



Current Report

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VISACALC[®] PROGRAM TO ESTIMATE FEEDLOT COST OF GAIN OSU FLCALC

OSU
Collection

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The following describes the equations and methods for estimating the performance and financial aspects of cattle feeding using an electronic spread sheet program such as Enhanced Visacalc[®] or similar program with "if", choose, and iserror statements. Other OSU developed programs are available for the simpler versions of spread sheets. To use this or other such programs the prospective user must purchase the spread sheet software for his computer and be familiar with the methods of operation of the program.

The net energy equations have been used for years to predict feedlot gain with a high degree of accuracy. To use this program the user needs to know how much dry matter per day the cattle will consume for the feeding period. However, most custom feedlots can help cattle owners estimate feed intake. Others will estimate feed intake from their past feeding experience. The program serves as a double check on your feed values, in that if you set feed too high the cattle's calculated gain will be too high, and conversely if set too low. Data are expressed on a pay to pay basis.

The usual cattle and financial information are required, along with the average costs, moisture content and net energy values of the feedlot ration. Note the format of the program in Table 1. Headings followed by (*) just to the right of the data field indicate a place for your data. Numbers which are the result of calculation do not have this marking. Experienced users of electronic spread sheets know that you should not enter a value over a calculated number because the equation will be erased. The inputs that are required are listed below, in the same order that they appear on the screen of the spread sheet.

1. Cattle cost per CWT in dollars delivered to the lot.
2. Purchase weight in pounds (this program works pay to pay)
3. Days to be fed (days on feed)
4. Sex, steers (1) or heifers (2); no other choices
5. Feed cost per ton (as is basis)
6. Dry matter content of ration (%)
7. Expected selling price of the cattle at market time.
8. Equity in the cattle (\$) per head (Interest free money).
9. Cattle finance rate (%)
10. Medical cost per head in dollars.
11. Estimated death loss in percent.
12. Yardage cost in dollars if any.

13. Estimated feed intake (average pounds of dry matter per day)
14. Your estimate of the cattle daily gain (pounds per day).
15. Interest cost on the operating capital (%).
16. *** OPTIONAL INPUTS***
 - Ration NEM (entered as megcal per 100 pounds)
 - Ration NEG (entered as megcal per 100 pounds)
 - Both of these items should be on a dry matter basis.

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This program is designed for the user to enter data on a trial basis, i.e. make an entry and see what impact it has on the cost of gain or profitability. Note the very important notice at the top of Table 1. When first loaded from disk, ERROR will appear at a number of locations. Press shift ! and the error will go away, but the answer will not likely be correct at this time. Enter data on NEM, NEG, SEX, DAILY FEED DRY MATTER, PURCHASE WEIGHT, and DAYS ON FEED first, then the financial data. After the last of the items spelled out in capitals in the last sentence are entered, press shift ! at least 5 times or until the calculated "MEAN FEEDING WT" does not change on recalculation (shift !). There are three ways to look at the cattle evaluation at the bottom of the sheet: (1) those based on your estimate of gain, and calculated from your estimate of gain and feed intake, (2) those based on the Net Energy values, and your estimate of daily feed intake, and (3) the average of the previous two values (called mean values).

Table 2 shows the working part of the spread sheet with the column headings and the rows numbered to correspond to the program listing which follows in Appendix 1. The headings have been stripped out of the program listing. If you have to enter this program from key board it is suggested that you first type all headings and labels, the data second and then use the listing for the equations.

Wherever possible it may be feasible and desirable to receive this program on disk or via modem. Copies of OSU Animal Science developed programs are available from: Extension Animal Science Department, 201 Animal Science Building, Oklahoma State University, Stillwater, Ok 74078. Programs on 8 inch data disks for TRS-80 are available at a cost of \$25 each for the disk and return postage. Additional programs on the same disk cost \$20 each.

This program may be custom tailored to your needs by using the insert command and adding your rows between rows 25 and 26. If properly done, data entered in column D (i.e. trucking expense) may be transferred to column F by the +Dn command (n= row number). Row H can be completed by replicating the equation above the insertion. When asked if the values are repetitive (R) or non-repetitive (N), the value that you have just inserted is repetitive (R) and the number of days on feed (D15) is non-repetitive (N).

Note in the listing that some very critical data and equations are stored in column I (off of the sheet) on an 80 column screen. These are the the net energy equations and the IF and ISERROR statements necessary to start this program as it comes up from disk. When making your modifications to the program be sure and not damage or remove these statements. It is wise to make a re-named working copy of the program before making modifications.

Always do at least 5 recalculations (shift !) to be sure that all cells are updated and that further recalculation is not causing values to

change. This is unique to this program in that the net energy calculations are using the mean feeding weight. Mean feeding weight must change with a change in average daily gain, initial weight, or days on feed.

Table 1. Actual print out of OSU FLCALC program

IMPORTANT !! THIS PROGRAM USES A MANUAL ITERATIVE TECHNIQUE. PRESS SHIFT ! AT LEAST 5 TIMES AFTER WEIGHT, FEED, OR ENERGY VALUES ARE CHANGED OR UNTIL "MEAN FEEDING WEIGHT" DOES NOT CHANGE ANY ON RECALCULATION.

VALUES MARKED (*) MAY BE CHANGED OTHERS ARE THE RESULT OF CALCULATION AND SHOULD NOT BE CHANGED OR EQUATIONS WILL BE ERASED.

(place cursor at A10 and print to H70)

OSU COST OF GAIN CALCULATOR (STEERS OR HEIFERS)

CATTLE COST \$ PER CWT.	*	68.00	***OPTIONAL INPUTS***	
PURCHASE WEIGHT LBS.	*	700	RATION NE _m	* 92
DAYS ON FEED	*	135	RATION NE _g	* 61
SEX; STEERS=1, HEIFERS=2	*	1	(AVE. ENERGY FOR FEED PERIOD)	
FEED COST PER TON 'as is'	*	121.00	*****	
RATION DRY MATTER, (%)	*	87.00	FEED COST DRY BASIS (TON	139.08
SELLING PRICE (\$) PER CWT.*	*	65.35	MEAN FEEDING WT	899.16

	(INPUTS)	TOTAL COST	COST/ DAY (\$)
EQUITY IN (\$) PER HEAD	* 75.00		
CATTLE INTEREST RATE (%)	* 13.00	19.55	0.14
MEDICAL COST PER HEAD (\$)	* 7.00	7.00	0.05
DEATH LOSS (%)	* 0.75	3.62	0.03
YARDAGE COST PER DAY (\$)	* 0.05	6.75	0.05
DAILY FEED DRY MATTER	* 20.00		
EST DAILY GAIN (PAY)	* 2.75		
OPERATING CAPITAL INTEREST*	13.00	4.91	0.04

FEED COST / HEAD	187.76	1.39
NON-FEED TOTAL	41.83	.31
TOTAL COST	229.59	1.70

	YOUR VALUES	***USING*** NET ENERGY VALUES	MEAN VALUES
DAILY GAIN (LBS)	2.75	2.95	2.85
FEED/GAIN	7.27	6.78	7.03
COST OF GAIN FEEDLOT (\$)	54.28	50.59	52.43
COST OF GAIN TOTAL (\$)	61.84	57.64	59.74
SELLING WEIGHT (LBS.)	1071.25	1098.32	1084.79
TOTAL DOLLARS RETURNED	700.06	717.75	708.91
TOTAL LESS CATTLE COST (\$)	224.06	241.75	232.91
BREAK-EVEN SELLING PRICE (\$)	65.87	64.24	65.05
PROFIT OR LOSS PER HEAD (\$)	-5.53	12.16	3.32
RETURN ON EQUITY INVESTED %	-19.93	43.84	11.95

DEVELOPED BY DONALD GILL, OKLAHOMA STATE UNIVERSITY, 1983

File name is FLCALC

Table 2 Print out of the working part of OSU FLCALC program with column headings and rows in place.

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10>[ A ][ B ][ C ][ D ][ E ][ F ][ G ][ H ][ I ]
11>OSU COST OF GAIN CALCULATOR (STEERS OR HEIFERS)
12>-----
13>CATTLE COST $ PER CWT. * 68.00 ***OPTIONAL INPUTS***
14>PURCHASE WEIGHT LBS. * 700 RATION NEm * 92
15>DAYS ON FEED * 135 RATION NEg * 61
16>SEX; STEERS=1, HEIFERS=2 * 1 (AVE. ENERGY FOR FEED PERIOD)
17>FEED COST PER TON 'as is' * 121.00 *****
18>RATION DRY MATTER, (%) * 87.00 FEED COST DRY BASIS (TON 139.08 75
19>SELLING PRICE ($) PER CWT.* 65.35 MEAN FEEDING WT 899.16 164.2018
20>----- FALSE
21> (INPUTS) TOTAL COST COST/ DAY ($) 164.2018
22>EQUITY IN ($) PER HEAD * 75.00
23>CATTLE INTEREST RATE (%) * 13.00 19.55 0.14
24>MEDICAL COST PER HEAD ($) * 7.00 7.00 0.05
25>DEATH LOSS (%) * 0.75 3.62 0.03
26>YARDAGE COST PER DAY ($) * 0.05 6.75 0.05
27>DAILY FEED DRY MATTER * 20.00 12.32535
28>EST DAILY GAIN (PAY) * 2.75 187.76
29>OPERATING CAPITAL INTEREST* 13.00 4.91 0.04 2.95
30>----- 2.58
31> FEED COST / HEAD 187.76 1.39
32> NON-FEED TOTAL 41.83 .31
33> TOTAL COST 229.59 1.70
34>-----
35> YOUR ***USING*** MEAN
36> VALUES NET ENERGY VALUES VALUES
37>DAILY GAIN (LBS) 2.75 2.95 2.85
38>FEED/GAIN 7.27 6.78 7.03
39>COST OF GAIN FEEDLOT ($) 54.28 50.59 52.43
40>COST OF GAIN TOTAL ($) 61.84 57.64 59.74
41>SELLING WEIGHT (LBS.) 1071.25 1098.32 1084.79
42>TOTAL DOLLARS RETURNED 700.06 717.75 708.91
43>TOTAL LESS CATTLE COST ($) 224.06 241.75 232.91
44>BREAK-EVEN SELLING PRICE ($) 65.87 64.24 65.05
45>PROFIT OR LOSS PER HEAD ($) -5.53 12.16 3.32
46>RETURN ON EQUITY INVESTED % -19.93 43.84 11.95
47>-----
48>
49>DEVELOPED BY DONALD GILL, OKLAHOMA STATE UNIVERSITY, 1983
50>
51>file name FLCALC (STEERS OR HEIFERS)

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Appendix 1. Listing of program statements for OSU FLCALC with heading
Statements deleted.

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>H46:/F$@AVERAGE(D46...F46
>F46:/F$+F45/D22*100/(D15/365)
>D46:/F$((D45/D22*100)/(D15/365))
>H45:/F$@AVERAGE(D45...F45
>F45:/F$+F42-(D13*D14/100)-F33
>D45:/F$+D42-(D13*D14/100)-F33
>H44:/F$@AVERAGE(D44...F44
>F44:/F$+D13*D14/100+F33/F41*100
>D44:/F$(D13*D14/100)+F33/D41*100
>H43:/F$@AVERAGE(D43...F43
>F43:/F$+F42-(D13*D14/100)
>D43:/F$+D42-(D13*D14/100)
>H42:/F$@AVERAGE(D42...F42
>F42:/F$+D19*(F41/100)
>D42:/F$+D19*D41/100
>H41:/F$@AVERAGE(D41...F41
>F41:/F$+D14+(D15*F37)
>D41:/F$+D14+(D15*D28)
>H40:/F$@AVERAGE(D40...F40
>F40:/F$+F33/(D15*F37)*100
>D40:/F$(F33/(D15*D28)*100)
>H39:/F$@AVERAGE(D39...F39
>F39:/F$(F25+F26+F31)/(D15*F37)*100
>D39:/F$(F25+F26+F31)/(D15*D28)*100
>H38:/F$@AVERAGE(D38...F38
>F38:/F$+D27/F37
>D38:/F$+D27/D28
>H37:/F$@AVERAGE(D37...F37
>F37:/F$@CHOOSE(D16,I29,I30)
>D37:+D28
>H33:/F$(F33/D15)
>F33:/F$@SUM(F23...F31)
>H32:/F$+F32/D15
>F32:/F$+F33-F31
>H31:/F$+F31/D15
>F31:/F$+I28
>I30:/F$((((((I27*H15/100)*.00576)/I21)+.0001974)^.5)-.01405)/.00288
>I29:/F$((((((I27*H15/100)*.003112)/I21)+.00017474)^.5)-.01322)/.001556
>H29:/F$+F29/D15
>F29:/F$@SUM(F25...F26)+I28*(D29/100)*(D15/720)
>D29:/F$13
>I28:/F$(H18/2000*D27)*D15
>D28:/F$2.75
>I27:(D27-(I21*.043/(H14*.01))
>D27:/F$20
>H26:/F$+F26/D15
>F26:/F$+D15*D26
>D26:/F$.05
>H25:/F$+F25/D15
>F25:/F$+D25
>D25:/F$7
>H24:/F$+F24/D15
>F24:/F$(D13*D14/100)+D25*(D24/100)
>D24:/F$.75

```

>H23:/F\$+F23/D15
>F23:/F\$(D13*D14/100)-D22*(D23/100)*(D15/360)
>D23:/F\$13
>D22:/F\$75
>I21:@IF(I20,I18,I19
>I20:@ISERROR(H19
>I19:+H19^.75
>H19:/F\$(F41-D14/2)+D14
>D19:/F\$65.35
>I18:75
>H18:/F\$+D17/(D18/100)
>D18:/F\$87
>D17:/F\$121
>D16:1
>H15:61
>D15:135
>H14:92
>D14:/FG700
>D13:/F\$68
/W1
/GOR
/GRA
/GC9
/X>A1:>A1:

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