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Special Report 873

April 1991

FEEDLOT Computer Software



OREGON STATE UNIVERSITY EXTENSION SERVICE

FEEDLOT

Pilot • SR 873 • April 1991

Description

FEEDLOT is a microcomputer program designed to help producers compare the economics of alternative production and marketing strategies. It allows users to develop and customize a partial budget for retaining yearlings through a feedlot. This could include sending stocker-feeder cattle (600 to 800 lbs) to the feedlot or sending weaned calves (500 to 600 lbs) directly to the feedyard.

Users

Cattle producers, Extension agents, professional consultants, and lenders.

Authors

William W. Riggs, Extension agent (farm management), Lake County, Oregon State University; and L. Allen Torrell, Extension economist, New Mexico State University.

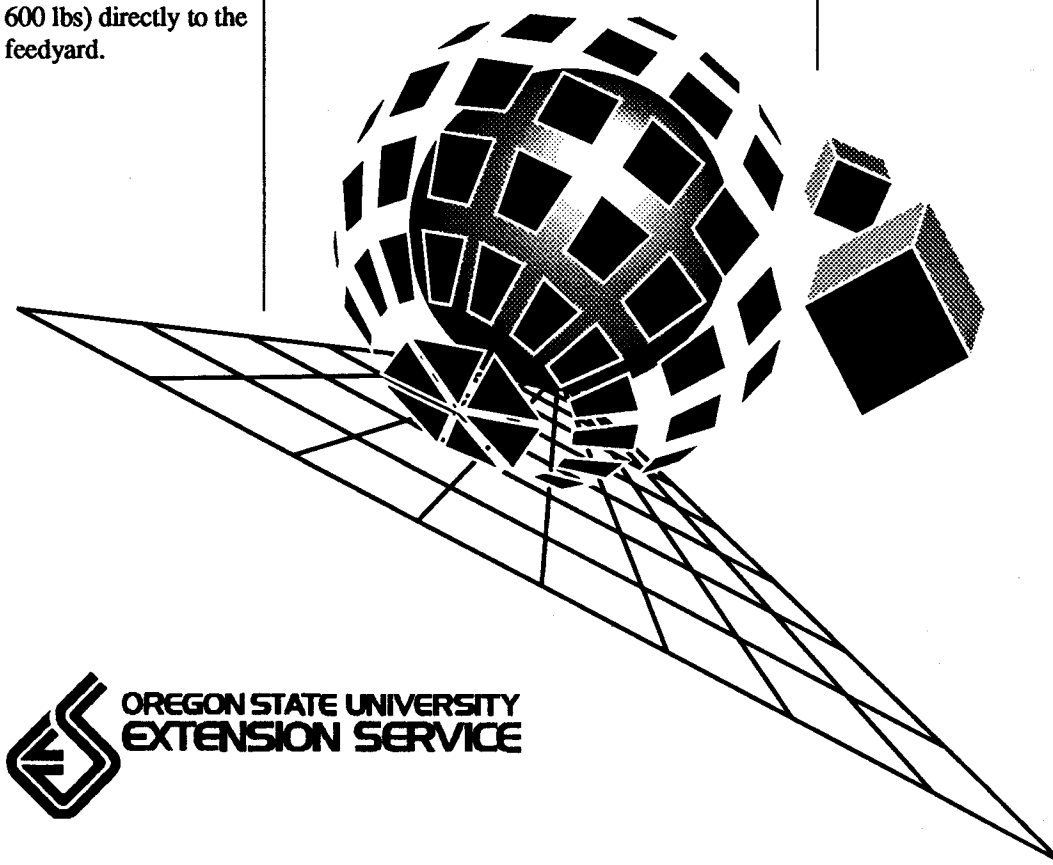
Compatibility

Requires IBM PC, or any fully compatible personal computer with a minimum of 512K RAM and at least one disk drive. Two different copies are supplied: FEEDLOT.WK1 requires LOTUS 1-2-3, version 2.01 or 2.2. The compiled version, FEEDLOT.OVR and FEEDLOT.WKB, doesn't require any software other than DOS.

Ordering

Order copies of FEEDLOT, SR 873, from:

William W. Riggs
Extension Agent
OSU Extension Service
Lake County Office
Courthouse
Lakeview, OR 97630



OREGON STATE UNIVERSITY
EXTENSION SERVICE

PREFACE

What is Retained Ownership?

Retained ownership means keeping your cattle through more stages of the production process. Profit potential exists each time cattle change hands. Some advantages of retained ownership are that it allows you to vertically integrate and diversify your operation, spread risk by marketing cattle at different times of the year, and more closely evaluate the performance capabilities and genetic potential of your cattle (Texas Cattle Feeders Association/Texas Agricultural Extension Service 1990).

Numerous factors influence the economics of retained ownership. Some of the major considerations include: initial weight of cattle, sex, breed, body type, background (nutritional status, disease exposure), shrink, price spread, and environmental factors (McNeill 1990). Because so many factors influence the performance and economic potential of putting cattle in the feedlot, a careful evaluation of this management option should be made before cattle enter the feedlot.

Why use the FEEDLOT program?

Budgeting your production alternatives on the computer before investing in these alternatives may save you money. The FEEDLOT program was developed to help producers compare the economics of alternative production and marketing strategies. The FEEDLOT program allows you to develop and customize a partial budget for retaining yearlings through a feedlot. This could include sending stocker-feeder cattle to the feedlot, or if you wean heavy calves (500 to 600 lbs), weaned calves could be sent directly to the feedyard.

Why use this guide?

To help you use the FEEDLOT program. The guide includes sample menus, screens, and instructions. These features are designed to help you build, modify and print a partial budget of the retained ownership marketing option.

What will you need to get started?

- A DOS operating system disk.
- An IBM-compatible computer with at least 512K RAM and at least one disk drive.
- Financial documents that apply to the budget you want to create.

- Cost and production information from the feedlot you may contract with to feed your cattle. Use a printed copy of the input form listed in this users guide as a reference.

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FEEDLOT

A Computer Program for Estimating the Economics of Retained Ownership Through the Feedlot

William W. Riggs and L. Allen Torell

INTRODUCTION

The decision to retain ownership of yearlings through the feedlot requires careful consideration of the added costs and added returns of this marketing strategy. Use the FEEDLOT program to budget this marketing alternative on paper before committing funds to retain ownership of cattle that may or may not make you money. Numerous analyses can quickly be performed to evaluate under what market conditions retained ownership would be the most profitable marketing strategy.

Program Design

The FEEDLOT computer program is menu driven and consists of three major components. The first component is the MENU and legend. The menu outlines six alternatives for the user: 1) INPUT, input market and production parameters; 2) VIEW, view the budget; 3) PRINT, print the input and budget reports; 4) FILE, save or retrieve a file; 5) QUIT, exit menu driven routines and 6) EXIT, save the file and exit the program. The second part of the program is the required user input. The third program component gives the partial budget that was constructed using the program.

Two different copies of the program are supplied on the enclosed disk(s). The file FEEDLOT.WK1 is a spreadsheet template written in LOTUS 1-2-3® version 2.2. If you are an experienced spreadsheet user and have access to LOTUS 1-2-3® version 2.01, 2.2, 3.0 or 3.1, or other spreadsheets compatible with LOTUS 1-2-3®, you may want to use this version of the program. Also on the disk is a copy of the feedlot program that has been compiled using the Baler® compiler. This compiled version of the program only requires DOS to run.

This users manual is divided into three sections. The first section is for the experienced LOTUS 1-2-3® user requiring only minimal assistance to use the program. Only a brief description of the program name and menu is provided. The second section is for the user needing more help to run the spreadsheet version of the program. This section provides a detailed explanation of the menus that are common to both the spreadsheet and compiled

versions of the program. The third section describes how to use and access the compiled version of the program.

Section 2 shows how to load and use the FEEDLOT program on a system with two floppy disk drives. If your computer has a hard drive or only one disk drive you will need to alter the way LOTUS is accessed. Numerous alternative setups of hard disks are possible, including different disk designations (e.g. C drive, D drive, E drive), menu routines and batch files for software execution. Because of the numerous alternatives that your system might use we limit our examples to a two floppy disk system. If your computer has a hard drive you may need to consult the users manual for your system to see how LOTUS 1-2-3® is accessed on your computer.

Program Requirements

To run the FEEDLOT program requires an IBM-personal computer or IBM compatible computer running under the DOS operating system, with at least 512K RAM and at least one disk drive. A printer is desirable but not necessary. With this configuration the compiled version of the program can be run.

To run the spreadsheet version of the program requires LOTUS 1-2-3® software. The LOTUS 1-2-3® system is one of the popular spreadsheet programs that is available. It requires either a two floppy disk system or a hard disk drive, and a computer with a minimum of 512K of RAM memory.

As a precaution, a copy of the FEEDLOT program should be made on a permanent storage diskette in case the original is accidentally destroyed. This can be done using the DOS operating system COPY command.

PROGRAM INPUT AND OUTPUT

Appendix A provides a glossary of terms that describes required user inputs. Figure 1 shows an example of the input screen. User input is shown by the shaded areas. Most of the required input is self explanatory and is structured the way feedlots generally charge for custom feeding.

The cost of retained ownership will vary from year-to-year and the example included in this manual should not

INPUT SECTION	STEERS	HEIFERS
Feedlot Ration Charge (\$/ton)	\$120.00	\$121.50
Feed Conversion for steers (lbs fed/lb gain)	7.6	--
Feed Conversion for heifers (lbs fed/lb gain)	--	7.8
Daily Weight Gain (per head)	3.0	2.8
Total Number of Days on Feed	142	145
Daily Yardage Charge (\$/head/day)	\$0.00	\$0.00
Processing Charge (\$/head)	\$5.25	\$5.25
Pregnancy Check and Abortion Charge (\$/head)	--	\$3.00
Veterinary, Drugs, and Supplies (\$/head)	\$5.00	\$5.00
Hauling Costs to Lot (\$/head)	\$6.75	\$6.75
Miscellaneous Expenses (\$/head)	\$2.00	\$2.00
Interest Rate (%)	12.00%	12.00%
Sale and Purchasing Weights	--	--
Weight Beginning (lbs)	700	675
Weight Ending (lbs)	1,120	1,075
Purchase Price (\$/cwt)	\$82.00	\$77.00
Sale Price (\$/cwt)	\$75.00	\$72.00
Death Loss (%)	0.50%	0.50%
Shrink (Weight Loss Hauling to feedlot) (%)	1%	1%
Number of Cattle to be fed	100	100

Figure 1. User Input.

be considered an indication of what the costs and returns might be for your situation. The feedlot you are considering contracting with will be able to provide current charges. Other production rates such as the expected average daily gain (ADG) and feed conversion rates can be estimated by feed yard operators and experienced cattle feeders.

Figure 2 shows the budget generated by the computer program. As shown, the program uses a partial budget approach; only the added costs and added returns from retained ownership are considered. One of the major cost items will be the purchase cost of the cattle going into the feed yard. In many cases the cattle will not be purchased outright but rather held back from sale off the ranch. In this case, the cost of purchasing livestock is an opportunity cost and not an out-of-pocket expense. The opportunity to sell the livestock without the additional expense of retained ownership is an option that must be considered in the analysis, however.

The computer program calculates the net return per head for both heifers and steers (line D, figure 2). If budgeted net returns are positive, the economics of retained ownership is estimated to be economical. Similarly, if net returns are negative the implication is that retained ownership with the specified costs and returns would not be profitable. Breakeven prices and average cost per pound of gain is also calculated by the program.

SECTION 1

Instructions for the Advanced LOTUS User

The spreadsheet version of the FEEDLOT computer program has been saved on the enclosed diskette under the file name FEEDLOT.WK1. When the program is loaded you will automatically enter a macro driven menu to assist with data input, viewing and printing. If you should exit the menu and wish to go back, press the ALT

key and the A key at the same time (ALT A). The letters CMD will appear at the bottom of the screen when in the macro mode.

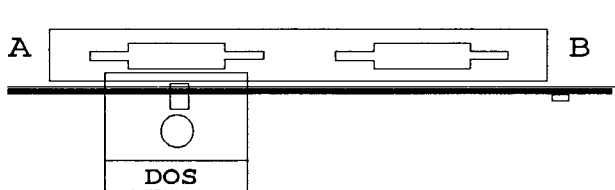
SECTION 2 A More Detailed Set of Instructions

Starting the FEEDLOT Program (Two Disk System)

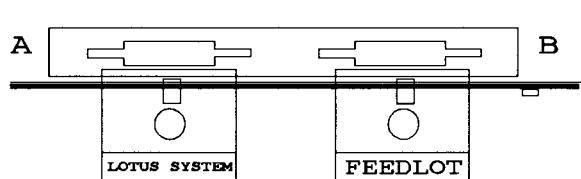
• Load the FEEDLOT program into your computer.

To start the LOTUS 1-2-3® version of the FEEDLOT program:

1. Boot your computer with DOS. Then, remove the DOS disk.



2. Insert a LOTUS system disk in Drive A. Insert the FEEDLOT program disk in Drive B.

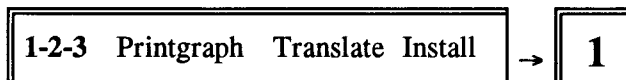


3. Type <LOTUS>¹ at the A> and press <RETURN>.

A > LOTUS



4. Press <1> to choose the 1-2-3 option from the menu at the top of the screen. The LOTUS spreadsheet should be initiated.

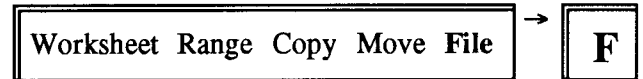


¹The <> keys are used to highlight the number or letter to be typed. Do not type the brackets <>.

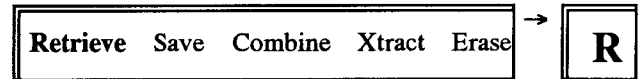
5. Press the slash </> key.



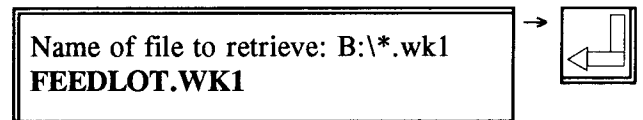
6. Press <F> to choose the File option from the menu at the top of the screen.



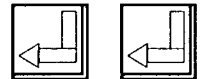
7. Press <R> to choose the Retrieve option from the menu at the top of the screen.



8. Use the arrow keys to move the highlighted cursor to the file FEEDLOT.WK1. Then press <RETURN> to retrieve the ranch value file.

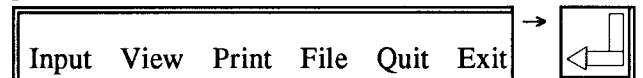


9. Press <RETURN> twice more to go past the copyright and disclaimer and to enter the main menu of the program.



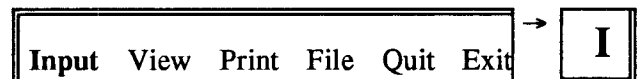
Using the FEEDLOT Program

The main menu is displayed as soon as the FEEDLOT program is loaded. To select any one of the five menu options either type the first letter of the option desired or move the cursor (highlighted rectangle) to that option and press <RETURN>.



INPUT Menu Option

Press <I> to choose the INPUT option from the FEEDLOT main menu.



Entering the input menu option places the cursor in the data region of the worksheet. The user is then allowed to enter data in certain cells of the worksheet. Other cells are protected formulas and will not accept input. The user inputs numerous factors which describe the cost and

COST-RETURN PROJECTION FOR RETAINED OWNERSHIP

		STEERS TOTAL (\$/Head)	HEIFERS TOTAL (\$/Head)
VARIABLE COSTS PER HEAD:			
1. Feedlot Ration Charge			
Conversion steers	7.6	\$194.71	
Conversion heifers	7.8		\$192.74
2. Feedlot Ration Charge (\$/day).....		1.37	1.33
3. Yardage Charge		0.00	0.00
4. Processing Charge		5.25	5.25
5. Pregnancy Check and Abortion			3.00
6. Veterinary, Drugs, and Supplies		5.00	5.00
7. Hauling		6.75	6.75
8. Miscellaneous Expenses		2.00	2.00
9. Interest Charge			
Purchased Livesock + 1/2 variable Cost			
for number of days in feedlot		31.89	29.98
A. TOTAL VARIABLE COSTS (TVC).....		\$245.60	\$244.72
RETURNS PER HEAD			
9. Livestock Sales			
	Weight Price/cwt		
Steers:	1,120 \$75.00	\$840.00	
Heifers:	1,075 \$72.00		\$774.00
10. Less Purchase Cost of Animals:			
Steers:	700 \$82.00	(\$574.00)	
Heifers:	675 \$77.00		(\$519.75)
11. Less Death Loss:	1% of line 9	(4.20)	(3.87)
C. GROSS RETURNS PER HEAD.....		\$261.80	\$250.38
D. RETURNS OVER TOTAL VARIABLE COSTS (PER/HEAD)			
(Gross Returns - TVC)		\$16.20	\$5.66
E. TOTAL RETURN OR LOSS		1,619.57	565.91
F. BREAK-EVEN SELLING PRICE (\$/CWT):			
(TC + 10 + 11)/(Selling Weight)		\$73.55	\$71.47
G. BREAK-EVEN PURCHASE PRICE (\$/CWT):			
(Buy Price-TC of Gain*100/Purchase Wght)		\$84.31	\$77.84
H. AVERAGE COST PER CWT OF GAIN			
Feed Costs		\$46.36	\$48.18
Non-Feed Costs		\$13.12	\$13.96
Total Costs		\$59.48	\$62.15

Figure 2. Retained Ownership Partial Budget.

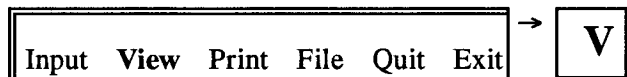
production rates for the partial budget analysis (Appendix A). Required user input is highlighted as shaded cells in figure 1.

Data are entered by moving the cursor to the appropriate data line with the up (↑) or down (↓) arrow keys at the right of the keyboard. The user moves the cursor to the appropriate cell, enters the required data and moves to the next cell using the arrow keys. Pressing <RETURN> ends the input menu execution and returns the user to the main menu of the program.

VIEW Menu Option

The partial budget generated by the FEEDLOT program can be viewed by entering the view option. The user can move up and down the partial budget using the up (↑) or down (↓) keys. Pressing <RETURN> returns the user to the main menu. The input data can be viewed by entering the INPUT menu.

Press <V> to choose the VIEW option from the FEEDLOT main menu.

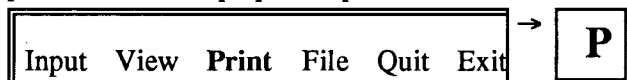


PRINT Menu Option

If a printout of program results is desired, make sure the printer is on-line and then enter the PRINT option. This will print both the input data and the partial budget.

Press <P> to choose the PRINT option from the main menu. A message to align the paper to the top of the page will appear. After you have aligned the paper and hit <RETURN> the menu driven print macro will print the input data and the budget.

Most printers work from the parallel port. If your printer is a serial printer you will need to consult your printer manual for proper setup.



FILE Menu Option

The File menu option can be used to save the data in either the existing file or a new file, or to retrieve a file that was previously saved. Press <F> to choose the File option from the main menu.



SAVE Sub-menu Option

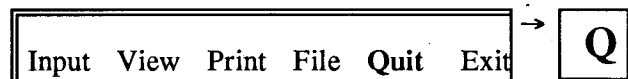
Press <S> to save the data to a file. Selecting replace will replace the original data with the current data. To save as a new file, type the desired name followed by <RETURN>. Press <RETURN> to re-enter the main menu.

Press <R> if using the LOTUS version of the program to retrieve a file that has previously been saved. Use the cursor key to highlight the desired file to retrieve and press <RETURN>.



QUIT Menu Option

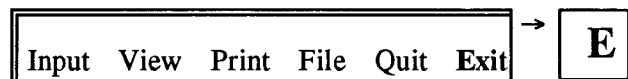
Press <Q> to choose the Quit option from the main menu. Execution of this menu option terminates the menu driven macro routines.



The user can now freely move about the worksheet. To return to the menu options press and hold down the ALT key while at the same time pressing the A key (command ALT A).

EXIT Menu Option

Press <E> to choose the EXIT option from the FEEDLOT main menu.



The program is terminated when the Exit option is chosen. The program first asks for a file name to use when saving. If you want to save the file with the same name that was loaded, or if you do not want to save the file, type <RETURN>. The program will then ask if you want to cancel (leave the existing file intact) or replace the file. If cancel is chosen then the file is not saved. Telling the computer to <REPLACE> will replace (update) the file on disk. The user can also type a new file name when prompted for the file name after entering the EXIT option from the main menu. This will leave the original file as it was when loaded and save a new file with a different name. Press <Y> to exit the

program. If you do not wish to exit press <N>, followed by Alt-A, to re-enter the program.

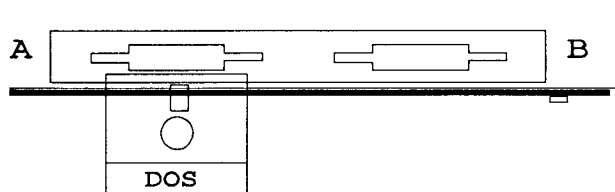
SECTION 3 Instructions For The Compiled Program

If you do not have LOTUS 1-2-3® software you can use the compiled version of the FEEDLOT program. This version of the program was compiled using the Baler® compiler. It allows spreadsheet programs to be used without having additional software. The program looks and operates the same as the LOTUS 1-2-3® spreadsheet version.

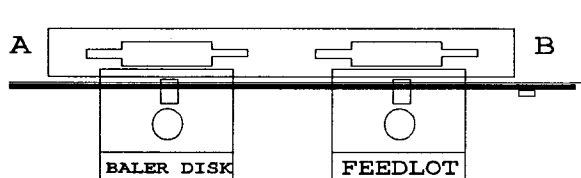
5¼ Disk System

To use the compiled program with two 5¼ inch disks:

1. Boot the computer with DOS. Then, remove the DOS disk.



2. Insert the Baler® execution disk in Drive A. Insert the FEEDLOT program disk in Drive B.



3. Type A: to get the A prompt (i.e. A>) and then type

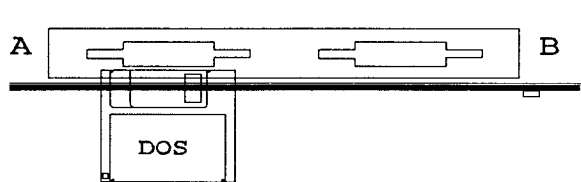
A>RUN B:FEEDLOT

After pressing <RETURN> the compiled version of the FEEDLOT program should be executed. The menu options are the same as those described in Section 2 and you should read this section for a detailed discussion of program options.

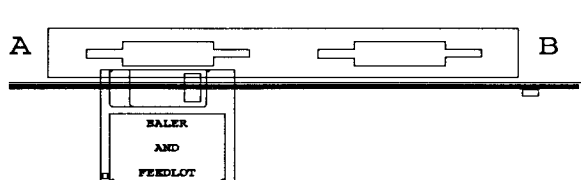
3½ Disk System

To use the compiled program with one 3½ inch disk:

1. Boot the computer with DOS. Then, remove the DOS disk.



2. Insert the program disk in Drive A.



3. Type A: to get the A prompt (i.e. A>) and then type

A>RUN A:FEEDLOT

After pressing <RETURN> the compiled version of the FEEDLOT program should be executed. The menu options are the same as those described in Section 2 and you should read this section for a detailed discussion of program menus and options. Note that the menu will appear vertically in the compiled version of the program.

SECTION 4 Problems and Solutions

Common User Errors

This section attempts to solve some of the most common problems that users of the FEEDLOT program encounter.

Problem: The program will not load on the computer.
Solution: Check to see that your computer is IBM compatible, has at least 512K of memory, and that you followed the correct loading procedures.

Problem: The program will not exit different sections of the program.

Solution: To get back to the Main Menu from any part of the program press the <RETURN> key once. Some computers run slower than others so it is important to be patient and allow the computer time to do what is asked of it.

Problem: I press the <RETURN> key but nothing happens.

Solution: You may not be in the macro mode. Check the bottom of the computer screen to see if the letters **CMD** appear. If **CMD** does not appear, press ALT-A, the ALT key and A key at the same time. This will put you back to the beginning of the program.

Problem: Percentages do not enter correctly.

Solution: All Percentages must be entered as decimals. For example 12% interest would be entered as 0.12.

Problem: The computer BEEPED and is flashing "Protected Cell".

Solution: You have tried to enter data in a protected cell. Press the Esc key one time, then press ALT-A.

Problem: I had to press ALT-A and re-enter the program, do I have to put my data in again?

Solution: Once you have entered your data it will be there until you change it, or leave the program. Remember to save the spreadsheet if you want to do additional analysis with the specified data at a later date.

Problem: The program will not print.

Solution: Check to see if the printer is a parallel printer, that the printer is on and is on-line. The program print macro may not be compatible with your printer. In this case, exit the macro routine using the Quit option and print the desired range using the LOTUS 1-2-3® print commands with a proper setup for your printer.

Problem: I pressed the PRINT, SAVE, or EXIT key by mistake.

Solution: Press the Esc key until **Ready** appears in the upper right hand corner of the screen. Then press ALT-A to get back into the menu.

LITERATURE CITED

Texas Cattle Feeders Association/Texas Agricultural Extension Service. 1990. *Retained ownership of stocker & feeder cattle*. Texas Agricultural Extension Service, Amarillo, TX.

McNeill, J.W. 1990. *Some factors affecting performance of cattle in feedyards*. Factsheet compiled for the Research Committee of Texas Cattle Feeders Association. Amarillo, TX.

APPENDIX A

Input Parameter Interpretation and Explanation

The following glossary of terms used in the input section is listed in the order that it appears in the input section of the program.

Feedlot Ration Charge. The dollar amount on a per ton fed basis that the feedlot charges for the ration. This charge usually includes the feedlot's feed cost, labor, profits, operating expenses and fixed costs. Inquire as to what costs are included in this ration charge.

Feed Conversion Rates. The amount of the feedlot ration required to produce one pound of gain. The conversion rate will vary depending on type and breed of cattle, cattle condition, season, weather conditions and the ration fed. An experienced feedlot operator, or a producer that has fed large numbers of cattle, will be able to estimate an acceptable conversion rate. The actual conversion rate will not be known in advance.

Daily Weight Gain. Average Daily Gain (ADG), or the average number of pounds that the animal is expected to gain per day over the feeding period.

Number of Days on Feed. The number of days that it will take to increase the animal weight from the beginning weight to the ending weight, given the specified average daily gain. This number is calculated based on other user inputs and cannot be changed in the program. The calculation considers a shrinkage to account for any loss of weight during transport to the feedlot.

Daily Yardage Charge. In addition to (or in replace of) the ration charge, a feedlot may charge for each head in the feedlot (\$/head/day).

Processing Charge. The charge for processing the animals when they arrive. Processing charges may include ear tags, dehorning, sorting, and moving the animals to pens.

Pregnancy Check/Abortion. Amount charged to pregnancy check and abort heifer calves entering the feedlot.

Veterinary, Drugs and Supplies. The cost of veterinary work, vaccines, or implants required during the feeding period.

Hauling Costs. The estimated cost to transport the animals to the feedlot for custom feeding (\$/head).

Miscellaneous. Additional costs that are not included in other parts of the input section are entered in this miscellaneous category. Brand inspection and fees for the beef check off program are examples of costs included under this category.

Interest Rate. The rate of interest that will be used to compute an interest charge for animal purchase and other expenses.

Beginning Weight. The weight of the animal before it is transported to the feedlot.

Ending Weight. The desired animal weight at the end of the feeding period.

Purchase Price. The price in dollars per hundred pounds (\$/cwt) that will be paid (or could be received) for the animal going into the feedlot. If the animal has been raised on your ranch and will not be purchased then this cost will reflect an opportunity cost, the value you give up now in order to retain ownership of the animal through the feedlot.

Sale Price. The price in dollars per hundred pounds (\$/cwt) that the animal is expected to sell for when finished.

Death Loss. The percentage of animals that are expected to die in transport or while in the feedlot.

Shrink. The percentage that the animal is expected to shrink in weight during transport to the feedlot.

Number of Cattle to be Fed. The number of head to be put in the feedlot.

APPENDIX B

Explanation and Result Interpretation

The following list provides an interpretation of the model output as listed on the Cost-Return Projection page.

Feedlot Ration Charge. The ration charge for the total feeding period on a dollar per head basis.

Feedlot Ration Charge per Day. The ration charge on a per head per day basis.

Yardage Charge. The yardage charge for the total feeding period on a dollar per head basis.

Processing Charge. The charge for processing the animals when they arrive (\$/head).

Pregnancy Check/Abortion. Amount charged to pregnancy check and abort heifer calves entering the feedlot (\$/head).

Veterinary, Drugs and Supplies. The cost of veterinary work, vaccines, or implants required during the feeding period (\$/head).

Hauling Costs. The estimated cost to transport the animals to the feedlot for custom feeding (\$/head).

Miscellaneous. Miscellaneous expenses (\$/head).

Interest Charge. Interest on the value of livestock entering the feedlot and half of the other variable expenses. Interest expense is charged for the total feeding period. This cost would be an opportunity cost if funds are not borrowed and owned capital is used to make the investment.

Total Variable Costs. The total of all costs except animal purchase and death loss.

Livestock Sales. The per head value of the cattle leaving the feedlot.

Purchase Cost of Animals. The per head purchase cost of the cattle entering the feedlot, or the amount the cattle could have been sold for if they had not gone into the feedlot.

Death Loss. The value of livestock that die and are not sold.

Gross Returns Per Head. Gross returns per head less the cost of purchasing the animal and death loss.

Net Returns Over Total Variable Costs. Gross returns minus total variable costs (\$/head). This can be interpreted as the expected net return (or Net Loss if negative) from retained ownership, given the specified costs and prices.

Total Net Return or Loss. Net returns over total costs multiplied by the number of head entering the feedlot.

Break-even Selling Price. Given the purchase price, the breakeven selling price is the price (\$/cwt) that the animal would have to sell for to cover total variable costs.

Break-even Purchase Price. Given the selling price, the breakeven purchase price is the price (\$/cwt) that the animal would have to be purchased for to cover total variable costs.

Feed Costs. Ration cost per cwt of gain.

Non-feed Costs. Non-feed costs per cwt of gain.

Total Costs. Total costs per cwt of gain.

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