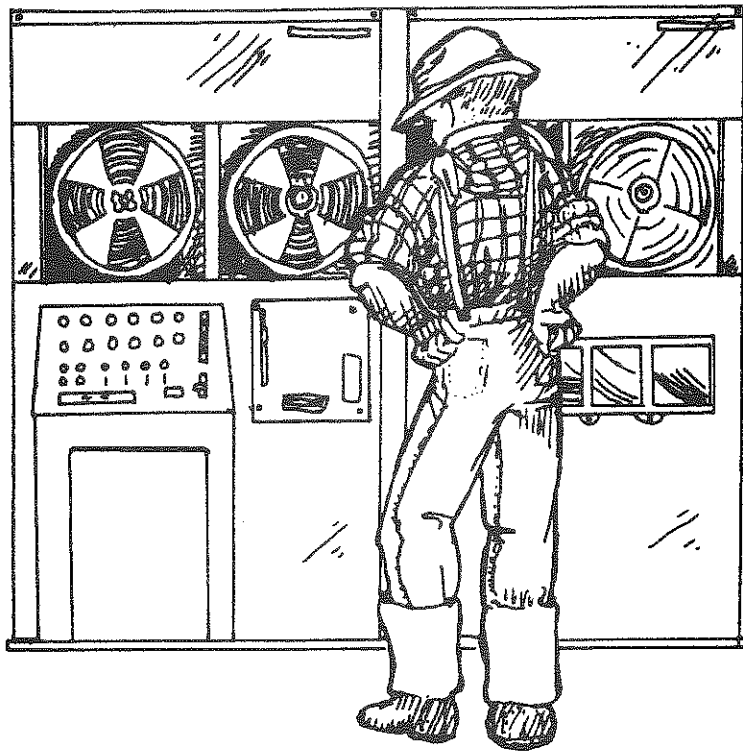


December 1983

A.E. Res. 83-23

Profitability and Financial Feasibility of Major Capital Investments: A Computer Program

NEWPLAN PROGRAM 50 FORM 4



Eddy L. LaDue
George L. Casler

Department of Agricultural Economics
Cornell University Agricultural Experiment Station
New York State College of Agriculture and Life Sciences
A Statutory College of the State University
Cornell University, Ithaca, New York 14853

It is the policy of Cornell University actively to support equality of educational and employment opportunity. No person shall be denied admission to any educational program or activity or be denied employment on the basis of any legally prohibited discrimination involving, but not limited to, such factors as race, color, creed, religion, national or ethnic origin, sex, age or handicap. The University is committed to the maintenance of affirmative action programs which will assure the continuation of such equality of opportunity.

Profitability and Financial Feasibility of Major Capital Investments: A Computer Program

INTRODUCTION

Modern farm businesses frequently require major change, often involving large capital investment, if they are to be kept competitive. The managers of these businesses must be continually searching out and analyzing alternatives to determine which changes may be profitable and when needed changes should be made. Many of the investments that should be analyzed have characteristics that make appropriate analysis difficult. These include:

1. A multiperiod life with expenses and income unevenly distributed throughout the life.
2. A number of different individual investment items (machines, buildings, land parcels and groups of animals) with different asset lives and tax status.
3. A large enough potential effect on income to move the business owners through several marginal tax rates.
4. Differential susceptibility to the impact of inflation.
5. Complex financing and refinancing requirements resulting in major changes in debt service commitments.

The major capital investment computer program discussed in this publication is designed to assist with the analysis of investments having some or all of these characteristics. The program has three parts:

1. Computation of the net present value of proposed investments or "will the investment be profitable?"
2. Financial feasibility or "will the business generate enough revenue to make the debt payments?"
3. A budget generator for dairy herd expansion proposals.

The net present value section of the program calculates the annual income and expense flows that could be expected to be generated by an investment, converts these flows to an after-tax basis and discounts the after-tax flows to determine the expected gain or loss (net present value) that would result if the investment were made. Input for the model includes the characteristics of the individual investment items, the cash flows to be generated by the investment, tax status and the opportunity cost of capital. Output includes the net present value of the investment and a summary of the flows generated by the investment. The net present value section of the model assumes that the capital to acquire investment items flows out at the time each item is required. Therefore principal and interest payments are not included in these cash flows.

The financial feasibility section of the program calculates the payments required to service all debt and computes whether the business, including the investment under consideration, generates enough revenue to make the payments on the current debt plus payments on additional debt capital needed to acquire the proposed investment. Alternatively, the program will make the same calculations for only the added investment being evaluated.

The dairy budget generator may be used to generate cash flows for dairy herd expansions in situations for which base year information is available. It cannot be used for non-dairy alternatives nor for cases where data for a base year of dairy farm operations are unavailable.

The program is specifically designed to handle the peculiarities of dairy, orchard and vineyard investments. Investments for other types of agriculture are handled by straightforward discounted cash flow techniques.

If the user wishes to include inflation in the analysis, any investment or cash flow item may be inflated by changing the appropriate assumption.

This publication is designed to assist a user of the major capital investment computer program in making appropriate input entries and interpreting the results. The first section of the publication explains input entries, indicates possible error messages and explains the results. Table 1, indicating the values assumed by the model, is placed at the front of the publication for easy access. Use of this table is explained under modification of assumptions. Table 6 indicates the parameters used by the model. These parameters are values that are used by the model but cannot be changed by the user. Table 6 appears at the end of the first section on page 47.

The second section contains two examples of the use of the program. (1) A dairy farm expansion using the budget generator and (2) An investment in vineyard development.

INSTRUCTIONS FOR PREPARING DATA

To prepare data for input to the computer, the data relevant to the problem being analyzed are entered on an input form. When entering data on the input form, the number of digits and placing of the decimal must conform with the spacing indicated on the input form. The number of digits (numbers) cannot exceed the number of spaces available. Decimal points cannot be added or moved. Fractions must be entered in decimal form. If negative numbers are to be entered, the minus sign (-) that must be entered will use one of the available spaces.

Table 1. VALUES ASSUMED BY THE MODEL

Assumed Value	Assumption Code	Definition
General Model Assumptions:		
40.0	56	Percent that the price of the yearlings purchased is of cow purchase price.
100.0	57	Percent of added yearlings that will be purchased (whenever cows are purchased, sufficient yearlings will be added to provide replacements required in the year after purchase).
90.0	58	Percent that price of raised animals is of the price of purchased animals.
12.0	01	Calf price as a % of cull cow price.
40.0	02	Calves sold as % of cow numbers.
5	139	Recovery class for trees and vines.
10.0	04	Federal investment tax credit rate (percent).
6.0	05	State investment tax credit rate (percent).
\$1000	130	Federal personal exemption.
\$ 800	131	State personal exemption.
\$2500	137	State standard deduction.
60	132	Federal capital gains rate (% excluded).
60	133	State capital gains rate (% excluded).
60	140	Capital gains rate (% excluded) for terminal value calculations (only).
1	88	Are state taxes to be calculated (1 = yes, 0 = no state tax).
0.0	54	Rate (%) by which investment items, living expense and cash flows are inflated.
		0-98 = Purchased buildings, equipment, land, purchased cattle, cull cattle, orchard and vineyard establishment and development costs, living expenses and cash flow are inflated at rate entered.
		99 = These investment items are inflated by the rates indicated in assumptions 6 through 10, 134, 135 and 138.

Table 1. VALUES ASSUMED BY THE MODEL (continued)

Assumed Value	Assumption Code	Definition
General Model Assumptions:		
7.0*	06	Inflation rate on buildings.
7.0*	07	Inflation rate on equipment.
6.6*	08	Inflation rate on purchased cattle.
6.0*	09	Inflation rate on purchased land.
6.6*	10	Inflation rate on cull cattle.
6.6*	135	Annual rate of inflation in cash flows generated by the investment (lines 28-37), by the rest of the business (line 81a, used when budget generator not used), and in nonfarm income.
6.6*	138	Inflation rate on orchard and vineyard establishment and development costs.
0	127	Investment tax credit basis reduction option. 0 = Basis is reduced by one-half Federal investment credit taken and rate is indicated by assumption 04. 1 = Basis is not reduced by ITC taken. ITC rate is assumption 04 minus assumption 128.
2	128	Reduction in ITC rate (percentage points) when basis is not reduced by one-half Federal ITC taken. (ITC rate is reduced instead of reducing basis).
Financial Feasibility Assumptions:		
6.6*	134	Annual rate of inflation on living expenses (used with financial feasibility only).
0	125	Type of financial feasibility analysis conducted. 0 = Feasibility of entire business including the investment. 1 = Feasibility of the investment by itself.
0	126	Number of years for which replacement of existing machines will be avoided because the new investment is made.
85	129	Percent of livestock sales generated by the investment that qualifies for capital gain treatment.

* These values are used only if assumption 54 is set at 99. However, if these assumptions are changed under "modification of assumptions," the rate entered will be used even if assumption 54 is set at zero or 99.

Table 1. VALUES ASSUMED BY THE MODEL (continued)

Assumed Value	Assumption Code	Definition
Dairy Budget Generator Assumptions:		
1.0	55	Year for which budget data are to be printed out (for touch-tone terminals).
0.0	11	If 0.0, labor cost will increase to value entered on line 52 with the annual increase proportional to the increase in herd size. If 1-5, total increase from base year cost to value entered on line 52 occurs in year 1, 2, 3, 4 or 5, i.e., 1 indicates increase occurs in year 1.
\$100	53	Minimum level of purchased feed per cow (crop sales cannot be used to offset this portion of feed bill).
\$270	12	Cost of feed value provided by an acre of corn (90 bu. at \$3).
\$200	13	Cost of feed value provided by an acre of hay crop (2.5 tons at \$80).
\$120	14	Cost of feed value provided by an acre of other feed crops (60 bu. oats at \$2).
0.0	15	If value is 0.0, feed-crop sales will be used to offset additional feed purchases required when acres per cow decline. If value is 1.0, feed costs will be increased by the value of the additional feed purchases required and feed-crop sales will not be reduced.
\$ 25	16	Minimum increase in machine repair cost for each cow increase in herd size.
100.0	17	Maximum percent increase in auto expense.
25.0	18	Fertilizer and lime costs on <u>hay</u> as a percent of corn.
50.0	19	Fertilizer and lime costs on <u>other feed crops</u> as a percent of corn.
100.0	20	Fertilizer and lime costs on <u>nonfeed crops</u> as a percent of corn.
50.00	21	Seeds and plants cost on <u>hay</u> as a percent of corn.

Table 1. VALUES ASSUMED BY THE MODEL (continued)

Assumed Value	Assumption Code	Definition
Dairy Budget Generator Assumptions:		
100.0	22	Seeds and plants on <u>other feed crops</u> as a percent of corn.
100.0	23	Seeds and plants cost on <u>nonfeed crops</u> as a percent of corn.
50.0	24	Spray and other costs on <u>hay</u> as a percent of corn.
25.0	25	Spray and other costs on <u>other feed crops</u> as a percent of corn.
100.0	26	Spray and other costs on <u>nonfeed crops</u> as a percent of corn.
20.0	136	Minimum percent change in herd size before milk production level changes take effect.
1.0	27	Percent decline in milk production per 10 percent increase in herd size over the percent indicated in assumption 136 (enter negative value if production is to increase).
3.0	28	Years to recover from decline in milk production due to expansion (maximum of five years, enter 9 if recovery not expected to occur).
	83-87	Budget assumptions used to calculate taxes, insurance and land, buildings and fence repair when market value of real estate before investment is zero (i.e., line 61b = 0).
\$1.04	83	Land, buildings and fence repair expense per \$100 real estate investment.
\$1.75	84	Real estate taxes per \$100 real estate value.
0.5	85	Insurance cost per dollar investment for cattle and machinery as a percent of that for real estate.
\$1500	86	Value per cow of existing herd.
\$1075	87	Machinery investment per cow.

Table 1. VALUES ASSUMED BY THE MODEL (continued)

Assumed Value	Assumption Code	Definition
Dairy Budget Generator Assumptions:		
	30-52	Can be used to specify any particular item in the generated budget. The value entered will be used for all years (will be inflated if inflation is used).
<u>Code</u>	<u>Item</u>	<u>Code</u> <u>Item</u> <u>Code</u> <u>Item</u>
30	Labor	38 Vet and medicine 46 Rent
31	Feed	39 Other dairy expense 47 Telephone & Electric
32	Machine hire	40 Lime & fertilizer 48 Misc. exp.
33	Machinery repair	41 Seeds and plants 49 Milk sales
34	Auto expense	42 Spray and other crop expenses 50 Livestock sales
35	Gas and oil	43 Land, bldg., & fence repair 51 Crop sales
36	Purchased livestock	44 Taxes 52 Misc. receipts
37	Breeding fees	45 Insurance
0.0	29	Indicates rate by which dairy budget cash flows are to be inflated. 0-98 = All items listed in assumptions 59-82 will be inflated by the rate entered. 99 = Inflation coefficients indicated in assumptions 59-82 will be used.
	59-82	Used to specify the rate of inflation (%) for all items in the cash flow budget. The values listed will be used only if assumption code 29 is set at 99. If assumption code 29 is set at 99, the values listed will be used for all items except those specifically set at other rates by additional entries under input section X, "Modification of Assumptions".
6.6	59	Land rental rate (line 63). See assumption 76.
7.1	60	Labor
6.6	61	Feed
7.0	62	Machine hire

Table 1. VALUES ASSUMED BY THE MODEL (continued)

Assumed Value	Assumption Code	Definition
Dairy Budget Generator Assumptions:		
7.0	63	Machinery repair
7.0	64	Auto expense
7.5	65	Gas and oil
6.6	66	Purchased livestock
6.2	67	Breeding fees
5.5	68	Vet and medicine
8.4	69	Other livestock expense
4.6	70	Lime and fertilizer
6.6	71	Seeds and plants
3.6	72	Spray and other crop expense
10.0	73	Land, building and fence repair
6.6	74	Taxes
6.6	75	Insurance
6.6	76	Rent (base year rent only). See assumption 59.
9.5	77	Telephone and electricity
6.6	78	Miscellaneous expenses (year 6 and later)
6.6	79	Milk sales
6.6	80	Livestock sales
6.6	81	Crop sales
6.6	82	Miscellaneous income (year 6 and later)

Table 1. VALUES ASSUMED BY THE MODEL (continued)

Assumed Value	Assumption Code	Definition	
Tax Rate Assumptions:			
	89-124	Marginal state tax rate	
		<u>Taxable Income</u>	
		<u>over</u>	<u>but not over</u>
2	89	\$ 0	\$ 1,000
3	90	1,000	2,000
3	91	2,000	3,000
4	92	3,000	4,000
4	93	4,000	5,000
5	94	5,000	6,000
5	95	6,000	7,000
6	96	7,000	8,000
6	97	8,000	9,000
7	98	9,000	10,000
7	99	10,000	11,000
8	100	11,000	13,000
9	101	13,000	15,000
10	102	15,000	17,000
11	103	17,000	19,000
12	104	19,000	21,000
13	105	21,000	23,000
14	106	23,000	25,000
14	107	25,000	27,000
14	108	27,000	29,000
14	109	29,000	31,000
14	110	31,000	33,000
14	111	33,000	36,000
14	112	36,000	40,000
14	113	40,000	44,000
14	114	44,000	50,000
14	115	50,000	60,000
14	116	60,000	72,000

Table 1. VALUES ASSUMED BY THE MODEL (continued)

Assumed Value	Assumption Code	Definition	
Tax Rate Assumptions:			
	89-124	Marginal state tax rate	
		<u>Taxable Income</u>	
		<u>over</u>	<u>but not over</u>
14	117	72,000	84,000
14	118	84,000	100,000
14	119	100,000	120,000
14	120	120,000	140,000
14	121	140,000	160,000
14	122	160,000	180,000
14	123	180,000	200,000
14	124	200,000	--

EXPLANATION OF INPUT DATA

(See examples on pages 49 and 83)

At the top of the input form, space is provided to enter the PROGRAM number, NAME of the person for whom the analysis is being made, and an INVESTMENT description. The program number consists of two parts. The first three digits are the number of the program, 050. The last two digits indicate which input form is being used. Thus, if form 4 is being used, the appropriate entry would appear as: PROGRAM 0 5 0 0 4

The NAME may use up to 24 characters and the INVESTMENT DESCRIPTION may use up to 40. Each letter, number, period, dash and space count as a character. In identifying the investment item it is suggested that you be as descriptive as possible about the particular investment being considered and the problem being analyzed.

Section I. Planning Period

- 1a. Enter the number of years to be used in evaluating the investment. The maximum planning period length is 25 years. Fractions of years cannot be entered.

Section II. Building Investment Information

All information on buildings or other depreciable real estate, such as trees in an orchard you are considering for purchase, should be entered in this section. Space is provided for three sets of buildings and/or depreciable real estate. If more than three buildings are included in the investment, they should be reduced to three groups by combining items with similar characteristics, i.e., similar life, salvage value, and cost recovery class. In the discussion below, and on the input form, the word buildings is used to denote buildings and/or other depreciable real estate. The line to the right of Item or Group is used only for user identification. It is not entered into the computer.

- 2a. Enter the total cost of the building or buildings in group A.
- 2b. Enter the year the buildings in group A are to be purchased. If they are purchased at the beginning of the planning period, enter zero; if they are purchased one year from the beginning of the planning period (or at the beginning of the second year), enter 1. In general, enter the number of years from the beginning of the planning period until the building is purchased.
- 2c. Enter the recovery class for the item. This is the recovery class from the accelerated cost recovery system or ACRS. If the item is not depreciable, enter "00."
- 3a. Enter the code for the ACRS recovery option to be used for this investment group.
- 3b. Enter the code for the ACRS recovery option on the replacement. If item is not to be replaced, enter "0".

- 3c. If the investment qualifies for Federal investment tax credit, enter "1"; if it does not, enter "0".
- 3d. If the investment qualifies for State investment tax credit, enter "1"; if it does not, enter "0".
- 3e. If the building is to be replaced, enter the number of years it is to be used before replacement. Buildings with a life shorter than the planning period will be replaced the number of times required to complete the planning period. If a building is not to be replaced, enter "00." If a building is not to be replaced, the model will assume that the item will either physically last for the entire planning period or that the item is no longer required after it wears out. Care should be exercised in coordinating the planning period length selected in line 1a. with the length of life appropriate for the buildings constructed.
- 3f. Enter the salvage percentage to be used. Salvage percent should reflect the estimated market value (in year 0 dollars) of the investment at the end of its period of use. This percentage should be entered even for non-depreciable items since the value used for terminal value of non-depreciable items is the salvage value. The salvage value entered is not used for depreciation purposes (salvage value is disregarded for ACRS purposes) but is used as an estimate of true market value at the end of the investment's life. Enter value in year 0 dollars. If values are being inflated the inflated value will be calculated by the computer.
- 4a.-5f. These lines correspond exactly with lines 2a.-3f. except that they apply to building item or group B.
- 6a.-7f. These lines correspond exactly with lines 2a.-3f. except that they apply to building item or group C.

NOTE: If you are considering an investment to develop an orchard or vineyard, use Section IV B to input data on development costs. However, the investment in the trellis should be entered in Section II because it can be depreciated immediately rather than waiting until the orchard or vineyard begins producing.

Section III. Equipment Investment Information

All machinery and equipment investment information should be entered in this section. Space is provided for three sets of equipment. If more than three equipment items are included in the investment, they should be reduced to three groups by combining items with similar characteristics, i.e., similar life, cost recovery class, investment credit status.

- 8a. Enter the total cost of equipment item or group A. This should include transportation, installation or other costs where applicable. If items that would otherwise be sold are to be traded in, the fair market value of the trade-in should be added to the boot price to get the actual cost. Include only equipment items which are part of the investment. Do not include items that will be purchased whether the investment is made or not.

- 8b. Enter the year that equipment item or group A is purchased. If it is purchased at the beginning of the planning period, enter zero. If it is purchased in later periods, enter the number of years from the beginning of the planning period until the item is purchased.
- 8c. Enter the recovery class for the item. If the item is non-depreciable, enter "00".
- 9a. Enter the code for the ACRS recovery option to be used for this investment group.
- 9b. Enter the code for the ACRS recovery option on the replacement. If item is not to be replaced, enter "0".
- 9c. If the equipment item or group qualifies for Federal investment tax credit, enter "1"; if it does not enter "0".
- 9d. If the equipment item or group qualifies for State investment tax credit, enter "1"; if it does not, enter "0".
- 9e. If the equipment item or group is to be replaced, enter the number of years it is to be used before replacement. Equipment with a life shorter than the planning period will be replaced the number of times required to complete the planning period.

If the equipment item is not to be replaced, enter "0". If an equipment item is not replaced the computer program will assume that the item will either physically last for the entire planning period or that the item is no longer required after it wears out.

- 9f. Enter the salvage percentage to be used. Salvage percent should reflect the estimated market value (in year 0 dollars) of the investment at the end of its period of use. This percentage should be entered even for non-depreciable items since the value used for terminal value of non-depreciable items is the salvage value. The salvage value entered is not used for depreciation purposes (salvage value is disregarded for ACRS purposes) but is used as an estimate of true market value at the end of the investment's life. Enter value in year 0 dollars. If values are being inflated the inflated value will be calculated by the computer.
- 10a.-11f. These lines correspond exactly with lines 8a.-9f. except that they apply to equipment item or group B.
- 12a.-13f. These lines correspond exactly with lines 8a.-9f. except that they apply to equipment item or group C.

Section IV is used for either Livestock Investment Information (IV A) or Tree and Vine Information (IV B). These two sections are alternatives; therefore both cannot be used on the same run.

Section IV A. Livestock Investment Information

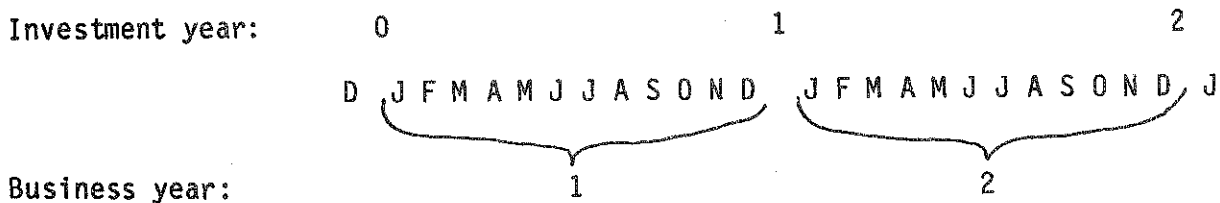
The model is designed to handle livestock investments at any time during the first five years of the planning period. It is assumed that all changes in livestock numbers that relate to the investment will be accomplished during the first five years. Only breeding (and/or milking) livestock to increase herd size should be entered in this section. Do not include those animals raised simply as replacements. Purchase and sale of feeder steers or similar livestock should be included in cash flow budgets.

Raised livestock used to increase herd size are included as part of the investment. If the investment were not made, these animals could be sold. Thus, their value is a cost that must be attributed to the investment. The model calculates the number of raised livestock to include in the investment as that part of the year-to-year increase in herd size not provided by purchased animals. For example, if (1) the number of cows before investment is 100, (2) the average number of cows in year 1 is 125 and (3) the number of animals purchased in year 0 (at the time of the investment) is 15, the model will assume that 10 raised animals are part of the investment. The cost of raised cattle is indicated by the price entered for purchased livestock and assumption 58. Do not purchase more cows in one year than the increase in herd size indicated for the following year. If excess animals are purchased in any year; the herd size will not exceed the number entered on lines 14 and 15, nor will the excess animals be carried over to the next year.

Whenever the herd size is increased, using either purchased or raised animals, the model assumes that sufficient yearlings must also be added to provide the raised replacements required in the following year. It takes at least two years to grow a replacement and only one year will elapse between the time the cows are added to the herd and the time the first of the added cows will be culled. Thus, either (1) the farmer will need to have excess yearlings at the time the investment is made, (2) additional replacements will need to be purchased the year following the herd size increase or (3) the farmer will have to buy additional yearlings at the time herd size is increased. In any of these cases, the cost of the additional yearlings should be charged as part of the investment. If replacements are raised, the cost of raising the yearlings to freshening age will be included in the cash flow as part of the expenses. Yearlings will not be purchased for that portion of the increase in herd size that is to be replaced with purchased animals, as indicated in input line 18c.

For example, if the herd size is increased in year 1 by 40 cows and the culling rate is 25 percent, 10 replacements will be required in the first year. If 20 percent of all replacements are purchased (line 18c.), 8 (eight) yearlings will be automatically be counted as an investment when the 40 cows are added. The cost of these yearlings is calculated using the cow purchase price per head (line 18a.) and assumption 56. If some of the added yearlings are to be raised and assumption 57 is changed, say to 75 percent, then the price used for those that are raised, in this case 6 animals, will be calculated using assumption 58 as well as line 18a and assumption 56.

- 14a. Enter the number of cows at the time the investment is made. If additional cows have been (will be) kept (instead of sold) in anticipation of making the investment, these animals should be excluded from line 14a.
- 14b. Enter the average number of cows for the first year (first 12 months). This includes animals in the herd before the investment as well as those that are part of the investment. Only those animals that are bought in year zero will contribute to any increase in herd size for year 1.
- 14c.-15c. Enter the average number of cows for the 12-month period implied by the year indicated.
- 16a. Enter the number of mature animals (cows or bred heifers) to be purchased at the beginning of the planning period. If younger heifers or calves are purchased with the expectation that they will be raised and will enter the herd in one or two years, these animals should either (1) be entered as purchases in the year they enter the herd, or (2) be included as raised animals by allowing the model to impute their investment cost in the year they will enter the herd.
- 16b.-17b. Enter the number of mature animals to be purchased in the year indicated. It is assumed that all investments take place at one-year intervals. Thus, animals purchased in year zero are in the herd during year 1, animals purchased in year 1 are in the herd during year 2, etc. Schematically for an investment made on December 31 (or January 1), this can be shown as:



- 17c. Enter the net value of an average cull cow. This should reflect the average value received for cows culled from the herd. Selling costs should be subtracted from average gross value per cow. Consideration should be given to the fact that some animals culled are injured or in poor health at the time of sale.
- 18a. Enter the price per head that will be paid for animals purchased. If only raised animals are used to increase herd size, enter the value that could be received for raised animals used as part of the new investment and set assumption 58 at 100. If some animals are to be purchased and some raised, enter the average value of all purchased animals to be added to the herd and set assumption 58 at the level required to reflect any difference between the value of purchased and raised animals.

If young animals are purchased to increase the number of raised replacements available in future years, enter their value at the time

they enter the milking herd. Always enter a price if herd size is increased by the investment even if no animals are to be purchased. This number is required to calculate the value of raised animals.

- 18b. Enter the culling rate expected on animals added to the herd. An entry must be made on this line if herd size is increased.
- 18c. Enter the percent of all animals included as part of the investment that will be replaced by purchased animals. If all replacements are to be raised, enter zero.

Note: When the budget generator is used, the costs generated will be based upon the assumption that the same percentage of replacements is raised after the investment as in the base year. If the number entered here differs significantly from the percentage of replacements purchased in the base year, budget costs will be over or underestimated by the cost of the reduced or increased number of animals raised relative to a proportional change. For example, if replacements equal to 10 percent of the herd are purchased in the base year, the budget generator assumes that replacements equal to 10 percent of the expanded herd will be purchased after the investment is made.

- 19. All portions of line 19 must be completed if purchased animals are part of the investment or if some of the animals that are part of the investment are replaced with purchased animals or if any yearlings are purchased.
- 19a. Enter the recovery class for purchased animals.
- 19b. Enter the ACRS recovery option to be used on purchased livestock.
- 19c. If the investment qualifies for Federal investment tax credit, enter "1"; if it does not, enter "0".
- 19d. If the investment qualifies for State investment tax credit, enter "1", if it does not, enter "0".
- 20a. Enter the per cow value of the increase in herd size that is part of the investment. Enter the value in year 0 dollars. If cow values are being inflated, an actual dollar value will be calculated by inflating the value entered.
- 20b. Enter the average value of the additional heifers of all ages on hand at the end of the planning period as a result of the increased herd size. Enter the value in year 0 dollars.
- 20c. Enter the increase in number of heifers of all ages on hand at the end of the planning period as a result of the increased herd size. If the policy on purchasing versus raising replacements is not changed as a result of the investment, the number of heifers in the future normally will be the same percent of the number of cows as currently is experienced. For example, if you currently have 100 cows and 60 heifers and herd size is increased to 150, number of heifers will likely increase by 30 head.

Section IVB. Tree and Vine Information

This section is used to analyze an investment to establish and develop an orchard or vineyard. (If you are considering investment in an existing orchard or vineyard, use Section II). Up to two separate varieties or types of plantings may be considered simultaneously. Acreage of the same variety or type of planting may be established in any or all of years 0, 1, 2 and 3. Establishment costs must be capitalized but development costs after the initial establishment may be either expensed or capitalized.

- 14a. Enter 1 to expense or 2 to capitalize development costs for variety or type of planting A. If capitalized, development costs will be recovered as depreciation beginning in the first year that the orchard or vineyard produces income.
- 14b. Enter 1 to expense or 2 to capitalize development costs for variety or type of planting B.
- 14c. Enter the ACRS recovery option (see line 3a) for variety or planting A.
- 14d. Enter the ACRS recovery option (see line 3a) for variety or planting B.
- 15a. Enter acres of variety or planting A to be established in year 0.
- 15b.-15d. Enter acres of variety or planting A to be established in years 1, 2, and 3.
- 16a. Enter land value per acre in \$100. If the orchard or vineyard is being established on land that is currently owned (not part of the investment) enter the per acre value of that land in its current condition. This value is used to reflect the fact that use of this land for orchard or vineyard will result in a loss of any net revenue that would have been generated by the land without the investment, i.e., in the production of corn, hay or other crops. The amount of the loss is estimated by treating the value of the land as an input that is returned at the end of the planning period. Effectively the rate of loss is equal to the discount rate.

Do not enter a value on this line if the land on which the orchard or vineyard is to be established is purchased as part of the investment and is entered on lines 21-26.

- 16b. Enter initial establishment costs (trees or vines and cost of planting) in \$100 per acre. Establishment costs include the costs that the Internal Revenue Service requires to be capitalized rather than expensed. Establishment costs are assumed to occur at the beginning of the year of establishment.

Note: Unless taxable income is expected to be low in the first few years after establishment, it is suggested that costs of trellises be entered in Section II because these costs can be depreciated starting in the year of construction rather than waiting until the orchard or vineyard comes into production.

- 16c. Enter development costs per acre that will occur during the first year after establishment. Development costs are costs which occur after

initial establishment that may be either capitalized or expensed for income tax purposes. Development costs during the first year are assumed to occur at the end of the year.

- 16d. Enter development costs per acre that will occur during the second year after establishment.
- 17a.-17c. Enter development costs per acre that will occur during the 3rd, 4th and 5th year.
- 17d. Enter the expected terminal value of the trees or vines at the end of the planning period in year 0 prices. Do not include the value of the land. This can be estimated as the value of the land with the trees or vines minus the value of similar land without trees or vines.
- 18a.-20d. These lines are comparable to lines 15a.-17d. but are for variety or type of planting B.

Section V. Land Investment

All land or other non-depreciable real estate should be entered in this section. Space is provided for three separate land investments. If more than three parcels are purchased they should be grouped by year of purchase for entry.

- 21a. Enter the year that land item or group A will be purchased.
- 21b. Enter the total cost of land item or group A. Total cost should include all transfer costs and taxes involved in the purchase.
- 22. Enter the terminal value of land item or group A excluding any effect of general inflation on land values. This value should include any appreciation in land value due to location relative to population expansion centers or improvement in the quality of the land over the planning period. Any change in value due to general increases in the price level should be excluded. If inflation is included in the analysis, the terminal value will be inflated by the computer.
- 23a.-24. These lines correspond exactly with lines 21a.-22 except that they apply to land item or group B.
- 25a.-26. These lines correspond exactly with lines 21a.-22 except that they apply to land item or group C.

Section VI. Income Tax and Cost of Capital Information

- 27a. Enter the before-tax cost of capital relevant to the owners of the business for which the investment is being made. The cost of capital should reflect the rate of return that could be earned if the money required to make this investment were not used for this investment but were invested in the alternative providing the highest return. For most businesses the cost of capital can be estimated as the weighted average of the rate of interest paid on borrowed capital and the rate

of return that could be earned by equity capital in the best alternative investment, where the weights are the amount of debt and equity capital after the investment is made.

- 27b. Enter the marginal Federal tax rate that would be paid if the investment were not made. For investment analysis, the program assumes that the business is at the midpoint of Federal tax bracket indicated (Table 6). The level of income and the State tax rate are estimated from the Federal rate. If the income from the business is divided among more than one family (person), the marginal tax rates for all families (persons) should be averaged.
- 27c. Enter the appropriate state code (New York = 31). This is used to indicate the appropriate state tax rates to use.
- 27d. Indicate the number of tax families that will divide the net income from the business. The model will assume that all additional income generated by the investment is divided equally among the tax families.

Section VII. Projected Increase in Cash Flow

For dairy farm business investments, the projected increase in cash flow provided by the investment can be either entered in this section or estimated by the computer program from entries in section VIII. For all other types of investments, increased cash flows must be entered in this section.

In calculating cash flows on livestock farms, exclude from income the value of calf and cull cow sales resulting from the investment. Exclude from the expenses the value of purchased replacements resulting from the investment. Each of these items is calculated by the model from data entered in Section IV A.

Ten different cash flow levels can be entered, with each level occurring in as many consecutive years as desired. Cash flow entries must be made for each year of the planning period. An entry of "0" on line 28 indicates to the computer that cash flows will be estimated in section VIII. The total number of years for which cash flows are indicated on lines 28-37 must equal the planning period on line 1. Orchard and vineyard investments with no cash inflows during the development years will have zeros in line 28a. and the number of years of zero cash flows in 28b.

In estimating orchard and vineyard cash flows exclude the reduced cash flows that result from the use of land, that is already owned, for trees and vines instead of its former use.

- 28a. Enter the before-tax net cash inflow level in dollars per year to be received during the year or series of years.
- 28b. Enter the number of years for which the first cash flow level will be received.
- 29a. Enter the second level of before-tax cash inflow in dollars to be received per year.

- 29b. Enter the number of years for which the second cash flow level will be received.
- 30-37. Enter the dollar value of each successive cash flow level and the number of years for which it is to be received.

Section VIII. Budget Projection Data

This section is a budget generator for projecting cash income and expenses for dairy farm businesses. It cannot be used to project cash flows for other types of farms. The budget generator operates on the assumption that a farmer's past experience is a reasonable indicator of his expected performance in future years. Thus, the data for a recent year, preferably the year immediately prior to the one in which the investment is made, are used as a basis for estimating the income and expense levels that would occur if the investment is made.

Data for the most recent year may need to be adjusted to develop appropriate base year input. Data should be adjusted for any irregularities that occurred during the year that are not expected to occur in future years.

Examples of such irregularities include:

- (a) A feed bill carried over from the previous year that was paid off.
- (b) The expense for a fertilizer purchase that is normally made in December but was delayed until the next year.
- (c) Above normal corn yields that resulted in a below normal feed bill.
- (d) Lime expense for permanent pasture that is made only every four years.
- (e) A reduced labor bill because son John was laid-off from his job in town and worked for nothing on the farm during May and June.
- (f) Corn was grown but not harvested resulting in a higher than normal feed bill.

The model assumes that the base year experience is what would occur in future years if the investment were not made. Use of a list of base year data adjustments and budget assumptions will assist in interpreting results generated.

- 38-48b. Enter all cash operating expenses for the base year. It is suggested that these items be added up and the total checked against total expenses for the year to be sure that all cash expenses are included in one of the categories.
- 49-51b. Enter all cash operating income for the base year. It is suggested that these items be added up and checked against total cash receipts for the year to be sure that all cash income is included in one of the categories.

52a. Enter the amount that is expected to be paid for hired labor in the fifth year (in year 0 dollars). The value of assumption 11 determines whether the increase to this level occurs all in one year or is proportional to the increase in cow numbers.

53a. Enter the number of acres of corn (silage and grain) grown in the base year.

Note: A "0" must be entered on every line for lines 53 thru 60 if no other entry is required.

53b.-54c. Enter the number of acres of corn (silage and grain) to be grown in the year indicated.

55a. Enter the number of acres of hay crops grown in the base year. Hay crops include hay, hay crop silage, annuals (other than corn) that were ensiled or pastured and cropland pasture.

55b.-56c. Enter the acres of hay crops to be grown in the year indicated.

57a. Enter the acres of feed crops other than hay crops and corn that were grown in the base year. Other feed crops include such crops as oats, barley, rye and grain sorghum.

57b.-58c. Enter the acres of other feed crops to be grown in the year indicated.

59a. Enter the acres of non-feed crops grown in the base year. Non-feed crops include all crops that are not or cannot be fed to livestock. Examples include vegetables, wheat and soybeans. If wheat or soybeans are used for feed, they should be included in other feed crops in lines 57 and 58.

59b.-60c. Enter the acres of non-feed crops to be grown in the year indicated.

61a. Enter the percent of total crop sales entered on line 51 that resulted from the sale of non-feed crops grown in the base year on acreage indicated in line 59a.

61b. Enter the market value of land and buildings owned by the business in the base year. This number is used in estimating taxes, insurance, and building and fence repair costs.

62a. Enter the average pounds of milk sold per cow during the base year.

62b. Enter the average number of cows on hand during the base year. This number can differ from the number indicated on line 14a (section IV A) when the base year is not last year or when an unusual number of animals have recently been added to the herd.

63a. Enter the number of acres of additional cropland that will be rented if the investment is made. If no additional cropland is to be rented, enter "000".

63b. Enter the number of the first year in which the cropland is to be rented. Rental must start in one of the first five years of the planning period.

- 63c. Enter the rental rate (dollars per acre), that is to be paid for the cropland to be rented. Even if rental is not to start in the first year, the value entered should be in year zero dollars. If values are to be inflated, the model will calculate the actual rate for each year.

Section IX. Financial Feasibility

Data required to calculate the financial feasibility of the investment are entered in this section. Financial feasibility can be considered at two levels:

- (1) The financial feasibility of the business including the investment can be assessed. In this case the model evaluates the ability of the business, including the new investment, to meet the payments on all debt (old and new) that would be outstanding. To conduct this type of analysis information must be provided for all of Section IX (lines 64 through 84).
- (2) The financial feasibility of the investment by itself can be assessed. That is, the model can evaluate whether the investment, by itself, will generate sufficient cash flow to make the debt payments. In this case the only financial information that is entered in this section is that pertaining to the investment itself. Current outstanding debt is omitted (lines 68-77 are blank), lines 80 through 84 are left blank and assumption 125 must be set at 1 (in section X of the input form).

If financial feasibility of the investment alone is being done as an adjusted analysis, setting assumption 125 to 1.0 will automatically delete any entries in lines 68 through 77 and 80 through 84. If the user wishes to include changes in living expenses (increases or decreases) resulting from the added investment, this can be done by entering the value for line 84a in Section X after setting assumption 125 to 1.0.

In either situation, financial feasibility calculations are made for the first five years of an investment proposal.

A. Credit Terms Available

Enter the credit terms that will be obtained for the different sources or types of credit that will be used at the time and after the investment is made. If two different lenders offer the same terms, enter these terms only once. Entry of lender name and checking whether the terms listed are for real estate or non-real estate frequently simplifies data entry, but these data are not entered in the computer.

- 64a. Enter the number of years allowed for repayment of the loan under credit terms I.
- 64b. Enter the annual interest rate charged with credit terms I. Interest rate is entered as a percent. For example, a rate of 16.5 percent is entered as 16.5. If a variable interest rate is charged, indicate the initial contract rate.
- 64c. Indicate the type of repayment plan to be used with credit terms I. If the total amount of each payment, including principal and interest, is

constant, enter 0. If each payment includes a constant principal payment plus interest on the outstanding balance (principal is constant and interest payments decline as payments are made), enter 1.

- 64d. Enter the number of payments to be made each year under credit terms I. Enter zero if payments are monthly.
- 65a-65d. These lines correspond exactly to lines 64a-64d except that they apply to the second set of credit terms: credit terms II.
- 66a-66d. These lines correspond exactly to lines 64a-64d except that they apply to the third set of credit terms: credit terms III.
- 67a-67d. These lines correspond exactly to lines 64a-64d except that they apply to the fourth set of credit terms: credit terms IV.

B. Current Debt Outstanding

All current outstanding debt should be entered here. There is space for five different loans. If more than five loans exist, aggregate loans with similar repayment period and interest rate. To aggregate loans with similar terms add the original amounts and then use the average interest rate, repayment period and original repayment characteristics. If you are considering financial feasibility of the investment alone, i.e., excluding any cash flows from the rest of the business, lines 68-77 can be skipped. Note: Assumption 125 must be set to "1" to do this.

- 68a. Enter either (1) the original principal balance of the loan or (2) the amount of each payment for loan A. If the amount of each payment is entered, enter the principal plus interest payment for even total payment loans and the amount of principal only for loans where the amount of principal paid on each payment date is constant but the interest payment declines.
- 68b. Enter a zero if the amount entered on line 68a is the loan payment. Enter 1 if the amount entered on line 68a is the original principal.
- 68c. Enter the number of payments made per year on loan A. If monthly payments are made, enter zero.
- 68d. Enter the number of years between the time loan A was taken out and the date the investment is to be made. For example, if the investment is to be made in March of 1985 and loan A was initiated in September of 1982, enter 2.5.
- 69a. Enter the original term of loan A measured in years.
- 69b. Indicate the type of repayment plan used with loan A. If the total amount of each payment, including principal and interest, is constant, enter 0. If each payment includes a constant principal payment plus interest on the outstanding balance (principal is constant and the interest amount declines as payments are made), enter 1.

- 69c. Enter the interest rate on loan A. For example, if the interest rate is 15 3/4 percent, enter 15.75.
- 69d. Refinancing of existing loans is frequently a part of a major capital investment. The year in which refinancing occurs is indicated in line 78. If loan A can be refinanced, enter 1; otherwise enter zero. The types of loans most likely not to be refinanced are those where the lender places restriction on early repayment and those where credit terms are so favorable that the farmer does not want the loan refinanced.
- 69e. Indicate the credit terms to be used when loan A is refinanced. One of the sets of credit terms identified in lines 64-67 must be used. Enter the number of the credit terms to be used. That is, if the set of credit terms described in line 67 (credit terms IV) are to be used, enter 4 on this line. If you have indicated in line 69d that the item will not be refinanced, leave this line blank.
- 70a-71e. These lines correspond exactly to lines 68a-69e except that they apply to loan B.
- 72a-73e. These lines correspond exactly to lines 68a-69e except that they apply to loan C.
- 74a-75e. These lines correspond exactly to lines 68a-69e except that they apply to loan D.
- 76a-77e. These lines correspond exactly to lines 68a-69e except that they apply to loan E.

C. Other Financial Feasibility Information

- 78a-78f. Indicate the years in which refinancing will occur. This is accomplished by entering a 1 on the line corresponding to the year of refinancing. If this line is left blank, refinancing will occur only at the time the original investment is made (year 0). Entering a zero in year 0, and any other year will prohibit refinancing in that year. For any loan that is not to be refinanced as indicated in the loan description (lines 68-78), the existing repayment schedule will be continued. Allowing no refinancing (line 78a=0) will result in continuing all existing loan payments and initiating new loans only for items purchased as part of the investment. For analysis 1 of any problem it is suggested that either no refinancing be allowed or that refinancing be allowed only in year 0.
- 78g. The existing machinery inventory (excluding the new investment) must be maintained (replaced). The amount spent each year to maintain (replace) that machinery is indicated on line 80a. This replacement machinery is financed at the terms indicated in line 79e. These debts may be refinanced once to reduce the payment required or may be refinanced each year to slow the rate at which these payments increase. Enter the number of the year in which refinancing is to take place or enter 99 to allow refinancing in each year. It is recommended that this line be set at zero for the first analysis.

79a-79d. Indicate the credit terms to be used in financing purchase of investment items identified on lines 2 through 26. Enter the number of the credit terms to be used as described in lines 64 through 67. If an item is to be financed from cash on hand enter 5. Separate credit terms can be indicated for each building and land item. However all machinery must be financed with the same credit terms. Similarly only one set of credit terms can be used for all livestock or all trees and vines. If refinancing is conducted in a year after an investment is made, the same credit terms will be used; the remaining principal balance will be refinanced using the years in the original repayment period with the same payment frequency and interest rate.

79e. Indicate the credit terms to be used in financing replacement of existing equipment. Do not use credit terms 5, financing from equity.

Note: If you are considering financial feasibility of the investment alone, skip lines 80-83, 84b and 84c.

80a. Enter the average amount (in thousands of dollars) that will be spent to replace existing machinery in future years. This is the average amount that will be required to replace the current machinery inventory. It should not include future investments required for expansion or improvement of the quality of machinery used. Do not include replacement of items purchased as part of the investment. The value entered should be in year 0 dollars; do not allow for expected inflation. If inflation is used in the model, this value will be inflated by the value listed in assumption 07.

For a farm where the machinery inventory has been stable for the past few years, the average new machinery purchases for these years is usually a good estimate of future replacement requirements.

This amount can also be estimated by multiplying the appropriate value from table 2 by the market value of the current machinery inventory. In selecting the appropriate value from table 2 be sure that the percent market value at time of trade-in represents the value of the item being traded in, at the time it is traded in, as a percent of the price of the replacement item. For example, assume a tractor is purchased in 1975 for \$50,000. If that machine is traded for a similar tractor in 1985 that would cost \$100,000 when purchased outright and the dealer allows \$40,000 trade-in value towards purchase of the new one, the appropriate percent to use in table 2 is 40 (not 80). Also

Table 2. ANNUAL INVESTMENT REQUIRED TO MAINTAIN MACHINERY INVENTORY

Average Life of Farm Machinery	Market Value at Time of Trade-in as Percent of Replacement Cost			
	10	20	30	40
	-----% of current market value of machinery-----			
5	33	27	22	17
6	27	22	18	14
7	23	19	15	12
8	20	17	13	11
9	18	15	12	10
10	16	13	11	9

the average life used should be the weighted average life with the new value of machinery used as weights. Then, in estimating the average life, give more weight to the life of the items with highest new value. Additional information on estimating machinery replacement can be obtained from Department of Agricultural Economics Research Bulletin 81-29.

- 80b. Enter the average amount of machinery, building and livestock depreciation that will be taken for tax purposes if the investment is not made. The amount of depreciation taken last year will frequently provide a good estimate of this value, but may need to be adjusted downward if an important item will be completely depreciated within the next year or two. The value entered on this line is used only for calculating income taxes for the financial feasibility portion of the model. Thus, it is most important that this value be correct for the first few years after the investment is made.
- 81a. This value is entered only if the budget generator is not used. Enter the expected annual net cash flow that will be received if the investment is not made. This is calculated as total cash receipts minus all cash expenses except interest. This can be estimated from last year's records adjusted for any production or price peculiarities that occurred last year. This item is used only for estimating cash flow in the financial feasibility section of the model.
- 81b. This value is entered only if the budget generator is not used. Enter the amount (in thousands of dollars) of income that will be received, if the investment is not made, that qualifies for capital gain treatment. This is the amount of income used in calculating net cash flow for line 81a that qualifies for capital gain treatment.
- 82a. Enter the amount (in thousands of dollars) of federal investment tax credit that has been earned but not used and, thus, can be carried forward for future use. The model assumes that the investment credit has been earned uniformly over the last 7 years. It is used before any new investment credit is used but will be lost if not used within 15 years of the date earned.
- 82b. Enter the amount of state investment tax credit (thousands of dollars) that has been earned but not used. State Investment tax credit will be carried forward indefinitely until used to offset state taxes.
- 83a. Enter the annual average net amount of Federal Investment Tax Credit that will be earned if the investment is not made without consideration for whether or when it will be used. Any expected recapture should be subtracted. This can be estimated as the average machinery investment (as estimated for line 80a) times the ITC rate (10%), plus the average dairy cattle replacement purchase times 6% or 8% depending on whether the average period a cow stays in the herd is 3 years or 4 years, respectively (Cattle qualify for 10% investment tax credit but some is recaptured when animals are sold before being held for 5 years). The value should be entered in year zero dollars. If the inflation section of the model is used ITC will be inflated using assumption 07.

- 83b. Enter the annual average amount of State investment tax credit that will be earned by the business if the investment is not made. Enter the amount that will be earned without consideration for when or whether it will be used. Estimating procedures similar to those used for estimating federal investment tax credit (line 83a) can be used by substituting the state ITC rate for the federal rate. Enter the value in year 0 dollars. If items are being inflated by the model, this value will be inflated using assumption 07.
- 84a. Enter the amount of cash required for all living expenses (in thousands of dollars) except income taxes but including Social Security taxes. This should reflect the amount of cash required by the family or families operating the business. Living expenses should be excluded for anyone who receives a salary that is included in labor expenses in the budget generator or in the cash flows entered in lines 28-37. The value entered must be in year zero dollars. These costs will be inflated using assumption 134. If financial feasibility of the investment by itself is being considered, 84a normally will be blank because the added investment will not affect living expenses. If living expenses will increase because of the investment, the amount of the increase is entered on line 84a.
- 84b. Enter the expected annual nonfarm income (in thousands of dollars). This should include only nonfarm income not included in line 81a. Usually all nonfarm income will be entered here although any nonfarm income that qualifies for capital gain treatment should be included in line 81 if the budget generator is not used. Enter the value in year zero dollars. The value entered will be inflated using assumption 135.
- 84c. Enter the average number of tax exemptions per tax family operating the business.

Section X. Modification of Assumptions

A number of coefficients are used by the model in making its calculations. Those coefficients that are likely to be similar for a number of different farm situations are stored in the computer and called assumptions. A list indicating the value assumed for each of the assumptions used in this program is presented in Table 1. Table 1 is presented on pages 3 thru 10 to make it easy to find. If any of the values assumed by the model are inappropriate for the situation being considered, these values can be replaced with more appropriate values.

Replacement of values assumed by the model is accomplished by making entries in lines 85 through 99 (or line 98 if 99 is used to indicate line numbers for adjusted analyses). On the "a" part of the line (i.e., 85a) enter the new value that is to replace the assumed value. On the "b" part of the line enter the assumption code which identifies that assumption. On the input line following the last assumption modification enter zero (unless the modification fills line 99). If no assumptions are to be modified, enter a zero on line 85.

For example, if the price of calves is expected to be 20 percent of the cull cow price (assumption 01) instead of the 12 percent assumed by the model, the 12 percent can be replaced by 20 percent by making the following entry on line 85.

85 a. Assumption value desired 59. 2 0.0 | 0 1 |
 b. Assumption code _____

Any line in Section X can be used to change any of the assumptions as long as all previous lines are used.

ADJUSTED ANALYSES

Most investment decisions will require one or more adjusted analyses. An adjusted analysis is made by going through the input lines and entering new values in the analysis 2 column for each input line in which change is required. If any part of a line is changed, the entire line must be entered in the analysis 2 column. Lines that are not to be altered are not re-entered. For example, if an analysis had been using a 10 percent cost of capital and there was some uncertainty about whether the true rate might be 12 percent, an adjusted analysis should be run. This would be done by entering 1 2 2 2 3 1 1 in line 27 of the analysis 2 column in place of the original 1 0 2 2 3 1 1 which appears in column 1. For batch operation, the line numbers for all lines that were changed are then entered in numerical order on line 99. In our example, 2 7 0 0 would be entered on line 99. Any number of adjusted analyses can be run.

If the program is run interactively, the computer will ask for the line numbers to be changed and the new values to be used if an adjusted analysis is required.

It is important to remember that each adjusted analysis builds on the previous one. Thus, if the farmer in the above example also wanted to know the effect of a reduction in his cash flow estimates from \$12000 per year to \$11000 per year, he could do this by entering the new value (say 0 1 1 0 0 0 1 0) in line 28 for the third analysis and 2 8 0 0 in line 99. However, if he did this, the third analysis would use the 12 percent cost of capital used in the second analysis. If it is desired that the 10 percent rate be used in analysis 3, the original values for line 27 must be reentered in column 3. In this case line 99 will read 2 7 2 8 0 0.

There are at least two important cases where adjusted analyses should be used. The first is where the true value of an input coefficient is in doubt. The appropriate procedure in this instance is to use the best estimate of the correct value in the first analysis and then run an adjusted analysis with the coefficient set at the other value or values it may take. This procedure is illustrated in the above paragraph.

A second case is where a different combination of investment items is to be considered. For example, a farmer might consider increasing his herd size by only 50 cows instead of 75, or using a smaller combine and accepting higher losses and labor costs.

In analyzing any problem it is important that significant effort be made to anticipate all alternatives that should be considered. Only if this is done will a satisfactory answer to a real problem be possible with one set of analyses by the computer.

EXPLANATION OF OUTPUT

(See examples on pages 71 and 97)

Investment analysis results

1. NET PRESENT VALUE OF THE INVESTMENT is the economic return in discounted dollars, over the planning period, if the investment is made. This is the number of dollars that, if received today, would be equivalent to the net income above all costs generated by the investment over the entire planning period. This is calculated as the sum of (1) total of the present value of after-tax net cash flows, (2) present value of after-tax terminal value of all investments, and (3) present value of investment tax credit, less present value of investment tax credit recapture, minus (4) the total of the present value of all investment outlays. If this value is positive, the investment is expected to be a profitable one and it should be given serious consideration.^{1/} However, it should be stressed that the answers are dependent upon the input values entered and, therefore, the quality of any answer is only as good as the data entered (garbage in - garbage out).
2. PERCENT AFTER-TAX COST OF CAPITAL is the discount rate used in calculating the net present value of after-tax cash flows. An after-tax cost of capital is used to reflect the fact that any return on invested capital will be taxed, and thus the return given up by investing the money in this investment rather than another is less than the before-tax return by the amount of that return that would be paid in taxes.

The after-tax cost of capital is calculated as the before-tax cost of capital multiplied by one minus the tax rate expressed in decimal form. That is, if the tax rate is 40 percent and the before-tax cost of capital is 10 percent, the after-tax cost of capital is 6 percent or 10 multiplied by (1-.4). The tax rate used in this case is the average tax rate paid on the additional income generated by the investment.

- 3.1. BEFORE-TAX CASH FLOW is the total net cash inflow to the business resulting from the investment being considered. When the projected cash flows are entered on lines 28-37, (the budget generator is not used), the before-tax cash flow for each year is calculated as the value entered on lines 28-37 plus livestock sales (cull cow and calf sales) generated by the investment. If the budget generator is used, before-tax cash flow is the estimated net income with the investment minus the net income from the business if the investment were not made (base year income, adjusted for inflation when applicable).
- 3.2. DEPRECIATION is the total depreciation (cost recovery) to be taken for all items included in the investment. To calculate cost recovery the computer develops a schedule for each investment and then sums the cost recovery for all items for each year. No cost recovery is taken in the year of disposal of an item.

The basis used to calculate depreciation is the amount paid minus half of the federal investment tax credit taken. If assumption 127 is changed to 1

^{1/}For a detailed explanation of the net present value method see Casler, G.L., B.L. Anderson and R.D. Aplin, Capital Investment Analysis: Using Discounted Cash Flows, Grid, Inc., 1984.

the basis is not reduced in calculating depreciation but the investment tax credit percentage taken is reduced by the amount indicated in assumption 128.

- 3.3. TAXABLE INCOME is the increase in taxable income resulting from the investment. It is calculated as the before-tax cash flow minus depreciation with five adjustments. The first adjustment reduces taxable income to reflect capital gain treatment of some livestock sales. This is accomplished by subtracting from before-tax cash flow the federal capital gain deduction (assumption 132) on income from the sale of raised livestock counted as part of the investment and raised replacements resulting from the investment. Animals purchased as yearlings are not considered to be raised animals.

For the second adjustment the undepreciated balance on purchased cows that are sold is subtracted from taxable income. This accounts for (1) tax loss sustained as a result of the sale and (2) the return of investment capital, which is not taxable. Tax losses result when an animal is sold for less than the undepreciated balance on the animal. In example B (Table 3) a tax loss of \$350 is incurred. The amount of the sale price of an animal that represents depreciation which has not been taken is return of capital and is nontaxable. Thus, it must be subtracted from before-tax cash income calculated above, which includes the total value of animals sold. The return of capital is \$200 in example A and \$250 in example B (Table 3). Since the sum of the tax loss and the invested capital returned always equals the undepreciated balance, both of these factors are allowed for by subtracting the undepreciated balance from taxable income.

Table 3: Example Situations With Sale of Purchased Animals

Value	Example		
	A	B	C
Purchase price	1,000	1,000	1,000
Sale (cull) price	500	250	1,500
Depreciation taken	800	400	800
Undepr. balance	200	600	200

The third adjustment reduces taxable income by the amount of the sales value of each cow purchased as part of the investment that is excluded from taxation because it qualifies for capital gain treatment. That portion of the sales price of an animal that exceeds the original purchase price (\$500 in example C) is capital gain income. The amount of the capital gain income to be subtracted from taxable income is determined using assumption 132.

For the fourth adjustment, taxable income is reduced to reflect appropriate tax treatment of income from the sale of animals that were originally purchased as yearlings. This is accomplished by applying the same adjustment to these animal sales as is indicated in adjustments 2 and 3 for purchased cows.

The fifth adjustment modifies taxable income to reflect appropriate tax treatment of income from the sale of purchased replacements required as part

of the investment (to replace cows and yearlings purchased as part of the investment). This is accomplished by applying the same adjustment for these animal sales as is indicated in adjustments 2 and 3 for purchased cows.

- 3.4. TAX is the amount of federal and state tax. To calculate personal income taxes, the marginal federal tax bracket entered on line 27 is used to indicate the level of income if the investment is not made. Specifically, the level of income at the middle of the federal tax bracket indicated is used as the base. That base income is adjusted upward to get the level of income that would have been necessary in order for the taxpayer to have paid federal taxes on that base income after subtracting state income taxes (itemized deductions are assumed). Using the income thus calculated, the increase in state income tax that would be paid on the increased income is determined using the marginal tax rates in Table 1. The calculated state income tax is then subtracted from the increase in taxable income and the increase in federal tax is calculated on the remainder using the marginal rates from Table 6. If more than one operator is involved in the business, the taxable income is divided by the number of tax families before state and federal income taxes are calculated. After state and federal income taxes are calculated they are multiplied by the number of tax families. Total tax printed out as part of the results of each analysis is the sum of state and federal income taxes.
- 3.5. AFTER-TAX CASH FLOW is the Before-Tax Cash Flow explained in section 3.1 minus the increased taxes that would be paid.
- 3.6. PRESENT VALUE is the present value of the after-tax cash flows. It is the value in today's dollars of the cash flows generated during each year of the planning period, after adjusting for the taxes that would be paid on that increased income. The "present value" for each year is calculated by discounting the after-tax cash flow received in that year with the after-tax cost of capital.
- 3.7. TOTAL PRESENT VALUE is the arithmetic sum of the present value of after-tax cash flows for all the years of the planning period.
- 4.0. INVESTMENTS (OUTLAYS) are printed only for years in which there are one or more investments. Purchases that are required to replace part of the investment are included.
- 4.1. BUILDING, EQUIPMENT and LAND outlays indicate the amount of investment made each year to purchase and/or replace investment items indicated in the input.
- 4.2. CATTLE outlays are divided into two parts, (1) investment in purchased cattle, including the initial investment and replacements for the increased herd size, and (2) the value of raised animals that are part of the investment. The value of purchased cattle in any year is the number of animals purchased that year multiplied by the purchase price per head.

The model assumes that for every cow increase in herd size one additional animal must be purchased or an extra raised animal added to the herd. Thus, the number of raised animals that must be included as part of the investment is calculated for each year as the increase in herd size minus the number of purchased animals. The value of these raised animals is calculated as the

number of animals multiplied by the purchase price per head for purchased animals times the percent that the price of raised animals is of purchased animals (assumption 58).

Cattle outlays also include investment required for yearlings added at the time herd size is increased. The value of yearlings is calculated as the number of yearlings purchased or raised multiplied by the respective price for each (see assumptions 56 and 58).

The number of replacements required to replace the increase in herd size is calculated from the total increase in herd size (up to the year for which calculations are being made) and the culling rate, and rounded to the nearest whole animal. This does not include any replacements that have been or may have to be purchased for the existing herd. The number of replacements to be purchased is then determined using input line 18c. The value of purchased replacements is the same as the cost of animals added as part of the investment.

The value of all replacements purchased over the life of the investment are included. The value of raised replacements are included through the various operating cost items (feed, vet, livestock expense, etc.) included in the cash flows entered or calculated by the budget generator.

The number of yearlings required is equal to the number of raised replacements that will be required in the year after herd size is increased (total replacements required minus the number to be purchased as calculated above). The proportion of the yearlings that will be purchased is indicated by assumption 57.

- 4.3. ORCHARD-VINEYARD outlays are divided into two parts (1) TREES-VINES and (2) LAND. The outlay for trees or vines is the establishment cost per acre times the acres established in that year plus development costs per acre that are capitalized times the acres for which development costs are capitalized.

The outlays for land are the land values per acre from lines 16a. and 19a. times acres established each year. This land investment actually represents a land "commitment" rather than investment since it is not a new investment.

- 4.4. TOTAL investment or outlay for each year is the sum of all buildings, equipment, purchased cattle, raised cattle, orchard-vineyard and land investments made in that year.
- 4.5. The PRESENT VALUE column indicates the present value of total investments or outlays for each year. This is the economic cost in year 0 dollars of the investment made in each year of the planning period. These values are calculated by discounting the total investment for each year by the after-tax cost of capital.
- 4.6. TOTAL present value is the sum of the present value of the total investment for all of the years of the planning period.
- 4.7. TERMINAL VALUE BEFORE-TAX indicates the remaining value of all the items in each of the investment categories (buildings, equipment, cattle, orchard-vineyards and land) at the end of the planning period. For buildings and equip-

ment this is the total of the remaining value that each item would have at the end of the planning period if it had been depreciated using the straight-line method and the salvage percent indicated in the input for that item. The before tax terminal value of cattle is the increase in herd size multiplied by the value per cow at the end of the planning period indicated on line 20a, plus the increase in heifer numbers multiplied by the average value per heifer at the end of the planning period from line 20b. The terminal value of land is the sum of the terminal values for each of the land purchases indicated as part of the input.

- 4.7. **TERMINAL VALUE AFTER-TAX** is the value of the investment at the end of the planning period minus taxes that would be paid if those items were sold at the end of the planning period.

Taxable gain on buildings and equipment is the difference between the terminal value before tax and the unrecovered cost computed with the cost recovery option requested by the user. The gain is taxed as ordinary income. The amount by which the terminal value of land exceeds its cost is taxable. Since the income is taxable as capital gains, (1 - assumption 132) percent of the increase in value is multiplied by the tax rate. The tax thus calculated is then subtracted from the before-tax terminal value of land to get the after-tax terminal value.

The taxable income generated by the sale of cattle is calculated as (1 - assumption 132) percent of the value of raised animals plus the taxable income from the sale of animals that were purchased. The value of raised animals is the total increase in the value of the herd minus the value of animals purchased in the last "X" years where "X" is the average number of years to replacement for purchased cows. This is calculated as one divided by the culling rate. Taxable income from the sale of purchased animals is the difference between the undepreciated balance for those animals purchased in the last "X" years and their terminal value, divided between capital gain and ordinary income as appropriate. The taxable income is multiplied by the tax rate and the resulting tax subtracted from the before-tax terminal value to get the after-tax terminal value of cattle.

For both cattle and land, the tax rate used is the average marginal rate paid on increased income resulting from the investment. This is the same rate that is used in calculating the after-tax cost of capital.

- 4.8. **PRESENT VALUE** of the after-tax terminal value of investments indicates the value in year zero dollars of the money that would be received if the items purchased as part of the investment were sold and the required taxes paid on the gain from the sale. While these items may or may not be sold at the end of the planning period, the increased value represents gain on which taxes will have to be paid sometime. The present value of the after-tax sale value of these items is likely a good approximation of the remaining value of investment items regardless of when they are sold.

- 5.1. **INVESTMENT TAX CREDIT** is the amount of investment tax credit that would be earned if the investment were made. This includes both federal and state investment credit. Information is printed out for years in which investment credit is earned. Recapture of investment credit is subtracted to obtain net investment credit.

- 5.2. **PRESENT VALUE OF INVESTMENT TAX CREDIT** is the value of the net investment tax credit earned by the investment in terms of year zero dollars. This is

the value of the investment tax credit after discounting at the after-tax cost of capital. In calculating this value it is assumed that the tax credit is used in the year it is earned.

- 6.0. Two types of budget information may be printed out. When the budget generator is not used, the budget information includes only the livestock or orchard and vineyard information generated by the model and a cash flow summary. This is explained in 6.1 below. When the budget generator is used the complete budgets for the first five years of the investment are printed out. This is explained in section 6.2 below.

6.1. Budget generator not used

- 6.1.1. LIVESTOCK SALES indicates the increase in cull cow and calf sales resulting from the increase in herd size due to investment. The increase in number of cows sold is the number of purchased cows, purchased yearlings, and purchased replacements as well as raised cows and yearlings, which are part of the investment, that are culled. The value of the additional cows culled is calculated as the number culled multiplied by the price indicated on input line 17c.

Increase in calves sold is calculated using assumption 02 and the increase in herd size, and is not rounded to the nearest whole animal. The value of calves is determined from assumption 01 and the cull price entered on line 17c.

- 6.1.2. EXPENSED DEVELOPMENT costs indicates the amount of development costs that were expensed, rather than capitalized, as requested by the user.
- 6.1.3. INPUT CASH FLOWS is the level of cash flows entered on lines 28 through 38.
- 6.1.4. INCREASE IN CASH FLOW is the total increase in cash flow resulting from the investment. For investments including livestock it is calculated as the input cash flow plus livestock sales. For orchard and vineyard investments, it is the input cash flow less expensed development costs. Increase in cash flow is the before-tax cash flow used in section 3.1 above.

6.2. Budget generator used

- 6.2.1. When the budget generator is used, values for all income and expense categories are printed out for each of the first five years of the investment. The method used to estimate each of the income and expense items is indicated in the section entitled Method of Estimating Cash Flow Values for Dairy Budget Generator, beginning on page 44.
- 6.2.2. INCREASE IN CASH FLOW indicates the amount that net income is increased by the investment over what it would be with the base year business under the same price, cost and inflation conditions. Under conditions of zero inflation, increase in cash flow is the difference between base year net income and budgeted year net income. However, if a positive rate of inflation is assumed, increase in cash flow is the budgeted year net income minus base year net income calculated with the inflated prices and costs appropriate for the budgeted year. Increase in cash flow is the before-tax cash flow used in section 3.1 above.

- 7.0 The Financial Feasibility Analysis can be conducted at two levels:
(1) for the complete farm business or (2) for the investment only and is

printed for the first five years. If the analysis is conducted for the complete farm business, the heading for this section reads:

FINANCIAL FEASIBILITY ANALYSIS: COMPLETE FARM BUSINESS

If financial feasibility relates only to the investment itself and the cash flows generated by that investment, the heading for this section reads:

FINANCIAL FEASIBILITY ANALYSIS: INVESTMENT ONLY

FINANCIAL FEASIBILITY ANALYSIS: COMPLETE FARM BUSINESS

7.1.0 This analysis assesses the ability of the complete farm business including the proposed investment to make all of the debt payments that the business will have after the investment is made. Financial feasibility for the complete farm business is obtained by leaving assumption 125 at its assumed value of 0.

7.1.1 BEFORE TAX CASH FLOW is the total net cash income for the business. This is the total amount of cash generated for payment of income taxes, family living, cash investment and debt payments.

If the budget generator is used, this is calculated as the NET INCOME for the complete business from section 6 of the output (Budget) plus any non-farm income indicated in input line 84b. If the budget generator is not used the BEFORE TAX CASH FLOW is the sum of (1) the cash income generated by the investment, listed as BEFORE TAX CASH FLOW in output section 3, (2) the annual net cash flow generated by the business without the investment, indicated on line 81a of the input form and (3) nonfarm income, indicated on line 84b.

If values are being inflated, the budget generator inflation rates determine NET INCOME, nonfarm income is inflated by assumption 135 and cash flows entered on line 28 through 37 are inflated by assumption 135.

7.1.2 TAXES PAID is the amount of state and federal income tax that the business is expected to pay on the total income generated by the business after subtraction of State and Federal investment tax credit. This number can be negative if taxes were paid in any of the three years prior to investment and the investment generates investment tax credit that can be carried back. State taxes are calculated first and are subtracted from taxable income for calculation of Federal taxes.

State Taxes

If the budget generator is not used, State taxable income is calculated as:

	Taxable income from the investment (output section 3)
<u>Plus</u>	Expected net cash income without the investment (indicated in input line 81a).
<u>Plus</u>	Annual nonfarm income (from input line 84b)
<u>Minus</u>	Depreciation expected if the investment is not made (indicated in line 80b).

Minus Amount of livestock sales generated by the investment that is exempted due to capital gains treatment. The proportion subject to capital gain treatment is indicated by assumption 129. The percent exempted is assumption 133.

Minus Amount of income without the investment that is exempted due to state capital gains treatment. The amount subject to capital gain treatment is indicated in input line 81b and the proportion exempted is assumption 133.

Minus Total interest paid during the year on all loans outstanding

Minus Personal exemptions based on the numbers of exemptions per family from input line 84c, the number of tax families from input line 27d and state exemption per person (assumption 131).

If there is more than one tax family, the average family income is determined by dividing total income by the number of tax families. The state taxes per family are calculated by subtracting the state standard deduction from average family income and applying the state tax rates listed in assumptions 89-124. Total state tax payable is then the sum of the tax paid for all families plus state investment tax credit recapture on items that are part of the investment.

If the budget generator is used, state taxable income is the net income from the investment (from budget section) (1) plus nonfarm income from line 84b, (2) minus depreciation without the investment (line 80b), (3) minus livestock income generated by the investment that is exempted from taxation due to capital gain treatment (livestock sales times assumption 129 times assumption 133), (4) minus personal exemptions as described above. State taxes payable are calculated from taxable income in the same manner as described above.

Actual state tax paid (whether or not the budget generator is used) is the state taxes payable minus state investment tax credit taken. The amount of state investment tax credit available in any year is (1) the amount indicated in line 83b inflated by assumption 7, plus (2) the amount generated by the investment(s). Investment tax credit carryover (line 82b) is added to the available credit for the first year. Investment tax credit is used to reduce the state tax. The oldest available state ITC is used first.

Federal Taxes

If the budget generator is not used, Federal taxable income is calculated in the same manner as the state taxable income except that (1) the Federal capital gains exclusion is used (assumption 132), (2) the federal personal exemption is used and (3) the state taxes paid are subtracted. Subtraction of the state taxes in this manner implies that the business itemizes deductions and that the deduction exclusive of state income taxes are exactly equal to the "zero bracket amount" (3,400 in 1984).

If the budget generator is used Federal taxable income is the same as that used for calculating state taxes except that (1) Federal personal exemptions and capital gain rates are used and (2) state taxes paid are deducted.

Whether or not the budget generator is used, the Federal tax payable per family is calculated by dividing the Federal taxable income by the number

of tax families and applying the Federal tax rates listed in Table 6, "Parameters used in the model". Total federal tax payable is then determined as (1) the amount for each family multiplied by the number of families plus (2) federal investment tax credit recapture on items that are part of the investment.

Federal tax paid is the Federal taxes payable minus the investment tax credit taken. The Federal investment tax credit carryover (line 82a) is assumed to have been generated evenly over the seven years preceding the investment. Investment tax credit generated each year of the planning period is the (1) amount generated by the investment, plus (2) federal investment tax credit that would have been available without the investment (line 83a inflated by assumption 7). The oldest federal investment tax credit is always used first. Federal ITC is used to reduce the Federal tax.

Total TAXES PAID is the sum of the state tax paid plus the federal tax paid.

- 7.1.3 AFTER-TAX CASH FLOW is the before-tax cash flow minus the taxes paid. This represents the amount of cash available from the entire business for family living, debt service and cash investment.
- 7.1.4 LIVING EXPENSES is the amount entered on line 84a inflated by assumption 134.
- 7.1.5 CASH AVAILABLE FOR DEBT is the after-tax cash flow minus the amount spent on family living.
- 7.1.6 DEBT PAYMENTS: SCHEDULED is the sum of the debt payments on all debt outstanding at the time the investment is made (lines 68-77) plus debt generated by the investment. Payments include both principal and interest. For any loans that are refinanced, the outstanding principal balance at the time of refinancing is used to determine the payments required from the date of refinancing forward.
- 7.1.7 DEBT PAYMENTS: INCLUDING MACHINERY REPLACEMENT is the scheduled debt payments plus the payments required on replacements for the existing machinery inventory that will be necessary in future years. The machinery investment required to replace the current machinery inventory comes from line 80a, inflated by the machinery inflation index (assumption 7). Replacement machinery is financed with the terms indicated in line 79e. These payments may sometimes be reduced by refinancing (line 78g).
- This line indicates the total future debt payments required to service currently existing debt, new debt that is part of the investment and debt that will have to be incurred in future years to maintain the current machinery inventory. Funds to maintain current livestock, land and building inventories should be included in operating expenses. No allowance is made for replacement of existing structures.
- 7.1.8 EXCESS OR DEFICIT indicates the amount by which the funds available for debt service deviate from the required debt payments. A deficit indicates the amount that living expenses would have to be reduced, expenses reduced or income increased in order to meet all debt payments.

- 7.1.9 OUTSTANDING DEBT indicates the amount of principal outstanding on all debts at the end of year. INTERMEDIATE debt has a repayment term of less than 10 years. LONG TERM LOANS are those loans with repayment period of 10 years or more. MACHINERY REP. indicate the principal outstanding on funds borrowed to buy replacement machinery required to maintain the existing machinery inventory.
- 7.1.10 DEBT PAYMENTS indicate the breakdown of the total DEBT PAYMENTS: SCHEDULED INCL. MACH. REPLACEMENT listed above (see 7.1.6 and 7.1.7). The payments are the amounts paid on the corresponding outstanding principal indicated under outstanding debt.
- 7.1.11 FINANCING FROM EQUITY indicates the amount of funds required to make the investment that are provided from equity sources (not financed). This represents new equity capital investment in the business or funds that have been generated by the business in prior years that are currently not invested in the business.

FINANCIAL FEASIBILITY ANALYSIS: INVESTMENT ONLY

- 7.2.0 This analysis assesses the ability of the investment by itself to generate the funds necessary to make all payments resulting from the investment. This type of analysis is obtained by changing the value of assumption 125 to 1. For this analysis, data on current outstanding debt (lines 68-77) and the farm situation without the investment (lines 80 through 83, 84b and 84c) are omitted. Line 84a will normally be blank since an additional investment will not normally result in increased living expenses. However, if living expenses will increase because of the investment, then the amount of the increase is listed on line 84a.
- 7.2.1 BEFORE-TAX CASH FLOW is the cash flow generated by the investment and comes from (is the same as) the before tax cash flow listed in section 3 (CASH FLOW) of the output.
- 7.2.2 TAXES PAID is the amount of federal and state tax paid on the additional income generated by the investment. The marginal tax bracket entered on line 27b, the state tax rates listed in Table 1 (Values Assumed By The Model) and the federal tax rates listed in Table 6 (Parameters Used In The Model) are used to determine the added taxes that would result from income generated by the model. The taxes payable come from the TAX column of section 3 (CASH FLOW) of the output. See section 3.4 for a discussion of how these taxes are calculated. Since the taxes payable represents the change in taxes paid by this business as a result of the investment, the amount can be either positive or negative.
- The amount of tax actually paid is the amount of tax payable minus the investment tax credit taken. The procedures listed in section 7.1.2 for application of Federal and State ITC are used, except that the only investment tax credit that is available is that generated by the investment. This ITC is listed in section 5 of the output.
- 7.2.3 AFTER-TAX CASH FLOW is the before-tax cash flow minus the taxes paid. It indicates the amount generated by the investment for family living, debt service and cash investment.

- 7.2.4 LIVING EXPENSES indicates the increase in living expenses that result from the investment. This number frequently will be zero.
- 7.2.5 CASH AVAILABLE FOR DEBT indicates the amount generated by the investment that is available for debt service and cash investment.
- 7.2.6 DEBT PAYMENTS: SCHEDULED indicates the debt payments that result from the investment.
- 7.2.7 DEBT PAYMENTS: INCLUDING MACHINERY REPLACEMENT will always be the same as DEBT/PAYMENTS: SCHEDULED since replacement of existing machinery is not of concern when the financial feasibility of the investment by itself is being considered.
- 7.2.8 EXCESS OR DEFICIT indicates the difference between (1) the amount of cash available for debt payment that is generated by the investment and (2) the debt payments that result from the investment. It must be remembered that in this limited type of analysis, where only the results of the investment per se are being considered, a deficit may not mean that the business as a whole will not be able to make its debt payments. However, if a deficit exists, it indicates the amount of funds that will have to be generated by the rest of the business if payments are to be met. An excess indicates the contribution to the cash flow of the business that is provided by the investment.
- 7.2.9 OUTSTANDING DEBT indicates the debt outstanding as a result of the investment. Debt not caused by the investment is excluded. The definitions of intermediate and long term loans are identical to those indicated in section 7.1.9. Machinery replacement will always be 0.
- 7.2.10 DEBT PAYMENTS indicate the breakdown of debt payments resulting from the investment. The payments correspond to the debt outstanding indicated above. Machinery replacement will always be 0.
- 7.2.11 FINANCING FROM EQUITY is same as indicated in section 7.1.11.

WARNINGS

- 8.1 INVESTMENT TAX CREDIT EXCEEDS TAX TO BE PAID IN YEARS: In calculating the net present value of the investment, the model assumes that there is sufficient tax to be paid that all investment tax credit can be taken in the year it becomes available, or that sufficient taxes have been paid in previous years that the investment tax credit can be used by carrying the tax credit back to previous years. If financial feasibility is not used, the years for which the tax credit exceeds the total tax due from the business, including the investment, are determined. If there are any such years, the message shown above is printed followed by a listing of the specific years for which tax credit exceeds estimated tax.
- 8.2 LOSSES INCURRED BUT NOT CARRIED FORWARD OR BACK IN YEARS: Unprofitable investments, investments with large negative cash flow in one or more years or investments with a large amount of depreciation to be taken in one

year can provide the business with losses (negative total taxable income, including income without the investment) in one or more years. Tax law allows these losses to be carried backward or forward. Since the level of taxable income in years previous to model year zero are unknown to the program and since losses frequently occur in the first few years, the model does not attempt to move losses forward or back. If there are losses, the message shown above is printed followed by a listing of the specific years in which losses occur.

- 8.3 Be careful in using the model to estimate the income impacts of inflation. Use of inflation with constant rates of inflation for all items, that is assumptions 54 and 29 both set to the same value, will make profitable investments more profitable and may make unprofitable investments either more or less profitable. In general, inflation will make the net cash flow larger in absolute value and will increase the terminal value of assets.

However, if differential rates of inflation for different items are used for a period of more than 5 to 10 years, some unexpected things may happen. An example appears in Table 4. In this case, both income and expense items have a weighted base year inflation rate of 5%. However, net income first increases and then decreases. The compounding effect of the higher inflation rate on the smaller item ultimately has a very significant impact. This is shown even more dramatically in Table 5, where the weighted base year inflation rate on expenses and income are each 6%. Net income

Table 4. Impact of Inflation on Net Income
Example 1

Income or Expense	Inflation Rate	Year						
		0	1	2	5	10	15	20
Expense A	10	\$10	11.00	12.10	16.11	25.94	41.77	67.28
Expense B	4	50	52.00	54.08	60.83	74.01	90.05	109.56
Total		60	63.00	66.18	76.94	99.95	131.82	176.84
Income	5 a/	75	78.75	82.69	95.92	122.17	155.92	199.00
Net Income		\$15	15.75	16.51	18.78	22.22	24.10	22.16

a/ Weighted average of rates used for expenses

Table 5. Impact of Inflation on Net Income
Example 2

Income or Expense	Inflation Rate	Year						
		0	1	2	5	10	15	20
Expense A	16	\$10	11.60	13.46	21.00	44.11	92.66	194.61
Expense B	4	50	52.00	54.08	60.83	74.01	90.05	109.56
Total		60	63.60	67.54	81.83	118.12	182.71	304.17
Income	6 a/	75	79.50	84.27	100.37	134.31	179.75	240.53
Net Income		15	15.90	16.73	18.54	16.19	-2.96	-63.64

a/ Weighted average of rates used for expenses

increases for a few years and then declines rapidly to become significantly negative by year 20. Note that the inflation rates that were used were really not out of the range of values that might be entered.

In trying to estimate future inflation rates, historical data are frequently very misleading. For example, during the early 70s, gas and oil prices increased very rapidly and everything we heard about energy prices led us to believe that the trend would likely continue. However, recent changes in gas and oil prices have not been much more rapid than many other items.

Minor differences in the inflation rates used for income and expense items can materially change the relative profitability of farming in only a few years. This can significantly influence the apparent profitability of investments. Given the perfectly competitive nature of agriculture, there is little reason to believe that farming will suddenly become substantially more or less profitable and stay that way for a long period of time. We suggest that unless you are prepared to devote a lot of time to projecting inflation rates that your analysis is more likely to be correct if differential rates of inflation are not used. A general rate of inflation may be necessary to obtain appropriate cash flows.

If the base-year data represents an unusually profitable or unprofitable year relative to future expectations without the added investment, adjust base-year data rather than try to use projected inflation rates to project future profitability.

ERROR MESSAGES

If a questionable input entry is made or an inconsistency is found in the data input, an error message is given. For some errors the input information must be corrected before an analysis can be made. For other errors the message is just a warning that the input information may be incorrect.

The errors and an explanation of their causes are listed below. The line number in parentheses after each error message indicates the input line number to which the message refers. When no line number is indicated, the error may occur with a number of different input values. In the listing below "X" is used to indicate that a line number will be listed and "Z" or "Y" indicates that a numerical value will be given.

1. *** PLANNING PERIOD LESS THAN 1 YEAR (1)

A planning period of less than one year has been entered. The shortest planning period the model can use is one year.

2. *** PLANNING PERIOD GREATER THAN 25 YEARS (1)

A planning period of more than 25 years has been entered. The longest planning period the model can use is 25 years.

3. *** INAPPROPRIATE RECOVERY CLASS "Z" IN LINE "X"

The recovery class that can be selected for various types of property is limited by law. For example, the 3 year recovery class can not be used for any type of building. "X" indicates the line number where an incorrect recovery class "Z" has been entered.

4. *** INAPPROPRIATE RECOVERY OPTION "Z" IN LINE "X"

The number given for the recovery option must be 1, 2, 3, 4 or 9. See input form line 3a.

5. *** YEAR OF PURCHASE "Z" IN LINE "X" NOT IN PLANNING PERIOD

All items that are part of the investment must be purchased during the planning period. "Z" indicates the purchase year entered.

6. *** ZERO PERCENT CULLING RATE UNACCEPTABLE FOR COWS

The expected culling rate must be entered.

7. *** CULL COW VALUE "Z" EXCEEDS PURCHASE PRICE "Y"

Cull cow price must be less than or equal to the purchase price per head.

8. *** PERCENT OF COWS REPLACED WITH PURCHASED ANIMALS "Z" EXCEEDS 100

Percent of replacements to be purchased must be 100 or less. "Z" indicates the percentage entered. This message will normally indicate incorrect entry of data.

9. *** SUM OF CASH FLOW YEARS IN LINES 28-37 DOES NOT EQUAL PLANNING PERIOD

The number of years for which cash flows are entered on lines 28 through 37 must equal the planning period. If there are years of zero cash flows, these must be included.

10. *** NO CASH FLOW OR BUDGET DATA ENTERED

In order to evaluate an investment either cash flow data must be entered on lines 28-37 or budget data must be entered on lines 38 to 63.

11. *** ASSUMPTION CODE "Z" USED IN LINE "X" DOES NOT EXIST

Only assumption codes listed in the "list of assumed values" can be used. "Z" is a code number which is not on the list.

12. *** CANNOT USE BUDGET GENERATOR - NUMBER OF COWS IN BASE YEAR IS ZERO

A number of calculations used in the budget generator require the number of cows in the base year. Thus, the generator cannot be used unless the base year number of cows is greater than zero.

13. *** LINE 27 MISSING (27)

Line 27 is missing. The Program cannot run without cost of capital and tax rate information.

14. *** LINE 19 RECOVERY CLASS OR OPTION INFORMATION MISSING

If cows are purchased or the herd size is increased so that yearlings are purchased to maintain herd size, the recovery class and option must be listed in line 19. Due to the yearling purchase requirement this information may be required even when no cows are purchased.

If herd size is increased, the information can be omitted only if:

1. assumption 57=0
2. no cows are purchased,
- and 3. line 18c=0

15. *** LINE "X" -- YEARS SINCE LOAN TAKEN OUT EXCEEDS ORIGINAL TERM

The data entered imply that the loan has been outstanding longer than its original period. This could occur only if payments had not been made as scheduled. The model cannot handle such loans. If this is actually the case, re-enter that loan as if it were taken out at the time the investment is made (year since taken out = 0) with the payment entered as it exists. Under "years to repay" enter the number of years that it will take to pay off the loan at that rate of payment.

16. *** LINE "X" -- INTEREST RATE EXCEEDS 20 PERCENT

This is a warning that an interest rate in excess of 20 percent has been entered. Check to be sure that the interest rate entered is correct. The model will run with the entered rate.

17. *** LINE "X" -- INVALID CREDIT TERMS FOR REFINANCING

The only valid credit term identification numbers are 1, 2, 3, or 4. In addition, this message will be printed if the credit terms number entered in lines 69, 71, 73, 75 or 77 was not identified in lines 64 through 67.

18. *** LINE 82 -- FED ITC CARRYOVER INCONSISTENT W/FED TAXES PAID BUT NOT OFFSET

Since Federal Investment tax credit can be carried forward or back it is impossible to have federal investment tax credit carryover (line 82a) and have paid taxes during the last three years that have not been offset by investment tax credit (line 82c). Either line 82a or line 82c must be zero (or blank).

19. *** LINE 84 -- NUMBER OF EXEMPTIONS EXCEEDS 20

An error has apparently been made in the number of exemptions entered.

20. *** LINE 79 -- INVALID CREDIT TERMS

The only valid credit terms for line 79a through d are 1, 2, 3, 4, or 5. In addition, this message will be printed if the credit terms number entered was not identified in lines 64 through 67.

21. *** LINE 79 -- VALID EQUIPMENT REPLACEMENT CREDIT TERMS MUST BE ENTERED IF FINANCIAL FEASIBILITY IS USED (SEE SECTION 7.1.7)

Equipment credit terms are used to estimate the debt service requirements connected with replacement of the existing machinery inventory. Thus, equipment credit terms must be entered even if no equipment is purchased as part of the investment. Valid terms are 1, 2, 3, or 4. Identification number 5, financing from equity, cannot be used for replacement of existing equipment.

22. *** LINE 79 -- CREDIT TERMS NOT ENTERED FOR LAND
CREDIT TERMS NOT ENTERED FOR BUILDINGS
CREDIT TERMS NOT ENTERED FOR MACHINERY
CREDIT TERMS NOT ENTERED FOR COWS
CREDIT TERMS NOT ENTERED FOR TREES AND VINES

If the financial feasibility section is used, credit terms must be entered for all new investment items. The error message indicates the investment item for which credit term have not been entered.

METHOD OF ESTIMATING CASH FLOW VALUES FOR BUDGET GENERATOR

The budget generator estimates each budget cash flow value individually. All budgeted values are based on the base year performance and other input data. The listing below indicates the method used to estimate each cash flow item. The procedures outlined do not include inflation adjustments. If values are to be inflated, they are calculated as indicated below and then modified to reflect the inflation rates indicated in assumptions 29 and 59 through 82.

EXPENSES

Labor

Labor is increased from base year value to the final value (input line 52) in proportion to the increase in cow numbers unless assumption code 11 is set to 1 through 5. In this case, the total increase occurs in the year entered for assumption 11 (i.e., years 1 through 5).

Feed

Feed cost per cow, acres of corn per cow, acres of hay crops per cow and acres of other feed crops per cow are calculated for the base year. Feed cost per cow for each year is calculated as base year feed cost per cow multiplied by the number of cows, plus or minus any deficit or excess acres of each crop multiplied by the feed value of that crop (assumption codes 12, 13 and 14). If feed crops were sold in the base year, the deficit is adjusted for that portion of feed crop acres used to produce crops sold. In addition, an allowance is made for feed crop sales generated by a change in acreage from base year data. If assumption code 15 is 0, any deficit in crop production will be subtracted from feed crop sales before feed costs are increased.

Machine hire

Cost per acre of corn, other feed crops, and non-feed crops (excluding hay) from base year multiplied by acres of corn, other feed crops, and non-feed crops.

<u>Machine repairs</u>	Maximum of (1) cost per crop acre from base year multiplied by the number of crop acres in each year or (2) base year cost plus minimum marginal machine cost with increased herd number (assumption code 16) multiplied by number of cows.
<u>Auto expense</u>	Base year expense per cow times number of cows up to maximum percent increase indicated in assumption 17.
<u>Gas and oil</u>	Base year cost per acre times number of crop acres with a minimum percent increase equal to the percent increase in machine repairs.
<u>Purchased replacements</u>	Base year value. Replacement purchases made necessary by new investment in cattle are included in output section 4, under purchased cattle.
<u>Breeding fees</u>	Base year cost per cow times number of cows.
<u>Veterinary and medicine</u>	Base year cost per cow times number of cows.
<u>Other livestock expense</u>	Base year cost per cow times number of cows.
<u>Lime and fertilizer</u>	Data in assumption codes 18, 19, and 20 are used to calculate lime and fertilizer "corn equivalents 1". Lime and fertilizer per "corn equivalent 1" in base year is multiplied by "corn equivalent 1" acres for each year.
<u>Seed and plants</u>	Base year cost per "corn equivalent 2", calculated using assumptions 21, 22, and 23 multiplied by "corn equivalent 2" acres for each year.
<u>Spray and other crop expense</u>	Base year cost per "corn equivalent 3", calculated using assumptions 24, 25, and 26 multiplied by "corn equivalent 3" acres for each year.
<u>Rent</u>	Base year value plus rental indicated in line 58.
<u>Telephone and Electricity</u>	Cost per cow in base year times number of cows.
<u>Miscellaneous</u>	Same percent of total expenses as in base year.

IF REAL ESTATE IS OWNED IN THE BASE YEAR

<u>Land, building, and fence repair</u>	Base year cost per dollar of real estate investment times total investment (base year value of real estate plus average value of buildings over their life plus land purchases).
<u>Taxes</u>	Base year cost per dollar of real estate investment times total investment.
<u>Insurance</u>	Base year cost per dollar of real estate investment times total investment.

IF REAL ESTATE IS NOT OWNED IN BASE YEAR (LINE 61b = 0)

<u>Land, building, and fence repair</u>	Land, buildings, and fence repair expense is estimated by multiplying assumption 83 by the value of land plus the depreciated value of buildings.
<u>Taxes</u>	Taxes are estimated by multiplying assumption 84 by the value of land purchased plus the depreciated value of buildings purchased.
<u>Insurance</u>	There will normally be a base-year entry for insurance even if there is no real estate. In this case the base year insurance entry is assumed to have been on cattle and machinery. An estimate of the value of the cattle and machinery is made by (1) using assumption 87 to determine machinery investment and (2) using the value per cow entered in line 18a, or if that is blank, assumption 86 to estimate the value of the existing herd. The sum of these two investment items is divided into base-year insurance costs to determine the insurance cost per dollar of investment for base year. Total investment in future years is calculated in a similar manner except that the value of purchased real estate plus the depreciated value of buildings is added to the total investment, and assumption 85 is used to weight the insurance cost on real estate investment relative to that for cows and machinery.
<u>INCOME</u>	
<u>Milk sales</u>	Milk price in base year times amount of milk produced (# cows times production level) as adjusted by assumptions 27 and 28.
<u>Livestock sales</u>	Base year livestock sales plus additional value of livestock sold as a result of livestock investments included as part of the investment.
<u>Crop sales from feed crops</u>	Base year sales per feed crop acre (corn plus hay plus other feed crops) times number of feed crop acres, minus adjustments for feed deficits as indicated in feed costs. Base year sales = (crop sales) (1 - % of crop sales from non-feed crops).
<u>Non-feed crop sales</u>	Base year value per acre is calculated as total crop sales multiplied by "percent of crop sales from non-feed crops" divided by number of acres of non-feed crops. Budget value is the base year value per acre multiplied by acres of non-feed crops for each year.
<u>Miscellaneous</u>	Same percent of total receipts as in base year.

Table 6. PARAMETERS USED IN THE MODEL

Federal Tax Rates:

<u>Federal Taxable Income</u>		<u>Tax Rate a/</u>
<u>Over</u>	<u>But Not Over</u>	
\$ 0	\$ 3,400	0
3,400	5,500	.11
5,500	7,600	.12
7,600	11,900	.14
11,900	16,000	.16
16,000	20,200	.18
20,200	24,600	.22
24,600	29,900	.25
29,900	35,200	.28
35,200	45,800	.33
45,800	60,000	.38
60,000	85,600	.42
85,600	109,400	.45
109,400	162,400	.49
162,400	215,400	.50
215,400		.50

a/ Rates are for 1984.

ACRS RECOVERY PERCENTAGE - RAPID RECOVERY:

<u>Recovery Class</u>	<u>Years after Purchase</u>														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
3 year	25	38	37												
5 year	15	22	21	21	21										
10 year	8	14	12	10	10	10	9	9	9	9					
15 year <u>b/</u>	7	11	10	8	7	7	6	6	6	5	5	5	5	5	2

b/ Assumes that 15 year property is purchased in the sixth month of the investor's tax year.

Table 6. PARAMETERS USED IN THE MODEL (continued)

Recovery Periods Allowed for Straight Line ACRS:

<u>Recovery Class</u>	<u>Allowed Recovery Periods (Years)</u>
3 year	3, 5 or 12
5 year	5, 12 or 25
10 year	10, 25 or 35
15 year	15, 35 or 45

EXAMPLE 1: HENRY HOLSTEIN'S PROPOSED DAIRY HERD EXPANSION

Henry Holstein is the operator of a 75 cow dairy farm. He is considering an expansion to 125 cows, including the purchase of 50 acres of cropland. Henry is interested in the profitability (net present value) of the investment as well as the financial feasibility of the investment.

Net Present Value

Since he expects the building and silo investments to last about 15 years Henry will use a 15 year planning period. He has made the following estimates of the initial investment for land, buildings and equipment.

Land	\$40,000
Barn extension	42,000
Silo	35,000
Parlor equipment	5,000
Bulk tank	10,000
Tractor	31,000
Forage harvester	9,000
Silo unloader	7,000

All the items are 5 year ACRS property and he plans to use the rapid recovery option on all items.

Henry's dairy herd had an average of 76 cows during the base year. He plans to expand to 85 cows in the first year and by 10 cows per year until he reaches 125 in the fifth year. He plans to purchase five cows for \$950 each at the beginning of each year and the remainder will come from raised animals.

Henry plans to change his cropping program as follows:

<u>Crop</u>	<u>Base year</u>	<u>Year 1</u>	<u>Year 2 and beyond</u>
		-----acres-----	
Corn	82	136	161
Hay	135	135	135
Oats	29	25	0

Henry's weighted average cost of capital is 15 percent and he expects to be in the 25 percent Federal tax bracket if the investment is not made.

A copy of Henry Holstein's farm business summary for last year is shown on page 52. Henry believes this was a relatively "normal" year, and thus, this business summary will be used, with adjustments, to construct the base year for the budget generator projections.

Adjustments and Assumptions

Henry's lime and fertilizer bill in the year of the farm business summary was \$3,000 more than the actual lime and fertilizer used in that year because he purchased \$3,000 worth of fertilizer in the fall to be used the following

year, a practice he does not usually follow. He has adjusted the base year lime and fertilizer expense (line 44) to \$7,882 to represent one year's lime and fertilizer expense.

Last year's milk sales is the net amount after deducting a milk assessment of \$5,091. The assessment was not paid for a full year. A \$.50¢ per cwt. assessment for a full year would have been \$5,933. Henry has adjusted the milk sales from the farm business summary by subtracting $\$5933 - 5,091 = \842 and entered \$154,365 as base year milk sales. He expects that the 50¢ assessment will be replaced by a 50¢ drop in support price and therefore \$154,365 is a reasonable base year level of milk sales. Henry believes that the 50¢ drop in the support price should be enough to get rid of the milk surplus. However, another 50¢ drop may be required. Analysis 2 considers this situation.

Henry plans to add a full-time employee when he makes the initial investment. He expects to pay about \$14,000 per year resulting in a total labor expense of about \$28,900. Since the employee will be added at the time of the investment, he has used line 85 to change assumption 11 to 1.0.

Henry has computed the feed value of an acre of corn at 85 bu. per acre x \$3.00 = \$255. He has entered this value using assumption code 12 on line 86. The feed value of an acre of hay on his farm is 2.8 tons x \$75 per ton = \$210. This is entered on line 87 using assumption code 13.

Henry expects that there will be continued inflation in the future. Like the rest of us, he doesn't know for sure what the inflation rate will be. His best estimate is that the inflation rate will average 7.0 percent on all investment items and on receipts and expenses. Lines 88 and 89 have been used to enter this inflation rate using assumption codes 54 and 29.

Financial Feasibility

Henry is currently able to borrow money at 12% for 30 years for real estate purposes and at 14%, 7 years for non-real estate purposes.

Henry has a 20 year mortgage which was obtained six years ago with an original principal of \$95,000. The interest rate is 8 percent. This loan may be refinanced. He also has a \$62,000, 7 year intermediate term loan with a 13 percent interest rate obtained two years ago. This loan may be refinanced.

Adjusted Analyses

Analysis 2

Henry believes there is a good chance that milk prices will be lower relative to input costs in the future because of possible changes in the government price support program. Analysis 2 will use base year milk receipts calculated with a price \$.50 per cwt. below the price used for Analysis 1. He has subtracted $11,865 \text{ cwt} \times \$.50 = \$5,933$ from the Analysis 1 base year milk receipts and used \$148,432 as base year milk receipts in Analysis 2.

Analysis 3

Henry will use Analysis 3 to evaluate the financial feasibility of the investment alone, assuming that the price of milk in the base year is \$.50 per cwt. below the price used in Analysis 1. This analysis does not require the data on current debts outstanding (lines 68-77) nor the data on lines 80-83 and 84 b and c. He changed Assumption 125 to 1.0 (line 90) which automatically deletes the data in lines 68-77 and 80-84. Also, he does not expect the added investment to affect his living expenses so he has made no entry in 84a.

Henry Holstein
Farm Business Summary

<u>CAPITAL INVESTMENT</u>			<u>RECEIPTS</u>		
	<u>Beginning</u>	<u>End</u>			
Livestock	\$119,800	\$121,600	Milk sales	\$155,207*	
Feed & supplies	30,600	32,800	Crop sales	1,500	
Machinery & equipment	77,500	83,400	Dairy cattle sold	12,735	
Land & buildings	214,000	220,000	Livestock sales	2,310	
TOTAL INVESTMENT	\$441,900	\$457,800	Gas tax refund	168	
			Government payments	456	
			Custom machine work	215	
			Miscellaneous	1,560	
<u>EXPENSES</u>			TOTAL CASH RECEIPTS	\$174,151	
<u>Labor</u>			Increase in livestock	1,800	
Hired	\$ 14,938		Increase in feed & supplies	5,200	
<u>Feed</u>			TOTAL FARM RECEIPTS		
Dairy concentrate	38,357		EXCLUDING APPRECIATION	\$181,151	
Hay & other	0		Livestock appreciation	0	
<u>Machinery</u>			Machinery appreciation	1,500	
Machine hire	1,200		Real estate appreciation	4,000	
Machinery repair	7,274		TOTAL FARM RECEIPTS	\$186,651	
Auto expense	380				
Gas & oil	6,110		<u>FINANCIAL SUMMARY</u>		
<u>Livestock</u>			Total cash receipts	\$174,151	
Replacement livestock	1,780		Total cash expenses	129,004	
Breeding fees	1,930		NET CASH INCOME	\$ 45,147	
Veterinary, medicine	2,639				
Milk marketing	4,151		Total farm receipts	\$181,151	
Other livestock expense	5,359		Total farm expenses	145,407	
<u>Crops</u>			NET FARM INCOME	\$ 35,744	
Lime & fertilizer	10,882				
Seeds & plants	2,398		Less: Unpaid labor	2,000	
Spray & other	1,838		Interest on equity @ 5%	15,606	
<u>Real Estate</u>			LABOR AND MANAGEMENT INCOME	\$ 18,138	
Land, building, fence repair	2,789				
Taxes	3,970		<u>CROP RECORD</u>		
Insurance	3,047		acres	yield	Total
Rent	2,075		Hay and hay		
<u>Other</u>			crop silage	135	2.8 t. 378 t.
Telephone (farm share)	663		Corn silage	62	15 t. 930 t.
Electricity (farm share)	2,653		Corn grain	20	85 bu. 1700 bu.
Interest paid	12,504		Oats	29	60 bu. 1740 bu.
Miscellaneous	2,067			246	
TOTAL CASH EXPENSES	\$129,004				
Expansion livestock	0		<u>Herd Information</u>		
Machinery depreciation	11,862		No. of Cows	76	
Building depreciation	4,541		Milk sold per cow	15,612	
Total expenses	\$145,407				

*Net milk sales after subtracting a Federal assessment of \$5,091.

NEWPLAN PROGRAM 50 (Form 4)

PROFITABILITY AND FINANCIAL FEASIBILITY OF MAJOR CAPITAL INVESTMENTS

PROGRAM 05004 Phone _____ Date _____

NAME Henry Halstein Address _____
(24 characteristics maximum)

INVESTMENT Daily Hay Expansion _____
(40 characteristics maximum)

LINE ANALYSIS ANALYSIS
 NO. 1 2

Section I.

1. a. Planning period (years) 01. 1.5 | - | - |

Section II. Building Investment Information
 (Up to 3 buildings or categories of buildings may be specified. If no buildings are involved, enter a "0" in line 2 and proceed to line 8.)

2. Item or group A Barn Extension

a. Total cost 02. 0420000005 | - | - | - | - | - |

b. Year of purchase _____
 (0 = beg. of planning period;
 1 = end of 1st year, etc...)

c. Recovery class (5, 10 or 15 years) _____

3. a. Recovery Option Code 03. 110110010 | | | | | | | |

Option Code	Recovery Class			
	3	5	10	15
	-yrs depreciated over-			
1	Rapid ----- Rapid			
2	3	5	10	15
3	5	12	25	35
4	12	25	35	45
9	non depreciable			

b. Recovery option code on replacement _____
 c. Does investment qualify for Federal investment tax credit? (0=no; 1=yes) _____
 d. Does investment qualify for State investment tax credit? (0=no; 1=yes) _____
 e. Years to replacement _____
 (if not to be replaced, enter 0)¹
 f. Salvage percent (% of total cost)² _____

¹Model will replace the item or group the number of times required to complete the planning period.
²Ignore inflation when estimating the salvage percent. The percent entered should be based on the value at time of trade-in if replaced, or the value at end of planning period if not replaced. If values are being inflated, the inflated value will be calculated by the computer.

	LINE NO.	ANALYSIS 1	ANALYSIS 2
4. Item or group B <u>S/LA</u> (if none is to be considered, enter "0" on line 4 and proceed to line 8).			
a. Total cost	04.	<u>035000005</u>	_ _ _ _ _ _ _
b. Year of purchase _____ (0 = beg. of planning period; 1 = end of 1st year, etc...)			
c. Recovery class (5, 10 or 15 years) _____			
5. a. Recovery option code (see 3a for codes)	05.	<u>10110010</u>	_ _ _ _ _ _ _
b. Recovery option code, replacement _____			
c. Federal ITC (0=no; 1=yes) _____			
d. State ITC (0=no; 1=yes) _____			
e. Years to replacement _____ (if not to be replaced enter 0). ¹			
f. Salvage percent ² _____			
6. Item or group C _____ (if none is to be considered, enter "0" on line 6 and proceed to line 8).			
a. Total cost	06.	<u>0</u> _____	_ _ _ _ _ _ _
b. Year of purchase _____ (0 = beg. of planning period; 1 = end of 1st year, etc...)			
c. Recovery class (5, 10 or 15 years) _____			
7. a. Recovery option code (see 3a for codes)	07.	_ _ _ _ _ _ _	_ _ _ _ _ _ _
b. Recovery option code, replacement _____			
c. Federal ITC (0=no; 1=yes) _____			
d. State ITC (0=no; 1=yes) _____			
e. Years to replacement _____ (if not to be replaced enter 0). ¹			
f. Salvage percent ² _____			

¹Model will replace the item or group the number of times required to complete the planning period.

²Ignore inflation when estimating the salvage percent. The percent entered should be based on the value at time of trade in if replaced, or the value at end of planning period if not replaced. If values are being inflated, the inflated value will be calculated by the computer.

LINE NO.	ANALYSIS <u>1</u>	ANALYSIS <u>2</u>
-------------	----------------------	----------------------

Section III. Equipment Investment Information

(Up to 3 items or categories of equipment may be specified. If no equipment is involved, enter a "0" on line 8 and proceed to line 14).

8. Item or group A Parlor equip. and bulk tank

a. Total dollar cost 08. 015000/05 |-----|

b. Year of purchase _____
(0 = beg. of planning period;
1 = end of 1st year, etc...)

c. Recovery class (3 or 5 years) _____

9. a. Recovery option code 09. 11111010 |---|

b. Recovery option code, replacement

c. Federal ITC (0=no; 1=yes) _____

d. State ITC (0=no; 1=yes) _____

e. Years to replacement _____
(if not to be replaced enter 0).¹

f. Salvage percent² _____

10. Item or group B Tractor
(if none is to be considered, enter "0" on line 10 and proceed to line 14).

a. Total dollar cost 10. 031000/05 |-----|

b. Year of purchase _____
(0 = beg. of planning period;
1 = end of 1st year, etc...)

c. Recovery class (3 or 5 years) _____

11. a. Recovery option code 11. 11111010 |---|

b. Recovery option code, replacement

c. Federal ITC (0=no; 1=yes) _____

d. State ITC (0=no; 1=yes) _____

e. Years to replacement _____
(if not to be replaced enter 0).¹

f. Salvage percent² _____

¹Model will replace the item or group the number of times required to complete the planning period.

²Ignore inflation when estimating the salvage percent. The percent entered should be based on the value at time of trade in if replaced, or the value at end of planning period if not replaced. If values are being inflated, the inflated value will be calculated by the computer.

	LINE NO.	ANALYSIS 1	ANALYSIS 2
12. Item or group C <i>Forage harvest and silo unloader</i> (if none is to be considered, enter a "0" on line 12 and proceed to line 14)			
a. Total dollar cost	12.	<u>016000005</u>	_ _ _ _ _ _ _
b. Year of purchase _____ (0 = beg. of planning period; 1 = end of 1st year, etc...)			
c. Recovery class (3 or 5 years) _____			
13. a. Recovery option code (see 3a for codes)	13.	<u>111108105</u>	_ _ _ _ _ _ _
b. Recovery option code, replacement			
c. Federal ITC (0=no; 1=yes) _____			
d. State ITC (0=no; 1=yes) _____			
e. Years to replacement _____ (if not to be replaced enter 0) ¹			
f. Salvage percent ² _____			

Section IV A. Livestock Investment Information³

(If no livestock, tree or vine investments are involved, enter "0" on line 14 & line 15 and proceed to line 21. If tree & vine investments are included, skip to section IV. B.)

14. a. Number of cows before	14.	<u>076085095</u>	_ _ _ _ _ _ _
b. Average number of cows _____ in year 1			
c. Average number of cows _____ in year 2			
15. a. Average number of cows	15.	<u>105115125</u>	_ _ _ _ _ _ _
in year 3			
b. Average number of cows _____ in year 4			
c. Average number of cows _____ in year 5			

¹Model will replace the item or group the number of times required to complete the planning period.

²Ignore inflation when estimating the salvage percent. The percent entered should be based on the value at time of trade in if replaced, or the value at end of planning period if not replaced. If values are being inflated, the inflated value will be calculated by the computer.

³This section cannot be used if entries are made in section IV. B Tree and Vine Information.

	LINE NO.	ANALYSIS 1	ANALYSIS 2
16. a.	Number of cows purchased in year 0. ¹	16. 005005005	- - -
b.	Number of cows purchased in year 1		
c.	Number of cows purchased in year 2		
17. a.	Number of cows purchased in year 3	17. 005005450	- - -
b.	Number of cows purchased in year 4		
c.	Cull value per head ²		
18. a.	Purchase price per head ²	18. 095025000	- - -
b.	Culling rate (Percent)		
c.	Percent to be replaced with purchased animals		
19. a.	Recovery class (3 or 5 years)	19. 0511111111	
b.	Recovery option code, year 0 (see 3a for codes)	0	
		1	
		2	
		3	
		4	
c.	Federal ITC (0 = no; 1 = yes)		
d.	State ITC (0 = no; 1 = yes)		
20. a.	Value per cow at end of planning period (\$100) ²	20. 09.5425020	- . - -
b.	Average value per heifer at end of planning period. ²		
c.	Increase in number of heifers by end of planning period		

Skip tree and vine input and go to Line 21

¹Animals to be purchased early in any business year should be included with the preceding investment year purchases. Include only animals purchased to increase the herd size. Do not include animals purchased as replacements.

²Enter value in year 0 dollars. If values are being inflated, an actual dollar value will be calculated by inflating the value entered.

	LINE NO.	ANALYSIS 1	ANALYSIS 2
Section IV B. Tree and Vine Information¹			
14. Are development costs expensed (=1) or capitalized (=0):	14.	9 9 9 0 0	9 9 9 0 0
a. For variety or planting A _____			
b. For variety or planting B _____			
Income tax recovery option used (see line 3a) ²			
c. For variety or planting A _____			
d. For variety or planting B _____			

Variety or Planting A

15. a. Acres to be established: yr. 0	15.		
b. year 1			
c. year 2			
d. year 3			
16. a. Land value per acre (\$100) (if land is not part of investment)	16.		
b. Establishment cost per acre (\$100)			
c. Development cost ³ per acre: (\$100) 1st year ⁴			
d. 2nd year			
17. a. 3rd year	17.		
b. 4th year			
c. 5th year			
d. Terminal value of trees and vines per acre (\$100) ⁵			

¹This section cannot be used if livestock information is entered in Section IV A. Livestock Investment Information.

²Trees and vines are automatically treated as 5 year property (recovery class).

³Capitalization takes place as of the last year for which development costs are entered. All development costs occurring after that date should be included in operating costs.

⁴Year of development costs refer to the number of years after establishment for each planting.

⁵Terminal value of trees and vines at year 0 prices.

		LINE NO.	ANALYSIS 1	ANALYSIS 2
Variety or Planting B				
18.	a.	Acres to be established year 0	18.	
	b.	year 1		
	c.	year 2		
	d.	year 3		
19.	a.	Land value per acre (\$100)	19.	
	b.	Establishment cost per acre		
	c.	Development cost ¹ per acre (\$100)		
		1st year ²		
	d.	2nd year		
20.	a.	3rd year	20.	
	b.	4th year		
	c.	5th year		
	d.	Terminal value of trees and vines per acre (\$100) ³		

Section V. Land Investment Information⁴

(Enter all depreciable real estate under Section II or IV B. If no land purchase is involved, enter "0" on line 21 and proceed to line 27).

21.	Item or group A		
	a.	Year of purchase	21. 00 04 00 00
	b.	Cost	
22.	Terminal value at end of planning period ⁵	22.	050000

¹Capitalization takes place as of the last year with positive development costs. All development costs occurring after that date should be included in operating costs.
²Year of development costs refer to the years after establishment for each planting.
³Terminal value of trees and vines at year 0 prices.
⁴Include value of bare land purchased for tree and vine investment listed in Section IV B.
⁵Enter value in year 0 dollars. If values are being inflated, an actual dollar value will be calculated by inflating the value entered.

	LINE NO.	ANALYSIS 1	ANALYSIS 2
23. Item or group B _____			
a. Year of purchase	23.	0	
b. Cost _____			
24. Terminal value at end of planning period ¹	24.		
25. Item or group C _____			
a. Year of purchase	25.		
b. Cost _____			
26. Terminal value at end of planning period ¹	26.		

Section VI. Income Tax and Cost of Capital Information

27. a. Cost of Capital (%)	27.	15 25 3 1	
b. Federal income tax bracket assuming the proposed investment is not made _____			
c. State code (New York = 31) _____			
d. Number of tax families _____			

Section VII. Projected Increase in Cash Flow

(If cash flow is to be estimated by the program, enter "0" on line 28 and proceed to line 38). Enter increase in cash flow before income taxes. (Projected increase in cash receipts minus increase in cash expenses.)²

28. a. Amount	28.	0	
b. Years ³ _____			
29. a. Amount	29.		
b. Years _____			
30. a. Amount	30.		
b. Years _____			
31. a. Amount	31.		
b. Years _____			
32. a. Amount	32.		
b. Years _____			

¹Enter value in year 0 dollars. If values are being inflated, an actual dollar value will be calculated by inflating the value entered.

²Do not include increased sales of calves and cull cows nor added purchased replacements.

³Total of years in 28 thru 37 must equal planning period in line 1.

	LINE NO.	ANALYSIS 1	ANALYSIS 2
33. a. Amount	33.	-----	-----
b. Years ¹		-----	
34. a. Amount	34.	-----	-----
b. Years		-----	
35. a. Amount	35.	-----	-----
b. Years		-----	
36. a. Amount	36.	-----	-----
b. Years		-----	
37. a. Amount	37.	-----	-----
b. Years		-----	

Section VIII. Budget Projection Data

(If cash flows are entered on lines 28 through 37, go to line 64).

CASH INCOME AND EXPENSE DATA FOR BASE YEAR²

38. Labor	38.	014938	-----
39. Feed	39.	038357	-----

Machinery

40. a. Machine hire	40.	120007274	-----
b. Machine repairs		-----	
41. a. Auto Expense (farm share)	41.	038006110	-----
b. Gas and oil		-----	

Livestock

42. a. Purchased replacements ³	42.	017801939	-----
b. Breeding fees		-----	

¹Total of years in 28 thru 37 must equal planning period in line 1.

²Adjust base year record where more or less than one year's expense is included, i.e., if the feed bill was paid off, include only those feed costs incurred during the year. The data entered for the base year should reflect the results of future operation of the business if the investment were not made.

³Include only replacements for the presently owned herd. Exclude animals purchased to increase herd size.

	LINE NO.	ANALYSIS 1	ANALYSIS 2
43. a. Veterinary & Medicine	43.	263909510	
b. Other livestock expense			

Crops

44. Lime and Fertilizer	44.	007882	
45. a. Seeds and plants	45.	239801838	
b. Spray, other crop expense			

Real Estate

46. a. Land, buildings & fence repair	46.	278903970	
b. Taxes			
47. a. Insurance	47.	304702075	
b. Rent			
48. a. Telephone & electricity	48.	331602067	
b. Miscellaneous			

Total Expenses 113,500

Income

49. Milk Sales	49.	0154365	0148132
50. Livestock Sales	50.	015085	
51. a. Crop Sales (\$100)	51.	00152399	
b. Miscellaneous			

Total Income 173309

Total Expenses 113500

Net Cash Flow 59809

OTHER INFORMATION

52. a. Hired Labor costs in 5th yr.	52.	028900	
53. a. Acres of corn - base year	53.	082136161	
b. Acres of corn - Year 1			
c. Acres of corn - Year 2			

LINE ANALYSIS
NO. 1

ANALYSIS
2

Section IX Financial Feasibility

(If financial feasibility will not be considered, enter 0 in line 64 and proceed to line 85)

Credit Terms Available

(List the credit terms that will be used for refinancing existing debt and financing capital purchases connected with this investment. If a variable rate is being charged, list the initial effective rate).

- 64. Credit Terms I, Lender _____ 64. 30/12.00/0 | | | | | | | |
 - (real estate , nonreal)
 - a. Years to repay _____
 - b. Interest rate _____
 - c. Even principal and interest (=0) or even principal (=1) _____
 - d. Number of payments per year (for monthly, enter 0) _____

- 65. Credit Terms II, Lender _____ 65. 07/14.00/0 | | | | | | | |
 - (real estate , nonreal)
 - a. Years to repay _____
 - b. Interest rate _____
 - c. Even principal and interest (=0) or even principal (=1) _____
 - d. Number of payments per year (for monthly, enter 0) _____

- 66. Credit Terms III, Lender _____ 66. 0 | | | | | | | |
 - (real estate , nonreal)
 - a. Years to repay _____
 - b. Interest rate _____
 - c. Even principal and interest (=0) or even principal (=1) _____
 - d. Number of payments per year (for monthly, enter 0) _____

- 67. Credit Terms IV, Lender _____ 67. | | | | | | | |
 - (real estate , nonreal)
 - a. Years to repay _____
 - b. Interest rate _____
 - c. Even principal and interest (=0) or even principal (=1) _____
 - d. Number of payments per year (for monthly, enter 0) _____

LINE NO.	ANALYSIS 1	ANALYSIS 2
-------------	---------------	---------------

Current debt outstanding

(Up to 5 loans may be entered. If fewer than 5 exist, enter 0 in the line following the last loan entered and proceed to line 78.) If financial feasibility is to consider the investment only, skip to line 78.

68. Loan A Mortgage 68. | 02957 | 1906.0 | | | | | | | | | |

a. Loan payment(\$¹ or original principal (\$1,000) _____

b. Above amount entered is loan payment (=0) or original principal (=1) _____

c. Number of payments per year (monthly payments =0) _____

d. Years since loan was taken out _____

69. a. Years to pay (original term 69. | 20 | 908.00 | 1 | 1 | | | | | | | | | |
of loan) _____

b. Payments are even principal and interest (=0) or even principal (=1) _____

c. Interest rate _____

d. Will this loan be refinanced (1=yes, 0=no) _____

e. What credit terms will be used when refinancing (from lines 64-67) (1=Credit Terms I, 2=Credit Terms II, 3=Credit Terms III, 4=Credit Terms IV, leave blank if not refinanced) _____

70. Loan B Cattle and equip. 70. | 0062 | 1002.0 | | | | | | | | | |

a. Loan payment(\$¹ or original principal (\$1,000) _____

b. Above amount entered is loan payment (=0) or original principal (=1) _____

c. Number of payments per year (monthly payments = 0) _____

d. Year since loan was taken out _____

71. a. Years to pay (original 71. | 070 | 13.00 | 1 | 2 | | | | | | | | | |
term of loan) _____

b. Payments are even principal and interest (=0) or even principal (=1) _____

c. Interest rate _____

d. Will this loan be refinanced (1=yes, 0=no) _____

e. What credit terms will be used when refinancing (from lines 64-67) (1=Credit Terms I, 2=Credit Terms II, 3=Credit Terms III, 4=Credit Terms IV, leave blank if not refinanced) _____

¹Enter total principal plus interest payment if even payment loan. Enter principal only if even principal loan. If loan payment is \$10,000 or greater, original principal must be entered.

	LINE NO.	ANALYSIS 1	ANALYSIS 2
72. Loan C _____	72.	0	
a. Loan payment(\$) ¹ or original principal (\$1,000) _____			
b. Above amount entered is loan payment (=0) or original principal (=1) _____			
c. Number of payments per year (monthly payments = 0) _____			
d. Years since loan was taken out _____			
73. a. Years to pay (original term of loan) _____	73.		
b. Payments are even principal and interest (=0) or even principal (=1) _____			
c. Interest rate _____			
d. With this loan be refinanced (1=yes, 0=no) _____			
e. What credit terms will be used when refinancing (from lines 64-67) (1=Credit Terms I, 2=Credit Terms II, 3=Credit Terms III, 4=Credit Terms IV, leave blank if not refinanced) _____			
74. Loan D _____	74.		
a. Loan payments(\$) ¹ or original principal (\$1,000) _____			
b. Above amount entered is loan payment (=0) or original principal (=1) _____			
c. Number of payments per year (monthly payments = 0) _____			
d. Years since loan was taken out _____			
75. a. Years to pay (original term of loan) _____	75.		
b. Payments are even principal and interest (=0) or even principal (=1) _____			
c. Interest rate _____			
d. Will this loan be refinanced (1=yes, 0=no) _____			
e. What credit terms will be used when refinancing (from lines 64-67) (1=Credit Terms I, 2= Credit Terms II, 3=Credit Terms III, 4=Credit Terms IV, leave blank if not refinanced) _____			

¹Enter total principal plus interest payment if even payment loan. Enter principal only if even principal loan. If loan payment is \$10,000 or greater, original principal must be entered.

	LINE NO.	ANALYSIS 1	ANALYSIS 2
76. Loan E _____	76.	_ _ _ _	_ _ _ _
a. Loan payment(\$) ¹ or original principal (\$1,000) _____		_ _ _ _	_ _ _ _
b. Above amount entered is loan payment (=0) or original principal (=1) _____		_ _ _ _	_ _ _ _
c. Number of payments per year (monthly payments = 0) _____		_ _ _ _	_ _ _ _
d. Years since loan was taken out _____		_ _ _ _	_ _ _ _
77. a. Years to pay (original term 77. of loan _____)		_ _ _ _	_ _ _ _
b. Payments are even principal and interest (=0) or even principal (=1) _____		_ _ _ _	_ _ _ _
c. Interest rate _____		_ _ _ _	_ _ _ _
d. Will this loan be refinanced (1=yes, 0=no) _____		_ _ _ _	_ _ _ _
e. What credit terms will be used when refinancing (from lines 64-67) (1=Credit Terms I, 2=Credit Terms II, 3=Credit Terms III, 4=Credit Terms IV, leave blank if not refinanced _____)		_ _ _ _	_ _ _ _
78. In what years will refinancing occur? (If no entry is made in this line, refinancing will occur only in year 0). (0 = no refinancing, 1 = refinancing)			
	78.	0 1 2 3 4 5 1 0 0 0 0 0 0	0 1 2 3 4 5 _ _ _ _ _
a. Year 0 _____		_ _ _ _	_ _ _ _
b. Year 1 _____		_ _ _ _	_ _ _ _
c. Year 2 _____		_ _ _ _	_ _ _ _
d. Year 3 _____		_ _ _ _	_ _ _ _
e. Year 4 _____		_ _ _ _	_ _ _ _
f. Year 5 _____		_ _ _ _	_ _ _ _
g. Year of refinancing debt incurred to replace existing machinery inventory (0 = not refinanced, 99 = every year) _____		_ _ _ _	_ _ _ _

¹Enter total principal plus interest payment if even payment loan. Enter principal only if even principal loan. If loan payment is \$10,000 or greater, original principal must be entered.

	LINE NO.	ANALYSIS 1					ANALYSIS 2				
		a	b	c	d	e	a	b	c	d	e
79. Credit terms used for new investment (from lines 64-67) (1= Credit terms I, 2=Credit Terms II, 3=Credit Terms III and 4=Credit Terms IV, 5=Financed from equity).											
a. Buildings	79.	1	1	2	2	1					
(i) Group A _____											
(ii) Group B _____											
(iii) Group C _____											
b. Equipment _____											
c. Livestock or trees and vines _____											
d. Land (i) Group A _____											
(ii) Group B _____											
(iii) Group C _____											
e. Replacement of existing equipment (do not use 5) _____											
If financial feasibility is to consider the investment only, skip lines 80-83, 84b and 84c.											
80. a. Average annual amount that will be spent on replacement machinery in future years if the investment is not made (\$1,000) ¹	80.		00	12	00	15					
b. Annual depreciation if the investment is not made (\$1,000) _____											
81. If budget generator is not used:	81.	0									
a. Expected annual net cash flow if the investment is not made (\$1,000) (Calculated as total cash farm income minus total cash expenses excluding interest costs) ¹											
b. Annual amount of income that qualifies for capital gains treatment if investment is not made (\$1,000) _____											
82. Investment credit carryover (\$1,000)	82.	00	000	003	2						
a. Federal _____											
b. State _____											
c. Federal taxes paid during last three years that have not been offset by investment tax credit (\$1,000) _____											
83. Expected annual investment credit without expansion (\$1,000) ¹	83.	0	2	00	7						
a. Federal _____											
b. State _____											
84. a. Estimated annual cash living expenses excluding taxes (\$1,000) ¹	84.	14	000	005							
b. Expected annual nonfarm income (\$1,000) ¹ _____											
c. Number of tax exemptions (average per tax family) _____											

¹Enter value in year 0 dollars. If values are being inflated, an actual dollar value will be calculated by inflating the value entered.

LINE NO.	ANALYSIS <u>1</u>	ANALYSIS <u>2</u>
-------------	----------------------	----------------------

Section X. Modification of Assumptions¹

(Enter "0" on line following last modification to be made. If none, enter "0" on line 85)

85.	a. Assumption value desired	85.	00001.0011
	b. Assumption code _____			
86.	a. Assumption value desired	86.	00255.0012
	b. Assumption code _____			
87.	a. Assumption value desired	87.	00210.0013
	b. Assumption code _____			
88.	a. Assumption value desired	88.	00007.0054
	b. Assumption code _____			
89.	a. Assumption value desired	89.	00007.0029
	b. Assumption code _____			<i>Analysis 3</i>
90.	a. Assumption value desired	90.	0	00001.0125
	b. Assumption code _____			
91.	a. Assumption value desired	91.
	b. Assumption code _____			
92.	a. Assumption value desired	92.
	b. Assumption code _____			
93.	a. Assumption value desired	93.
	b. Assumption code _____			
94.	a. Assumption value desired	94.
	b. Assumption code _____			
95.	a. Assumption value desired	95.
	b. Assumption code _____			
96.	a. Assumption value desired	96.
	b. Assumption code _____			

¹See user's manual (Table 1) for assumptions and how to use this section.

	<u>LINE NO.</u>	<u>ANALYSIS 1</u>	<u>ANALYSIS 2</u>
97. a. Assumption value desired	97.	.	.
b. Assumption code	_____		
98. a. Assumption value desired	98.	.	.
b. Assumption code	_____		
99.1/ a. Assumption value desired	99.	.	.
b. Assumption code	_____		

Use line 99 to specify line changes for adjusted analyses:

Input line numbers changed for Analysis 2 99. | 49 | | | | | | | | | |

1/ Computer systems that use line 99 to indicate lines to be changed for adjusted analyses cannot use this line for modifications of assumptions.

Analysis 3 99/90

NEWPLAN PROGRAM 50
MAJOR CAPITAL INVESTMENT MODEL
USING FORM 4 OF PROGRAM 50
INVESTMENT ANALYZED FOR HENRY HOLSTEIN
INVESTMENT IS DAIRY HERD EXPANSION
THIS IS ANALYSIS 1

*** INPUT DATA ***

LINE# VALUES:

1	15								
BUILDING INVESTMENT INFORMATION									
2	42000.	0.	5.						
3	1.	0.	1.	1.	0.	10.			
4	35000.	0.	5.						
5	1.	0.	1.	1.	0.	10.			
EQUIPMENT INVESTMENT INFORMATION									
8	15000.	1.	5.						
9	1.	1.	1.	1.	10.	10.			
10	31000.	0.	5.						
11	1.	1.	1.	1.	10.	10.			
12	16000.	0.	5.						
13	1.	1.	1.	1.	8.	5.			
LIVESTOCK INVESTMENT INFORMATION									
14	76.	85.	95.						
15	105.	115.	125.						
16	5.	5.	5.						
17	5.	5.	450.						
18	950.	25.	0.						
19	5.	1.	1.	1.	1.	1.	1.	1.	1.
20	9.5	475.	20.						
LAND INVESTMENT INFORMATION									
21	0.	40000.							
22	50000.								
INCOME TAX AND COST OF CAPITAL INFORMATION									
27	15.	25.	31.	1.					
CASH INCOME AND EXPENSE DATA FOR BASE YEAR									
38	14938.								
39	38357.								
40	1200.	7274.							
41	380.	6110.							
42	1780.	1930.							
43	2639.	9510.							
44	7882.								
45	2398.	1838.							

46	2789.	3970.
47	3047.	2075.
48	3316.	2067.
49	154365.	
50	15045.	
51	15.	2399.

OTHER INFORMATION

52	28900.		
53	82.	136.	161.
54	161.	161.	161.
55	135.	135.	135.
56	135.	135.	135.
57	29.	25.	0.
58	0.	0.	0.
59	0.	0.	0.
60	0.	0.	0.
61		0.	220.
62	15612.		76.
63	0.	0.	0.

FINANCIAL FEASIBILITY INFORMATION

64	30.	12.0	0.	0.					
65	7.	14.0	0.	0.					
68	95.	1.	0.	6.0					
69	20.	0.	8.00	1.	1.				
70	62.	1.	0.	2.0					
71	7.	0.	13.00	1.	2.				
78	1.	0.	0.	0.	0.	0.	0.	0.	
79	1.	1.	0.	2.	2.	1.	0.	0.	2.
80	12.		15.						
81	0.0		0.0						
82	0.0	0.0		3.2					
83	1.2	0.7							
84	14.0	0.0		5.0					

MODIFICATION OF ASSUMPTIONS

85	1.0	11.
86	255.0	12.
87	210.0	13.
88	7.0	54.
89	7.0	29.

*** END OF INPUT DATA ***

*** INVESTMENT ANALYSIS ***

1. NET PRESENT VALUE OF INVESTMENT (\$) IS: 5418.

2. PERCENT AFTER TAX COST OF CAPITAL IS: 11.2

3. CASH FLOW:

YEAR	BEFORE TAX CASH FLOW	DEPRE- CIATION	TAXABLE INCOME	TAX	AFTER TAX CASH FLOW	PRESENT VALUE
1	-6130.	18320.	-25689.	-4024.	-2106.	-1894.
2	4504.	29631.	-27970.	-4024.	8528.	6897.
3	13115.	30099.	-20953.	-4024.	17139.	12465.
4	23497.	30408.	-12265.	-2954.	26451.	17299.
5	35268.	30786.	-2308.	-658.	35927.	21130.
6	37737.	5325.	26223.	9988.	27750.	14677.
7	40379.	1225.	33199.	13129.	27250.	12961.
8	43979.	673.	37722.	15240.	28738.	12292.
9	43748.	4069.	35211.	14068.	29680.	11416.
10	50351.	5458.	38566.	15634.	34717.	12009.
11	51981.	13031.	32699.	12895.	39086.	12158.
12	57647.	20730.	29012.	11174.	46473.	13000.
13	58429.	22098.	29173.	11250.	47179.	11868.
14	63679.	16618.	38707.	15700.	47979.	10854.
15	66895.	0.	58701.	25490.	41405.	8423.
TOTAL						175555.

4. INVESTMENTS (OUTLAY):

YEAR	BUILDINGS	EQUIPMENT	CATTLE		LAND	TOTAL	PRESENT VALUE
			PURCHASED	RAISED			
0	77000.	47000.	5510.	3420.	40000.	172930.	172930.
1	0.	16050.	6302.	4574.	0.	26927.	24215.
2	0.	0.	6308.	4894.	0.	11203.	9060.
3	0.	0.	7215.	5237.	0.	12453.	9056.
4	0.	0.	7222.	5604.	0.	12826.	8388.
8	0.	26116.	0.	0.	0.	26116.	11171.
10	0.	54883.	0.	0.	0.	54883.	18984.
11	0.	28415.	0.	0.	0.	28415.	8839.
TOTAL							262642.

TERMINAL VALUE:

BEFORE TAX	21244.	63419.	154642.	137950.	377256.	76748.
AFTER TAX	14149.	50054.	133982.	124864.	323049.	65720.

5. INVESTMENT TAX CREDIT:

YEAR	CREDIT	RECAPTURE	NET
1	20722.	152.	20570.
2	3576.	333.	3243.
3	1009.	447.	562.
4	1154.	539.	615.
5	1156.	603.	552.
6	0.	404.	-404.
7	0.	224.	-224.
8	0.	80.	-80.
9	4179.	0.	4179.
11	8781.	0.	8781.
12	4546.	0.	4546.
15	0.	3575.	-3575.

PRESENT VALUE OF NET INVESTMENT TAX CREDIT IS: 26785.

6. BUDGET:

ITEM	YEAR				
	1	2	3	4	5
LABOR	30923.	33088.	35404.	37882.	40534.
FEED	38501.	50829.	66618.	86734.	109341.
MACHINE HIRE	1862.	1993.	2132.	2281.	2441.
MACHINE REPAIRS	9365.	10307.	11335.	12456.	13678.
AUTO EXPENSE	455.	544.	643.	754.	877.
GAS & OIL	7866.	8658.	9521.	10463.	11489.
PURCHASED REPLACEMENTS	1905.	2038.	2181.	2333.	2497.
BREEDING FEES	2310.	2762.	3267.	3828.	4452.
VET & MEDICINE	3158.	3777.	4466.	5234.	6088.
OTHER LIVESTOCK	11381.	13610.	16096.	18862.	21938.
LIME & FERT	11801.	13493.	14437.	15448.	16529.
SEEDS & PLANTS	3285.	3515.	3761.	4024.	4305.
SPRAY & OTHER CROP	2632.	3068.	3282.	3512.	3758.
LAND, BUILD, REPAIRS	4101.	4388.	4696.	5024.	5376.
TAXES	5838.	6247.	6684.	7152.	7652.
INSURANCE	4645.	5089.	5572.	6099.	6671.
RENT	2220.	2376.	2542.	2720.	2910.
TELEPHONE & ELECTRICITY	3968.	4746.	5612.	6577.	7649.
MISC. EXPENSES	2712.	3163.	3677.	4292.	4975.
TOTAL EXPENSES	148927.	173687.	201925.	235675.	273160.
MILK SALES	184730.	220915.	261261.	306173.	356093.
LIVESTOCK SALES	17269.	20271.	23057.	26724.	30791.
CROP SALES - FEED	1931.	2066.	0.	0.	0.
CROP SALES - NON-FEED	0.	0.	0.	0.	0.
MISC. INCOME	2862.	3414.	3991.	4673.	5431.
TOTAL INCOME	206793.	246667.	288309.	337570.	392314.
NET INCOME	57866.	72980.	86384.	101895.	119154.
INCREASE IN CASH FLOW	-6130.	4504.	13115.	23497.	35268.
NUMBER OF COWS	85.	95.	105.	115.	125.
PRODUCTION PER COW (LBS)	15612.	15612.	15612.	15612.	15612.

7. FINANCIAL FEASIBILITY ANALYSIS: COMPLETE FARM BUSINESS.

ITEM	YEAR				
	1	2	3	4	5
BEFORE-TAX CASH FLOW	57866.	72980.	86384.	101895.	119154.
TAXES PAID	-3162.	83.	584.	2917.	4965.
AFTER-TAX CASH FLOW	61028.	72897.	85800.	98978.	114189.
LIVING EXPENSES	14980.	16029.	17151.	18351.	19636.
CASH AVAILABLE FOR DEBT	46048.	56868.	68649.	80627.	94554.
DEBT PAYMENTS: SCHEDULED	47292.	52319.	53738.	55360.	56985.
INCL. MACH. REPLACEMENT	47292.	55206.	59714.	64643.	69804.
EXCESS OR DEFICIT	-1244.	1662.	8935.	15984.	24749.

DEBT SUMMARY (SCHEDULED):	YEAR					
	0	1	2	3	4	5
OUTSTANDING DEBT:						
INTERMEDIATE	102081.	115190.	108851.	100960.	90166.	68805.
LONG TERM LOANS	197157.	196441.	195635.	194726.	193702.	192549.
MACHINERY REP.		12839.	25414.	37534.	48967.	59435.
TOTAL	299237.	324470.	329900.	333220.	332835.	320788.
DEBT PAYMENTS:						
INTERMEDIATE		22956.	27983.	29402.	31024.	32649.
LONG TERM LOANS		24336.	24336.	24336.	24336.	24336.
MACHINERY REP.		0.	2887.	5977.	9283.	12820.

* * * *

FINANCING FROM EQUITY	0.	0.	0.	0.	0.	0.
-----------------------	----	----	----	----	----	----

*** END OF ANALYSIS 1 ***

*** THIS IS ANALYSIS 2 ***

*** DATA CHANGES ***

LINE # VALUES:

49 148432.

*** END OF CHANGES ***

*** INVESTMENT ANALYSIS ***

1. NET PRESENT VALUE OF INVESTMENT (\$) IS: -23259.

2. PERCENT AFTER TAX COST OF CAPITAL IS: 11.6

3. CASH FLOW:

YEAR	BEFORE TAX CASH FLOW	DEPRE- CIATION	TAXABLE INCOME	TAX	AFTER TAX CASH FLOW	PRESENT VALUE
1	-6882.	18320.	-26441.	-4024.	-2858.	-2561.
2	2805.	29631.	-29669.	-4024.	6830.	5484.
3	10339.	30099.	-23729.	-4024.	14363.	10334.
4	19503.	30408.	-16259.	-3643.	23146.	14922.
5	29900.	30786.	-7677.	-1997.	31897.	18426.
6	31993.	5325.	20478.	7553.	24440.	12651.
7	34232.	1225.	27052.	10339.	23893.	11082.
8	37402.	673.	31145.	12170.	25231.	10487.
9	36710.	4069.	28174.	10814.	25896.	9644.
10	42821.	5458.	31036.	12119.	30702.	10245.
11	43924.	13031.	24642.	9317.	34607.	10348.
12	49026.	20730.	20390.	7516.	41510.	11122.
13	49204.	22098.	19949.	7328.	41875.	10054.
14	53809.	16618.	28836.	11095.	42714.	9189.
15	56334.	0.	48139.	20197.	36137.	6966.
TOTAL						148392.

4. INVESTMENTS (OUTLAY):

YEAR	BUILDINGS	EQUIPMENT	CATTLE		LAND	TOTAL	PRESENT VALUE
			PURCHASED	RAISED			
0	77000.	47000.	5510.	3420.	40000.	172930.	172930.
1	0.	16050.	6302.	4574.	0.	26927.	24128.
2	0.	0.	6308.	4894.	0.	11203.	8995.
3	0.	0.	7215.	5237.	0.	12453.	8959.
4	0.	0.	7222.	5604.	0.	12826.	8269.
8	0.	26116.	0.	0.	0.	26116.	10854.
10	0.	54883.	0.	0.	0.	54883.	18315.
11	0.	28415.	0.	0.	0.	28415.	8497.
TOTAL							260946.

TERMINAL VALUE:

BEFORE TAX	21244.	63419.	154642.	137950.	377256.	72724.
AFTER TAX	14489.	50694.	134972.	125491.	325645.	62775.

5. INVESTMENT TAX CREDIT:

YEAR	CREDIT	RECAPTURE	NET
1	20722.	152.	20570.
2	3576.	333.	3243.
3	1009.	447.	562.
4	1154.	539.	615.
5	1156.	603.	552.
6	0.	404.	-404.
7	0.	224.	-224.
8	0.	80.	-80.
9	4179.	0.	4179.
11	8781.	0.	8781.
12	4546.	0.	4546.
15	0.	3575.	-3575.

PRESENT VALUE OF NET INVESTMENT TAX CREDIT IS: 26520.

6. BUDGET:

ITEM	YEAR				
	1	2	3	4	5
LABOR	30923.	33088.	35404.	37882.	40534.
FEED	38501.	50829.	66618.	86734.	109341.
MACHINE HIRE	1862.	1993.	2132.	2281.	2441.
MACHINE REPAIRS	9365.	10307.	11335.	12456.	13678.
AUTO EXPENSE	455.	544.	643.	754.	877.
GAS & OIL	7866.	8658.	9521.	10463.	11489.
PURCHASED REPLACEMENTS	1905.	2038.	2181.	2333.	2497.
BREEDING FEES	2310.	2762.	3267.	3828.	4452.
VET & MEDICINE	3158.	3777.	4466.	5234.	6088.
OTHER LIVESTOCK	11381.	13610.	16096.	18862.	21938.
LIME & FERT	11801.	13493.	14437.	15448.	16529.
SEEDS & PLANTS	3285.	3515.	3761.	4024.	4305.
SPRAY & OTHER CROP	2632.	3068.	3282.	3512.	3758.
LAND, BUILD, REPAIRS	4101.	4388.	4696.	5024.	5376.
TAXES	5838.	6247.	6684.	7152.	7652.
INSURANCE	4645.	5089.	5572.	6099.	6671.
RENT	2220.	2376.	2542.	2720.	2910.
TELEPHONE & ELECTRICITY	3968.	4746.	5612.	6577.	7649.
MISC. EXPENSES	2712.	3163.	3677.	4292.	4975.
TOTAL EXPENSES	148927.	173687.	201925.	235675.	273160.
MILK SALES	177630.	212425.	251220.	294405.	342406.
LIVESTOCK SALES	17269.	20271.	23057.	26724.	30791.
CROP SALES - FEED	1931.	2066.	0.	0.	0.
CROP SALES - NON-FEED	0.	0.	0.	0.	0.
MISC. INCOME	2862.	3414.	3988.	4670.	5427.
TOTAL INCOME	199693.	238176.	278265.	325799.	378624.
NET INCOME	50766.	64489.	76340.	90124.	105464.
INCREASE IN CASH FLOW	-6882.	2805.	10339.	19503.	29900.
NUMBER OF COWS	85.	95.	105.	115.	125.
PRODUCTION PER COW (LBS)	15612.	15612.	15612.	15612.	15612.

7. FINANCIAL FEASIBILITY ANALYSIS: COMPLETE FARM BUSINESS.

ITEM	YEAR				
	1	2	3	4	5
BEFORE-TAX CASH FLOW	50766.	64489.	76340.	90124.	105464.
TAXES PAID	-3162.	83.	112.	135.	2824.
AFTER-TAX CASH FLOW	53928.	64405.	76228.	89989.	102640.
LIVING EXPENSES	14980.	16029.	17151.	18351.	19636.
CASH AVAILABLE FOR DEBT	38948.	48377.	59077.	71638.	83004.
DEBT PAYMENTS: SCHEDULED	47292.	52319.	53738.	55360.	56985.
INCL. MACH. REPLACEMENT	47292.	55206.	59714.	64643.	69804.
EXCESS OR DEFICIT	-8345.	-6829.	-637.	6995.	13200.

DEBT SUMMARY (SCHEDULED):

	0	YEAR				
		1	2	3	4	5
OUTSTANDING DEBT:						
INTERMEDIATE	102081.	115190.	108851.	100960.	90166.	68805.
LONG TERM LOANS	197157.	196441.	195635.	194726.	193702.	192549.
MACHINERY REP.		12839.	25414.	37534.	48967.	59435.
TOTAL	299237.	324470.	329900.	333220.	332835.	320788.
DEBT PAYMENTS:						
INTERMEDIATE		22956.	27983.	29402.	31024.	32649.
LONG TERM LOANS		24336.	24336.	24336.	24336.	24336.
MACHINERY REP.		0.	2887.	5977.	9283.	12820.

* * * *

FINANCING FROM
EQUITY

0. 0. 0. 0. 0. 0.

*** END OF ANALYSIS 2 ***

*** THIS IS ANALYSIS 3 ***

*** DATA CHANGES ***

LINE # VALUES:

90 1.0 125.

NOTE LINES 68-77 AND 80-84 HAVE BEEN SET TO ZERO.
ANY CHANGES MADE TO THESE LINES BEFORE SETTING ASSUMPTION
125 WERE LOST. (CHANGES MADE AFTER SETTING ASSUMPTION 125
ARE NOT AFFECTED

*** END OF CHANGES ***

*** INVESTMENT ANALYSIS ***

- 1. NET PRESENT VALUE OF INVESTMENT (\$) IS: -23259.
- 2. PERCENT AFTER TAX COST OF CAPITAL IS: 11.6
- 3. CASH FLOW:

YEAR	BEFORE TAX CASH FLOW	DEPRE- CIATION	TAKABLE INCOME	TAX	AFTER TAX CASH FLOW	PRESENT VALUE
1	-6882.	18320.	-26441.	-4024.	-2858.	-2561.
2	2805.	29631.	-29669.	-4024.	6830.	5484.
3	10339.	30099.	-23729.	-4024.	14363.	10334.
4	19503.	30408.	-16259.	-3643.	23146.	14922.
5	29900.	30786.	-7677.	-1997.	31897.	18426.
6	31993.	5325.	20478.	7553.	24440.	12651.
7	34232.	1225.	27052.	10339.	23893.	11082.
8	37402.	673.	31145.	12170.	25231.	10487.
9	36710.	4069.	28174.	10814.	25896.	9644.
10	42821.	5458.	31036.	12119.	30702.	10245.
11	43924.	13031.	24642.	9317.	34607.	10348.
12	49026.	20730.	20390.	7516.	41510.	11122.
13	49204.	22098.	19949.	7328.	41875.	10054.
14	53809.	16618.	28836.	11095.	42714.	9189.
15	56334.	0.	48139.	20197.	36137.	6966.
TOTAL						148392.

NOTE: Sections 4 through 6 of the output are omitted because they are identical to Analysis 2. See pages 78-79.

7. FINANCIAL FEASIBILITY ANALYSIS: INVESTMENT ONLY.

ITEM	YEAR				
	1	2	3	4	5
BEFORE-TAX CASH FLOW	-6882.	2805.	10339.	19503.	29900.
TAXES PAID	-1278.	-1165.	-1093.	-935.	-388.
AFTER-TAX CASH FLOW	-5604.	3970.	11432.	20438.	30288.
LIVING EXPENSES	0.	0.	0.	0.	0.
CASH AVAILABLE FOR DEBT	-5604.	3970.	11432.	20438.	30288.
DEBT PAYMENTS: SCHEDULED	26250.	31277.	32696.	34318.	35943.
INCL. MACH. REPLACEMENT	26250.	31277.	32696.	34318.	35943.
EXCESS OR DEFICIT	-31855.	-27307.	-21263.	-13880.	-5655.

DEBT SUMMARY (SCHEDULED):

	0	YEAR				
		1	2	3	4	5
OUTSTANDING DEBT:						
INTERMEDIATE	52510.	70108.	68928.	66965.	62986.	49457.
LONG TERM LOANS	117000.	116575.	116097.	115557.	114950.	114265.
MACHINERY REP.		0.	0.	0.	0.	0.
TOTAL	169510.	186683.	185024.	182523.	177936.	163722.
DEBT PAYMENTS:						
INTERMEDIATE		11809.	16835.	18254.	19877.	21501.
LONG TERM LOANS		14442.	14442.	14442.	14442.	14442.
MACHINERY REP.		0.	0.	0.	0.	0.

* * * *

FINANCING FROM
EQUITY

0. 0. 0. 0. 0. 0.

*** END OF ANALYSIS 3 ***

*** NO MORE ANALYSES - RUN ENDED ***

EXAMPLE 2: KARL VINEMAN'S PROPOSED VINEYARD DEVELOPMENT

Karl Vineman, the operator of a grape farm, is considering the development of a new 25 acre vineyard. He has the opportunity to purchase 30 acres of land nearby for \$1,200 per acre. The 30 acres will permit a 25 acre vineyard after allowing for roadways, headlands and some land not suitable for grapes. He is interested in both the profitability (net present value) and the financial feasibility of the proposed investment.

Net Present Value

Karl expects the vineyard to last at least 25 years and believes it is unreasonable to expect the vineyard to be a profitable investment if evaluated over a period as short as 15 or 20 years. Therefore, he will use a 25 year planning period.

He has made the following estimates of establishment and development costs per acre for two varieties, Seyval and Reisling.

	<u>Variety A Seyval</u>	<u>Variety B Reisling</u>
Establishment costs	\$ 560	\$1,470
Trellis construction (1 yr. after establishment)	1,170	1,170
Development Costs, 1st year	240	260
Development Costs, 2nd year	270	280
Development Costs, 3rd year	380	400

Five acres of Seyval will be established in year 0 and 10 acres in year 1. Ten acres of Reisling will be established in year 0. Development costs will be expensed in the first analysis.

Karl expects to harvest a small crop in year 4 and a somewhat larger crop in year 5 of each planting. Beginning in year 6 he expects to have a full crop. Projected receipts and expenses per acre, in year 0 dollars are:

Seyval

<u>Year after planting</u>	<u>Receipts</u>	<u>Expenses</u>	<u>Net Cash Flow</u>
4	\$ 600	\$ 550	\$ 50
5	950	750	200
6-25	1,630	1,040	590

For the 10 acres planted in year 1, these cash flows will be delayed one year.

Reisling

<u>Year after planting</u>	<u>Receipts</u>	<u>Expenses</u>	<u>Net Cash Flow</u>
4	\$ 750	\$ 625	\$125
5	1,150	840	310
6-25	2,000	1,240	760

Karl believes he can handle the additional 25 acres of grapes without additional equipment. However, he expects his equipment repair bills to be higher than if he didn't make the investment. The added repair bills have been included in the projected establishment and development costs and annual cash flows.

Karl estimates the terminal value of the trellis to be 10 percent of its initial cost, the terminal value of the vines to be \$500 per acre for Seyval and \$1,000 per acre for Reisling and the terminal value of the land to be the same as the initial investment. All estimates are in year 0 dollars.

Karl has estimated his cost of capital before-tax to be 15 percent. He expects to be in the 28% Federal tax bracket if the investment is not made.

Karl believes that the inflation rate will average about 6 percent per year in the future and wants to evaluate the investment under that assumption. All costs and returns will be inflated at 6 percent per year.

Financial Feasibility

Karl currently has a 30 year mortgage which he obtained four years ago with an original principal of \$92,000 and an interest rate of 11 percent. The mortgage will be refinanced at 12% for 30 years. The land and the cost of the trellis for the new vineyard also will be financed at these terms. He has a 7 year equipment loan obtained two years ago with an initial principal of \$30,000 and an interest rate of 14 percent. He does not plan to refinance this loan. He plans to borrow the money for the establishment costs on a ten year loan at 14 percent interest. The development costs will be paid out of current income if expensed but financed on a 10 year, 14 percent loan if capitalized. Replacement of the existing equipment will be financed at 14 percent interest for 7 years and will not be refinanced. All loans will have one payment per year.

Adjusted Analysis

Development costs will be capitalized rather than expensed. See line 14.

Input Form

A copy of the input form for evaluation of Karl's investment appears on pages 85-96. Pages 3, 4, 5, 10, 11 and 14 of the input form are omitted because they have no nonzero entries. For a copy of the complete input form, see pages 53-70.

NEWPLAN PROGRAM 50 (Form 4)

PROFITABILITY AND FINANCIAL FEASIBILITY OF MAJOR CAPITAL INVESTMENTS

PROGRAM 05004

Phone _____ Date _____

NAME Karl Vineyard
(24 characteristics maximum)

Address _____

INVESTMENT Vineyard Development
(40 characteristics maximum)

LINE NO.	ANALYSIS 1	ANALYSIS 2
----------	------------	------------

Section I.

1. a. Planning period (years) 01. 25 | |

Section II. Building Investment Information
(Up to 3 buildings or categories of buildings may be specified. If no buildings are involved, enter a "0" in line 2 and proceed to line 8.)

2. Item or group A Trellis

a. Total cost 02. 017550105 | | | |

b. Year of purchase _____
(0 = beg. of planning period;
1 = end of 1st year, etc...)

c. Recovery class (5, 10 or 15 years) _____

3. a. Recovery Option Code 03. 110110010 | | | | | |

Option Code	Recovery Class			
	3	5	10	15
	-yrs depreciated over-			

1	Rapid -----Rapid			
2	3	5	10	15
3	5	12	25	35
4	12	25	35	45
9	non depreciable			

b. Recovery option code on replacement _____

c. Does investment qualify for Federal investment tax credit? (0=no; 1=yes) _____

d. Does investment qualify for State investment tax credit? (0=no; 1=yes) _____

e. Years to replacement _____
(if not to be replaced, enter 0)¹

f. Salvage percent (% of total cost)² _____

¹Model will replace the item or group the number of times required to complete the planning period.

²Ignore inflation when estimating the salvage percent. The percent entered should be based on the value at time of trade-in if replaced, or the value at end of planning period if not replaced. If values are being inflated, the inflated value will be calculated by the computer.

	LINE NO.	ANALYSIS 1	ANALYSIS 2
4. Item or group B _____ (if none is to be considered, enter "0" on line 4 and proceed to line 8).			
a. Total cost	04.	011700205	_ _ _ _ _ _ _
b. Year of purchase _____ (0 = beg. of planning period; 1 = end of 1st year, etc...)			
c. Recovery class (5, 10 or 15 years) _____			
5. a. Recovery option code 05. 10110010 _ _ _ _ _ _ _			
(see 3a for codes)			
b. Recovery option code, replacement _____			
c. Federal ITC (0=no; 1=yes) _____			
d. State ITC (0=no; 1=yes) _____			
e. Years to replacement _____ (if not to be replaced enter 0). ¹			
f. Salvage percent ² _____			
6. Item or group C _____ (if none is to be considered, enter "0" on line 6 and proceed to line 8).			
a. Total cost	06.	0 _ _ _ _ _ _	_ _ _ _ _ _ _
b. Year of purchase _____ (0 = beg. of planning period; 1 = end of 1st year, etc...)			
c. Recovery class (5, 10 or 15 years) _____			
7. a. Recovery option code 07. _ _ _ _ _ _ _ _ _ _ _ _ _ _			
(see 3a for codes)			
b. Recovery option code, replacement _____			
c. Federal ITC (0=no; 1=yes) _____			
d. State ITC (0=no; 1=yes) _____			
e. Years to replacement _____ (if not to be replaced enter 0). ¹			
f. Salvage percent ² _____			

¹Model will replace the item or group the number of times required to complete the planning period.

²Ignore inflation when estimating the salvage percent. The percent entered should be based on the value at time of trade in if replaced, or the value at end of planning period if not replaced. If values are being inflated, the inflated value will be calculated by the computer.

LINE NO.	ANALYSIS 1	ANALYSIS 2
<u>Variety or Planting B</u>		
18. a.	Acres to be established year 0 18. 10 00 00 00	_ _ _ _ _ _ _
b.	year 1 _____	
c.	year 2 _____	
d.	year 3 _____	
19. a.	Land value per acre (\$100) 19. 00 14.72.62.8	_ _ _ _ _ _ _
b.	Establishment cost per acre _____	
c.	Development cost ¹ per acre (\$100) 1st year ² _____	
d.	2nd year _____	
20. a.	3rd year 20. 4.0 0.00.0 10.0	_ _ _ _ _ _ _
b.	4th year _____	
c.	5th year _____	
d.	Terminal value of trees and vines per acre (\$100) ³ _____	

Section V. Land Investment Information⁴

(Enter all depreciable real estate under Section II or IV B. If no land purchase is involved, enter "0" on line 21 and proceed to line 27).

21. Item or group A _____	
a. Year of purchase 21. 00 036000	_ _ _ _ _ _ _
b. Cost _____	
22. Terminal value at end of planning period ⁵ 22. 036000	_ _ _ _ _ _ _

¹Capitalization takes place as of the last year with positive development costs. All development costs occurring after that date should be included in operating costs.
²Year of development costs refer to the years after establishment for each planting.
³Terminal value of trees and vines at year 0 prices.
⁴Include value of bare land purchased for tree and vine investment listed in Section IV B.
⁵Enter value in year 0 dollars. If values are being inflated, an actual dollar value will be calculated by inflating the value entered.

	LINE NO.	ANALYSIS 1	ANALYSIS 2
23. Item or group B _____			
a. Year of purchase	23.	0 -----	-----
b. Cost _____			
24. Terminal value at end of planning period ¹	24.	-----	-----
25. Item or group C _____			
a. Year of purchase	25.	-----	-----
b. Cost _____			
26. Terminal value at end of planning period ¹	26.	-----	-----

Section VI. Income Tax and Cost of Capital Information

27. a. Cost of Capital (%)	27.	15 28 3 1 1	-----
b. Federal Income tax bracket assuming the proposed investment is not made _____			
c. State code (New York = 31) _____			
d. Number of tax families _____			

Section VII. Projected Increase in Cash Flow

(If cash flow is to be estimated by the program, enter "0" on line 28 and proceed to line 38). Enter increase in cash flow before income taxes. (Projected increase in cash receipts minus increase in cash expenses.)²

28. a. Amount	28.	00000003	-----
b. Years ³ _____			
29. a. Amount	29.	00150001	-----
b. Years _____			
30. a. Amount	30.	00460001	-----
b. Years _____			
31. a. Amount	31.	01255001	-----
b. Years _____			
32. a. Amount	32.	01645019	-----
b. Years _____			

¹Enter value in year 0 dollars. If values are being inflated, an actual dollar value will be calculated by inflating the value entered.

²Do not include increased sales of calves and cull cows nor added purchased replacements.

³Total of years in 28 thru 37 must equal planning period in line 1.

	LINE NO.	ANALYSIS 1	ANALYSIS 2
33. a. Amount	33.	0	
b. Years ¹			
34. a. Amount	34.		
b. Years			
35. a. Amount	35.		
b. Years			
36. a. Amount	36.		
b. Years			
37. a. Amount	37.		
b. Years			

Section VIII. Budget Projection Data

(If cash flows are entered on lines 28 through 37, go to line 64).

CASH INCOME AND EXPENSE DATA FOR BASE YEAR²

38. Labor	38.		
39. Feed	39.		

Machinery

40. a. Machine hire	40.		
b. Machine repairs			
41. a. Auto Expense (farm share)	41.		
b. Gas and oil			

Livestock

42. a. Purchased replacements ³	42.		
b. Breeding fees			

¹Total of years in 28 thru 37 must equal planning period in line 1.

²Adjust base year record where more or less than one year's expense is included, i.e., if the feed bill was paid off, include only those feed costs incurred during the year. The data entered for the base year should reflect the results of future operation of the business if the investment were not made.

³Include only replacements for the presently owned herd. Exclude animals purchased to increase herd size.

LINE NO.	ANALYSIS 1	ANALYSIS 2
-------------	---------------	---------------

Section IX Financial Feasibility

(If financial feasibility will not be considered, enter 0 in line 64 and proceed to line 85)

Credit Terms Available

(List the credit terms that will be used for refinancing existing debt and financing capital purchases connected with this investment. If a variable rate is being charged, list the initial effective rate).

64. Credit Terms I, Lender _____ 64. 30/12.99/1 | | | . | | | |
 (real estate , nonreal)

- a. Years to repay _____
- b. Interest rate _____
- c. Even principal and interest (=0) or even principal (=1) _____
- d. Number of payments per year (for monthly, enter 0) _____

65. Credit Terms II, Lender _____ 65. 10/14.99/1 | | | . | | | |
 (real estate , nonreal)

- a. Years to repay _____
- b. Interest rate _____
- c. Even principal and interest (=0) or even principal (=1) _____
- d. Number of payments per year (for monthly, enter 0) _____

66. Credit Terms III, Lender _____ 66. 07/14.99/1 | | | . | | | |
 (real estate , nonreal)

- a. Years to repay _____
- b. Interest rate _____
- c. Even principal and interest (=0) or even principal (=1) _____
- d. Number of payments per year (for monthly, enter 0) _____

67. Credit Terms IV, Lender _____ 67. 0 | | | . | | | |
 (real estate , nonreal)

- a. Years to repay _____
- b. Interest rate _____
- c. Even principal and interest (=0) or even principal (=1) _____
- d. Number of payments per year (for monthly, enter 0) _____

LINE NO.	ANALYSIS 1	ANALYSIS 2
----------	------------	------------

Current debt outstanding

(Up to 5 loans may be entered. If fewer than 5 exist, enter 0 in the line following the last loan entered and proceed to line 78.) If financial feasibility is to consider the investment only, skip to line 78.

68. Loan A Mortgage 68. 009211104.0 | | | | | | | | | |

a. Loan payment(\$¹ or original principal (\$1,000) _____

b. Above amount entered is loan payment (=0) or original principal (=1) _____

c. Number of payments per year (monthly payments =0) _____

d. Years since loan was taken out _____

69. a. Years to pay (original term of loan) 30011.0011 | | | | | | | | | |

b. Payments are even principal and interest (=0) or even principal (=1) _____

c. Interest rate _____

d. Will this loan be refinanced (1=yes, 0=no) _____

e. What credit terms will be used when refinancing (from lines 64-67) (1=Credit Terms I, 2=Credit Terms II, 3=Credit Terms III, 4=Credit Terms IV, leave blank if not refinanced) _____

70. Loan B Equipment 70. 003011102.0 | | | | | | | | | |

a. Loan payment(\$¹ or original principal (\$1,000) _____

b. Above amount entered is loan payment (=0) or original principal (=1) _____

c. Number of payments per year (monthly payments = 0) _____

d. Year since loan was taken out _____

71. a. Years to pay (original term of loan) 07014.000 | | | | | | | | | |

b. Payments are even principal and interest (=0) or even principal (=1) _____

c. Interest rate _____

d. Will this loan be refinanced (1=yes, 0=no) _____

e. What credit terms will be used when refinancing (from lines 64-67) (1=Credit Terms I, 2=Credit Terms II, 3=Credit Terms III, 4=Credit Terms IV, leave blank if not refinanced) _____

¹Enter total principal plus interest payment if even payment loan. Enter principal only if even principal loan. If loan payment is \$10,000 or greater, original principal must be entered.

	LINE NO.	ANALYSIS 1	ANALYSIS 2
76. Loan E _____	76.	_ _ _ _	_ _ _ _
a. Loan payment(\$) ¹ or original principal (\$1,000) _____		_ _ _ _	
b. Above amount entered is loan payment (=0) or original principal (=1) _____		_ _ _ _	
c. Number of payments per year (monthly payments = 0) _____		_ _ _ _	
d. Years since loan was taken out _____		_ _ _ _	
77. a. Years to pay (original term 77. of loan _____)		_ _ _ _	_ _ _ _
b. Payments are even principal and interest (=0) or even principal (=1) _____		_ _ _ _	
c. Interest rate _____		_ _ _ _	
d. Will this loan be refinanced (1=yes, 0=no) _____		_ _ _ _	
e. What credit terms will be used when refinancing (from lines 64-67) (1=Credit Terms I, 2=Credit Terms II, 3=Credit Terms III, 4=Credit Terms IV, leave blank if not refinanced _____)		_ _ _ _	
78. In what years will refinancing occur? (If no entry is made in this line, refinancing will occur only in year 0). (0 = no refinancing, 1 = refinancing)			
	78.	0 1 2 3 4 5 / 0 0 0 0 0 0	0 1 2 3 4 5 _ _ _ _ _
a. Year 0 _____		_ _ _ _	
b. Year 1 _____		_ _ _ _	
c. Year 2 _____		_ _ _ _	
d. Year 3 _____		_ _ _ _	
e. Year 4 _____		_ _ _ _	
f. Year 5 _____		_ _ _ _	
g. Year of refinancing debt incurred to replace existing machinery inventory (0 = not refinanced, 99 = every year) _____		_ _ _ _	

¹Enter total principal plus interest payment if even payment loan. Enter principal only if even principal loan. If loan payment is \$10,000 or greater, original principal must be entered.

	LINE NO.	ANALYSIS 1	ANALYSIS 2
79. Credit terms used for new investment (from lines 64-67) (1= Credit terms I, 2=Credit Terms II, 3=Credit Terms III and 4=Credit Terms IV, 5=Financed from equity).			
a. Buildings	79.	a 1 b 2 c d e 3	a b c d e
(i) Group A			
(ii) Group B			
(iii) Group C			
b. Equipment			
c. Livestock or trees and vines			
d. Land (i) Group A			
(ii) Group B			
(iii) Group C			
e. Replacement of existing equipment (do not use 5)			
If financial feasibility is to consider the investment only, skip lines 80-83, 84b and 84c.			
80. a. Average annual amount that will be spent on replacement machinery in future years if the investment is not made (\$1,000) ¹	80.	0007000	
b. Annual depreciation if the investment is not made (\$1,000)			
81. If budget generator is not used: 81.	81.	002500000	
a. Expected annual net cash flow if the investment is not made (\$1,000) (Calculated as total cash farm income minus total cash expenses excluding interest costs) ¹			
b. Annual amount of income that qualifies for capital gains treatment if investment is not made (\$1,000)			
82. Investment credit carryover (\$1,000)	82.	00.000.0 02.3	
a. Federal			
b. State			
c. Federal taxes paid during last three years that have not been offset by investment tax credit (\$1,000)			
83. Expected annual investment credit without expansion (\$1,000) ¹	83.	00.704.4	
a. Federal			
b. State			
84. a. Estimated annual cash living expenses excluding taxes (\$1,000) ¹	84.	12.000.0 04	
b. Expected annual nonfarm income (\$1,000) ¹			
c. Number of tax exemptions (average per tax family)			

¹Enter value in year 0 dollars. If values are being inflated, an actual dollar value will be calculated by inflating the value entered.

		LINE NO.	ANALYSIS 1	ANALYSIS 2
Section X. Modification of Assumptions ¹ (Enter "0" on line following last modification to be made. If none, enter "0" on line 85)				
85.	a.	Assumption value desired	85. 000060054	.
	b.	Assumption code _____		
86.	a.	Assumption value desired	86. 0 .	.
	b.	Assumption code _____		
87.	a.	Assumption value desired	87. .	.
	b.	Assumption code _____		
88.	a.	Assumption value desired	88. .	.
	b.	Assumption code _____		
89.	a.	Assumption value desired	89. .	.
	b.	Assumption code _____		
90.	a.	Assumption value desired	90. .	.
	b.	Assumption code _____		
91.	a.	Assumption value desired	91. .	.
	b.	Assumption code _____		
92.	a.	Assumption value desired	92. .	.
	b.	Assumption code _____		
93.	a.	Assumption value desired	93. .	.
	b.	Assumption code _____		
94.	a.	Assumption value desired	94. .	.
	b.	Assumption code _____		
95.	a.	Assumption value desired	95. .	.
	b.	Assumption code _____		
96.	a.	Assumption value desired	96. .	.
	b.	Assumption code _____		

¹See user's manual (Table 1) for assumptions and how to use this section.

	LINE NO.	ANALYSIS 1	ANALYSIS 2
97. a. Assumption value desired	97.	.	.
b. Assumption code		_____	
98. a. Assumption value desired	98.	.	.
b. Assumption code		_____	
99.1/ a. Assumption value desired	99.	.	.
b. Assumption code		_____	

Use line 99 to specify line changes for adjusted analyses:

Input line numbers changed for Analysis 2 99. 14 | | | | | | | | |

1/ Computer systems that use line 99 to indicate lines to be changed for adjusted analyses cannot use this line for modifications of assumptions.

NEWPLAN PROGRAM 50
MAJOR CAPITAL INVESTMENT MODEL
USING FORM 4 OF PROGRAM 50
INVESTMENT ANALYZED FOR KARL VINEMAN
INVESTMENT IS VINEYARD DEVELOPMENT
THIS IS ANALYSIS 1

*** INPUT DATA ***

LINE# VALUES:

1	25							
BUILDING INVESTMENT INFORMATION								
2	17550.	1.	5.					
3	1.	0.	1.	1.	0.	10.		
4	11700.	2.	5.					
5	1.	0.	1.	1.	0.	10.		
EQUIPMENT INVESTMENT INFORMATION								
TREE AND VINE INVESTMENT INFORMATION								
14	999	00	1.	1.	1.	1.		
15	5.	10.	0.	0.				
16	0.		5.6		2.4	2.7		
17		3.8		0.0		0.0	5.0	
18	10.	0.	0.	0.				
19	0.		14.7		2.6	2.8		
20		4.0		0.0		0.0	10.0	
LAND INVESTMENT INFORMATION								
21	0.	36000.						
22		36000.						
INCOME TAX AND COST OF CAPITAL INFORMATION								
27	15.	28.	31.	1.				
PROJECTED INCREASE IN CASH FLOW								
28	0.	3.						
29	1500.	1.						
30	4600.	1.						
31	12550.	1.						
32	16450.	19.						
FINANCIAL FEASIBILITY INFORMATION								
64	30.	12.0	0.	1.				
65	10.	14.0	0.	1.				
66	7.	14.0	0.	1.				
68	92.	1.	1.	4.0				
69	30.	0.	11.00	1.	1.			
70	30.	1.	1.	2.0				
71	7.	0.	14.00	0.	0.			

78	1.	0.	0.	0.	0.	0.	0.		
79	1.	1.	0.	0.	2.	1.	0.	0.	3.
80		7.		8.					
81		25.0		0.0					
82		0.0		0.0				2.3	
83		0.7		0.4					
84		12.0		0.0				4.0	

MODIFICATION OF ASSUMPTIONS
 85 6.0 54.

*** END OF INPUT DATA ***

*** INVESTMENT ANALYSIS ***

1. NET PRESENT VALUE OF INVESTMENT (\$) IS: 57392.
2. PERCENT AFTER TAX COST OF CAPITAL IS: 9.4
3. CASH FLOW:

YEAR	BEFORE TAX CASH FLOW	DEPRE- CIATION	TAXABLE INCOME	TAX	AFTER TAX CASH FLOW	PRESENT VALUE
1	-4028.	0.	-4028.	-1318.	-2710.	-2477.
2	-7360.	2651.	-10010.	-2980.	-4379.	-3659.
3	-10243.	5761.	-16004.	-4314.	-5929.	-4528.
4	-2904.	8953.	-11856.	-3418.	515.	359.
5	6156.	10837.	-4682.	-1523.	7679.	4900.
6	17802.	11066.	6737.	2421.	15381.	8972.
7	24735.	7298.	17436.	6740.	17995.	9595.
8	26219.	4675.	21543.	8480.	17738.	8645.
9	27792.	1184.	26607.	10735.	17057.	7599.
10	29459.	0.	29459.	12066.	17393.	7083.
11	31227.	0.	31227.	12891.	18335.	6825.
12	33100.	0.	33100.	13766.	19334.	6578.
13	35086.	0.	35086.	14693.	20393.	6343.
14	37191.	0.	37191.	15676.	21516.	6117.
15	39423.	0.	39423.	16717.	22705.	5900.
16	41788.	0.	41788.	17863.	23925.	5683.
17	44295.	0.	44295.	19119.	25176.	5466.
18	46953.	0.	46953.	20451.	26502.	5260.
19	49770.	0.	49770.	21863.	27907.	5063.
20	52756.	0.	52756.	23360.	29396.	4875.
21	55922.	0.	55922.	24946.	30975.	4695.
22	59277.	0.	59277.	26628.	32649.	4524.
23	62834.	0.	62834.	28411.	34423.	4360.
24	66603.	0.	66603.	30300.	36303.	4203.
25	70600.	0.	70600.	32309.	38290.	4052.
TOTAL						116431.

4. INVESTMENTS (OUTLAY):

YEAR	BUILDINGS	EQUIPMENT	ORCHARD - VINEYARD		LAND	TOTAL	PRESENT VALUE
			TREES-VINES	LAND			
0	0.	0.	17500.	0.	36000.	53500.	53500.
1	18603.	0.	5936.	0.	0.	24539.	22431.
2	13146.	0.	0.	0.	0.	13146.	10984.
TOTAL							86915.

TERMINAL VALUE:

BEFORE TAX	12553.	0.	75106.	0.	154504.	242163.	25626.
AFTER TAX	7532.	0.	57464.	0.	135543.	200539.	21221.

5. INVESTMENT TAX CREDIT:

YEAR	CREDIT	RECAPTURE	NET
2	2976.	0.	2976.
3	2103.	0.	2103.
4	2800.	0.	2800.
5	950.	0.	950.

PRESENT VALUE OF NET INVESTMENT TAX CREDIT IS: 6654.

6. BUDGET:

ITEM	YEAR				
	1	2	3	4	5
EXPENSED					
DEVELOPMENT COSTS	4028.	7360.	10243.	4797.	0.
INPUT CASH FLOW	0.	0.	0.	1894.	6156.
INCREASE IN CASH FLOW	-4028.	-7360.	-10243.	-2904.	6156.

7. FINANCIAL FEASIBILITY ANALYSIS: COMPLETE FARM BUSINESS.

ITEM	YEAR				
	1	2	3	4	5
BEFORE-TAX CASH FLOW	22472.	20730.	19533.	28658.	39611.
TAXES PAID	29.	-1562.	0.	-0.	0.
AFTER-TAX CASH FLOW	22443.	22292.	19533.	28658.	39611.
LIVING EXPENSES	12720.	13483.	14292.	15150.	16059.
CASH AVAILABLE FOR DEBT	9723.	8809.	5240.	13508.	23553.
DEBT PAYMENTS: SCHEDULED	25971.	29418.	31050.	31050.	31050.
INCL. MACH. REPLACEMENT	25971.	31148.	34614.	36559.	38619.
EXCESS OR DEFICIT	-16248.	-22339.	-29374.	-23050.	-15067.

DEBT SUMMARY (SCHEDULED):

	0	YEAR				
		1	2	3	4	5
OUTSTANDING DEBT:						
INTERMEDIATE	41517.	42915.	37434.	31186.	24063.	15943.
LONG TERM LOANS	125823.	143904.	156389.	155595.	154704.	153707.
MACHINERY REP.		7419.	14593.	21408.	27734.	33415.
TOTAL	167340.	194238.	208416.	208189.	206502.	203066.
DEBT PAYMENTS:						
INTERMEDIATE		10351.	11489.	11489.	11489.	11489.
LONG TERM LOANS		15620.	17930.	19562.	19562.	19562.
MACHINERY REP.		0.	1730.	3564.	5508.	7569.

* * * *

FINANCING FROM EQUITY

0. 0. 0. 0. 0. 0.

*** END OF ANALYSIS 1 ***

*** THIS IS ANALYSIS 2 ***

*** DATA CHANGES ***

LINE # VALUES:

14 999 00 0. 0. 1. 1.

*** END OF CHANGES ***

*** INVESTMENT ANALYSIS ***

1. NET PRESENT VALUE OF INVESTMENT (\$) IS: 57157.

2. PERCENT AFTER TAX COST OF CAPITAL IS: 9.8

3. CASH FLOW:

YEAR	BEFORE TAX CASH FLOW	DEPRE- CIATION	TAXABLE INCOME	TAX	AFTER TAX CASH FLOW	PRESENT VALUE
1	0.	0.	0.	0.	0.	0.
2	0.	2651.	-2651.	-879.	879.	729.
3	0.	5761.	-5761.	-1856.	1856.	1402.
4	1894.	11192.	-9299.	-2797.	4691.	3227.
5	6156.	15921.	-9766.	-2918.	9074.	5686.
6	17802.	16840.	962.	342.	17461.	9964.
7	24735.	12953.	11782.	4343.	20391.	10598.
8	26219.	10330.	15889.	6084.	20135.	9531.
9	27792.	3703.	24089.	9559.	18232.	7860.
10	29459.	0.	29459.	12066.	17393.	6829.
11	31227.	0.	31227.	12891.	18335.	6556.
12	33100.	0.	33100.	13766.	19334.	6297.
13	35086.	0.	35086.	14693.	20393.	6049.
14	37191.	0.	37191.	15676.	21516.	5812.
15	39423.	0.	39423.	16717.	22705.	5586.
16	41788.	0.	41788.	17863.	23925.	5361.
17	44295.	0.	44295.	19119.	25176.	5138.
18	46953.	0.	46953.	20451.	26502.	4925.
19	49770.	0.	49770.	21863.	27907.	4724.
20	52756.	0.	52756.	23360.	29396.	4532.
21	55922.	0.	55922.	24946.	30975.	4349.
22	59277.	0.	59277.	26628.	32649.	4175.
23	62834.	0.	62834.	28411.	34423.	4009.
24	66603.	0.	66603.	30300.	36303.	3850.
25	70600.	0.	70600.	32309.	38290.	3699.

TOTAL

130886.

4. INVESTMENTS (OUTLAY):

YEAR	BUILDINGS	EQUIPMENT	ORCHARD - VINEYARD		LAND	TOTAL	PRESENT VALUE
			TREES-VINES	LAND			
0	0.	0.	17500.	0.	36000.	53500.	53500.
1	18603.	0.	4028.	0.	0.	22631.	20611.
2	13146.	0.	7360.	0.	0.	20506.	17009.
3	0.	0.	10243.	0.	0.	10243.	7738.
4	0.	0.	4797.	0.	0.	4797.	3301.
TOTAL							102158.

TERMINAL VALUE:

BEFORE TAX	12553.	0.	75106.	0.	154504.	242163.	23391.
AFTER TAX	7683.	0.	51395.	0.	136112.	195190.	18854.

5. INVESTMENT TAX CREDIT:

YEAR	CREDIT	RECAPTURE	NET
2	2976.	0.	2976.
3	2103.	0.	2103.
4	5315.	0.	5315.
5	2970.	0.	2970.

PRESENT VALUE OF NET INVESTMENT TAX CREDIT IS: 9575.

6. BUDGET:

ITEM	YEAR				
	1	2	3	4	5
EXPENSED					
DEVELOPMENT COSTS	0.	0.	0.	0.	0.
INPUT CASH FLOW	0.	0.	0.	1894.	6156.
INCREASE IN CASH FLOW	0.	0.	0.	1894.	6156.

7. FINANCIAL FEASIBILITY ANALYSIS: COMPLETE FARM BUSINESS.

ITEM	YEAR				
	1	2	3	4	5
BEFORE-TAX CASH FLOW	26500.	28090.	29775.	33456.	39611.
TAXES PAID	784.	-2062.	0.	-0.	0.
AFTER-TAX CASH FLOW	25716.	30152.	29775.	33456.	39611.
LIVING EXPENSES	12720.	13483.	14292.	15150.	16059.
CASH AVAILABLE FOR DEET	12996.	16669.	15483.	18306.	23553.
DEBT PAYMENTS: SCHEDULED	25971.	29053.	32095.	34059.	34979.
INCL. MACH.	25971.	30783.	35660.	39567.	42548.
REPLACEMENT					
EXCESS OR DEFICIT	-12975.	-14113.	-20176.	-21262.	-18995.

DEBT SUMMARY (SCHEDULED):	YEAR					
	0	1	2	3	4	5
OUTSTANDING DEBT:						
INTERMEDIATE	41517.	41007.	42984.	46711.	43550.	34230.
LONG TERM LOANS	125823.	143904.	156389.	155595.	154704.	153707.
MACHINERY REP.		7419.	14593.	21408.	27734.	33415.
TOTAL	167340.	192330.	213966.	223714.	225989.	221352.
DEBT PAYMENTS:						
INTERMEDIATE		10351.	11123.	12534.	14498.	15417.
LONG TERM LOANS		15620.	17930.	19562.	19562.	19562.
MACHINERY REP.		0.	1730.	3564.	5508.	7569.

* * * *

FINANCING FROM EQUITY	0.	0.	0.	0.	0.	0.
-----------------------	----	----	----	----	----	----

*** END OF ANALYSIS 2 ***

*** NO MORE ANALYSES - RUN ENDED ***