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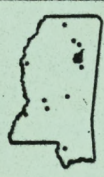
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# **GRAZER**

## **A Microcomputer Program For Wintergrazing Evaluation**

**David H. Laughlin**



**MAFES**

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## GRAZER

### A Microcomputer Program For Wintergrazing Evaluation

#### Introduction

Wintergrazing of calves offers a potential for increased profits to a large segment of Mississippi cattle producers. Cow-calf producers often have the option of maintaining ownership of their calves at weaning by carrying them through a wintergrazing program to heavier weights. Other Mississippi cattlemen deal partially or exclusively with purchased calves in grazing programs. In any case, increasing production costs and changing cattle prices make it increasingly necessary for producers to carefully investigate the potential for economic gains or losses of wintergrazing alternatives.

In year to year production, i.e. the short-run, the profitability of wintergrazing calves is impacted by: (1) purchase and sale price of calves (2) cost of the winter pasture (3) interest rate on borrowed funds (4) weather and its effects on pasture growth and cattle gains, and (5) costs of supplemental feeds and other input items. Some of these items are much easier to project than others, e.g., a producer buying calves in October for wintergrazing usually finds the purchase price of calves in the near term easier to project than the sale price nine months in the future after the grazing period. Thus, the cattle producer must rely heavily on his experience, knowledge of current production costs and expectations for the future to make best estimates of each of these items and subsequently make decisions about whether or not to wintergraze calves.



The microcomputer program described herein (GRAZER) provides a basic structure for wintergrazing analysis. The program makes appropriate calculations for estimating the profitability of wintergrazing calves based on user defined parameters. GRAZER offers a convenient, comprehensive and timely means of assembling information pertaining to wintergrazing alternatives in order to more accurately estimate short run costs and returns potential. GRAZER provides a short-run analysis in that it considers only variable (or direct) costs associated with wintergrazing. Land, management, investment in fixed resources, and overhead costs are not considered. In the longer term, certainly these items are important, however, they do not affect the short term decision and are not considered in this analysis. Use of methodology described herein should allow producers to more accurately appraise their individual situations in a timely fashion and thereby be better informed decision makers.

The remainder of this document includes: (1) a general discussion and overview of the program, (2) an example run stream for program operation and a brief discussion of the GRAZER output, and (3) a note about program operation.

#### Program Overview

After prompting for the identification of the user for report printouts, GRAZER will display the last pasture budget prepared by the program. In the case of a first time run, the budget contains stored inputs and costs for items for a generalized wintergrazing situation used in the development of GRAZER. The user is then prompted to change items within the pasture budget to fit his particular situation. The updated pasture budget information will be displayed upon request at any



time during the update process. Once the pasture budget is completed to the users' satisfaction it is inserted into a file for either later use in the current run or the next time the program is run. At this point the user may print the completed pasture budget on paper for future reference.

Once the pasture budget has been filed GRAZER will prompt the user for information about the calves to be wintergrazed and proceed to establish some of the parameters for the livestock budget to follow. Input items such as initial cattle weights, purchase price, anticipated pasture stocking rates, expected sale prices, expected average daily gain, etc. are entered at this point. GRAZER will provide several opportunities for the user to change previously entered items.

After all data have been entered, GRAZER will integrate the most current cattle related parameters with pasture costs defined in the latest pasture budget and enter them into the cattle budget. This budget is displayed and the user is prompted for possible changes to these budget items. Items which are dependent on previously entered cattle or pasture information are not changable at this point. Should the user try to correct data previously entered as pasture or cattle data, GRAZER will direct the user to the appropriate data set to be changed. Once this budget has been finalized and all input item changes have been made, GRAZER will optionally display the final cattle budget to screen, paper, or both. This budget includes all of the most current information and indicates the total variable expense/head and estimated net returns above variable expenses. Finally, this budget is stored in a file for later retrieval.



In the last portion of the program, GRAZER provides an opportunity for the user to range the purchase and selling price of calves while holding all other costs constant. The user is prompted to enter the lower and upper purchase and sell price within which he wants to estimate net returns. GRAZER divides this range into 10 increments for both purchase and selling price, and calculates a table of estimated net returns at all combinations of the two incremented purchase and selling prices.<sup>1/</sup> GRAZER also calculates the price for which the producer must sell cattle in order to break even--based on the varying purchase prices, and all other costs constant. This price ranging procedure could be one of the most important tools the producer can use to evaluate his wintergrazing program since it provides a much broader view of the profit potential (with various cattle prices) than does the single budget approach.

Upon completion GRAZER gives the user the opportunity to return to any phase of the process, change desired input data and repeat the process.

#### Example Runstream

GRAZER input items and output reports will be illustrated through an example run found in the Appendix. Input items are entered as the program prompts the user for them. The prompts are designed to be self-explanatory, thus, their explanation is left for Appendix illustration. Throughout the runstream, all of the basic input items are dis-

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<sup>1/</sup> Due to screen size limitations and the simplicity of division by 10, the author elected to begin the range at the lower prices and omit the final price in the incremented price range as evidenced in the Appendix.



played at various times for user inspection and revision. Responses to prompts are underlined in the example given in the Appendix.

As shown in the Appendix, output generally takes three forms (1) the wintergrazing pasture budget, (2) the cattle budget, and (3) the price ranging net returns table. In each case the user is given the option to print, as well as display the final (and any intermediate) budgets.<sup>2/</sup> Upon completion of the pasture and cattle budgets, they are written into files replacing previously stored budgets. This allows an individual to periodically update his budgets and quickly reevaluate his position.

Finally, a note of caution. The budgets prepared within this program are only as good as the information that goes into them. If accurate cost and production data is entered, the subsequent cost and returns information will be accurate. The converse is equally true. Thus, managers and decision makers should strive to provide accurate information in order to make accurate returns projections.

#### GRAZER User's Guide

GRAZER was developed on the Radio Shack Model II<sup>R</sup> microcomputer. Radio Shack Model III<sup>R</sup> versions of GRAZER are available though the output formats have been slightly altered to accommodate the 64 character screen size. The following steps are necessary to begin the use of GRAZER following the initial power-up for the Model II:

---

<sup>2/</sup> In the example given in the Appendix, no budgets were printed since printed output would be repetitious with the display output given.

<sup>R</sup> Trademark







APPENDIX  
Example of GRAZER Runstream

WHAT IS YOUR (OR YOUR FARM) NAME? MY TEST FARM  
MY TEST FARM WINTER PASTURE BUDGET:

ITEM	UNIT	NO. UNITS	\$/UNIT	TOTAL
SEED:				
0 WHEAT	LB.	90.00	0.12	10.80
1 RYEGRASS	LB.	20.00	0.24	4.80
2 OPTIONAL	XXX	0.00	0.00	0.00
3 OPTIONAL	XXX	0.00	0.00	0.00
4 OPTIONAL	XXX	0.00	0.00	0.00
FERTILIZER:				
5 NITROGEN(34-0-0)	CWT.	3.50	10.00	35.00
6 PHOSPHORUS(0-46-0)	CWT.	1.30	12.00	15.60
7 POTASH(0-0-60)	CWT.	1.00	9.20	9.20
8 LIME(SPREAD)	TON	0.33	18.00	5.94
OTHER INPUTS:				
9 TRACTOR & EQUIP.	ACRE	1.00	12.00	12.00
10 LABOR	HR.	1.00	3.35	3.35
11 OPTIONAL	XXX	0.00	0.00	0.00
12 INT.ON.OP.CAP.**	DOL.	96.69	0.10	9.67
TOTAL EXPENSES				\$106.36

\*\* INTEREST RATE SHOULD REFLECT AN 9-MONTH USE RATE  
DO YOU WANT TO MAKE CHANGES IN THIS PASTURE BUDGET (Y OR N)? Y  
WHAT ITEM NUMBER DO YOU WANT TO CHANGE ? 2

CURRENT ITEM NAME UNIT MEASURE NO. UNITS PRICE/UNIT  
==>OPTIONAL XXX 0 0  
WHAT IS THE NEW ITEM NAME (22 CHAR. MAX) (PRESS ENTER IF NOT CHANGED)?

RED CLOVER  
WHAT IS THE NEW UNIT MEASURE (4 CHAR. MAX) (PRESS ENTER IF NOT CHANGED)?

LB.  
WHAT IS THE NEW NUMBER OF UNITS (PRESS ENTER IF NOT CHANGED)? 10  
WHAT IS THE NEW PRICE/UNIT (PRESS ENTER IF NOT CHANGED)? .72 ---  
ARE UNITS AND \$/UNIT CONSISTENT (Y OR N)? Y

ANY MORE CHANGES? (Y OR N)? N  
DO YOU WANT TO SEE THE REVISED PASTURE BUDGET (Y OR N)? Y  
MY TEST FARM WINTER PASTURE BUDGET:

ITEM	UNIT	NO. UNITS	\$/UNIT	TOTAL
SEED:				
0 WHEAT	LB.	90.00	0.12	10.80
1 RYEGRASS	LB.	20.00	0.24	4.80
2 RED CLOVER	LB.	10.00	0.72	7.20
3 OPTIONAL	XXX	0.00	0.00	0.00
4 OPTIONAL	XXX	0.00	0.00	0.00
FERTILIZER:				
5 NITROGEN(34-0-0)	CWT.	3.50	10.00	35.00
6 PHOSPHORUS(0-46-0)	CWT.	1.30	12.00	15.60
7 POTASH(0-0-60)	CWT.	1.00	9.20	9.20
8 LIME(SPREAD)	TON	0.33	18.00	5.94
OTHER INPUTS:				
9 TRACTOR & EQUIP.	ACRE	1.00	12.00	12.00
10 LABOR	HR.	1.00	3.35	3.35
11 OPTIONAL	XXX	0.00	0.00	0.00
12 INT.ON.OP.CAP.**	DOL.	103.89	0.10	10.39
TOTAL EXPENSES				\$114.28

\*\* INTEREST RATE SHOULD REFLECT AN 9-MONTH USE RATE  
DO YOU WANT TO MAKE CHANGES IN THIS PASTURE BUDGET (Y OR N)? N



DO YOU WANT TO PRINT (ON PAPER) THE CURRENT PASTURE BUDGET (Y OR N)? N  
 -----> CATTLE DATA (PER HEAD BASIS) IS NEXT <-----

AVERAGE PURCHASE WEIGHT OF CALVES IS (CWT./HEAD)? 3.85

AVERAGE PURCHASE PRICE IS (\$/CWT.)? 65

AVERAGE STOCKING RATE WILL BE (HEAD/ACRE)? 1.7

EXPECTED SALES PRICE (\$/CWT.)? 60

EXPECTED AVERAGE DAILY GAIN/HEAD (LBS./DAY)? 1.75

TOTAL DAYS IN GRAZING PERIOD ? 180

WHAT % PENCIL (OR EXPECTED) SHRINK AT MARKETING (XZ)? 3

WHAT WILL BE THE MARKETING CHARGE (% OF SALES)? 4

WHAT % DEATH LOSS DO YOU EXPECT (% OF PURCHASE) (XZ)? 2

----->CATTLE INFORMATION ENTERED THUS FAR IS <-----

0	AVERAGE PURCHASE WEIGHT (CWT)	3.85
1	AVERAGE PURCHASE PRICE (\$/CWT)	65.00
2	AVERAGE STOCKING RATE (HEAD/ACRE)	1.70
3	EXPECTED SALES PRICE (\$/CWT)	60.00
4	EXPECTED AVG DAILY GAIN (LBS/DAY)	1.75
5	TOTAL TIME IN GRAZING PERIOD IS(DAYS)	180.00
6	% SHRINK AT MARKETING (% OF FINAL WEIGHT)	3.00
7	MARKETING CHARGE (% OF SALE VALUE)	4.00
8	EXPECTED % DEATH LOSS (% OF PURCHASE)	2.00

DO YOU WANT TO MAKE CHANGES IN THE ABOVE DATA (Y OR N)? N  
 THE PRELIMINARY (PER HEAD) FEEDER CALF BUDGET IS:

NO.	ITEM	UNIT	QUANTITY	\$/UNIT	AMOUNT
-----					
INCOME:					
	FEEDER CALF SALE (INCLUDES 3 % SHRINK)	CWT.	6.79	60.00	407.40
EXPENSES:					
0	FEEDER CALF PURCHASE	CWT.	3.85	65.00	250.25
1	PASTURE (FROM ABOVE)	ACRE	0.59	114.28	67.22
2	DEATH LOSS(%OF PUR.)	DOL.	250.25	0.02	5.01
3	SUPPLEMENTAL FEED	HEAD	0.00	0.00	0.00
4	HAY	CWT.	0.00	0.00	0.00
5	VET MEDICINE	HEAD	1.00	5.00	5.00
6	SALT & MINERALS	HEAD	1.00	0.60	0.60
7	LABOR	HR.	1.00	3.10	3.10
8	MARKETING (% OF SALES)	DOL.	407.40	0.04	16.30
9	INTEREST ON CALF *	DOL.	250.25	0.10	25.03
10	INT.ON OP.CAP.**	DOL.	8.70	0.10	0.87
	TOTAL VARIABLE EXPENSES				\$373.37
	NET RETURN (ABOVE VARIABLE EXPENSES)				\$34.03

\* INTEREST RATE SHOULD REFLECT 9-MONTH USE RATE

\*\*INTEREST RATE SHOULD REFLECT AVERAGE RATE CHARGED ON ITEMS 3-7

STUDY BUDGET! DO YOU WANT TO MAKE CHANGES (Y OR N) ? Y

WHICH DO YOU WANT TO CHANGE: INITIAL PASTURE BUDGET (P); CATTLE INFO (C): OR  
 BUDGET ABOVE (B)(ENTER P,C, OR B)? B

WHAT ITEM NUMBER DO YOU WANT TO CHANGE IN BUDGET ABOVE (0-10)? 3

CURRENT ITEM NAME UNIT MEASURE QUANTITY PRICE/UNIT

--->SUPPLEMENTAL FEED HEAD 0 0



NEW NAME (22 CHAR. MAX) (PRESS ENTER IF NOT CHANGED) ?             
 NEW UNIT MEASURE (4 CHAR. MAX) (PRESS ENTER IF NOT CHANGED) ?             
 WHAT IS THE NEW QUANTITY (PRESS ENTER IF NOT CHANGED) ? 1  
 WHAT IS THE NEW PRICE/UNIT (PRESS ENTER IF NOT CHANGED) ? 5  
 DO YOU WANT TO MAKE ANY MORE CHANGES TO THE BUDGET ABOVE (Y OR N)? N  
 DO YOU WANT TO SEE THE UPDATED FEEDER CALF BUDGET (Y OR N)? Y  
 THE LATEST (PER HEAD) FEEDER CALF BUDGET IS:

NO.	ITEM	UNIT	QUANTITY	\$/UNIT	AMOUNT
INCOME:					
	FEEDER CALF SALE (INCLUDES 3 % SHRINK)	CWT.	6.79	60.00	407.40
EXPENSES:					
0	FEEDER CALF PURCHASE	CWT.	3.85	65.00	250.25
1	PASTURE (FROM ABOVE)	ACRE	0.59	114.28	67.22
2	DEATH LOSS(%OF PUR.)	DOL.	250.25	0.02	5.01
3	SUPPLEMENTAL FEED	HEAD	1.00	5.00	5.00
4	HAY	CWT.	0.00	0.00	0.00
5	VET MEDICINE	HEAD	1.00	5.00	5.00
6	SALT & MINERALS	HEAD	1.00	0.60	0.60
7	LABOR	HR.	1.00	3.10	3.10
8	MARKETING (% OF SALES)	DOL.	407.40	0.04	16.30
9	INTEREST ON CALF *	DOL.	250.25	0.10	25.03
10	INT.ON OP.CAP.**	DOL.	13.70	0.10	1.37
TOTAL VARIABLE EXPENSES					\$378.87
NET RETURN (ABOVE VARIABLE EXPENSES)					\$28.53

\* INTEREST RATE SHOULD REFLECT 9-MONTH USE RATE  
 \*\*INTEREST RATE SHOULD REFLECT AVERAGE RATE CHARGED ON ITEMS 3-7  
 STUDY BUDGET! DO YOU WANT TO MAKE CHANGES (Y OR N) ? N  
 DO YOU WANT TO PRINT (ON PAPER) THE LATEST CATTLE BUDGET (Y OR N)? Y  
 THE LATEST (PER HEAD) FEEDER CALF BUDGET FOR MY TEST FARM IS

NO.	ITEM	UNIT	QUANTITY	\$/UNIT	AMOUNT
INCOME:					
	FEEDER CALF SALE (INCLUDES 3 % SHRINK)	CWT.	6.79	60.00	407.40
EXPENSES:					
0	FEEDER CALF PURCHASE	CWT.	3.85	65.00	250.25
1	PASTURE (FROM ABOVE)	ACRE	0.59	114.28	67.22
2	DEATH LOSS(%OF PUR.)	DOL.	250.25	0.02	5.01
3	SUPPLEMENTAL FEED	HEAD	1.00	5.00	5.00
4	HAY	CWT.	0.00	0.00	0.00
5	VET MEDICINE	HEAD	1.00	5.00	5.00
6	SALT & MINERALS	HEAD	1.00	0.60	0.60
7	LABOR	HR.	1.00	3.10	3.10
8	MARKETING (% OF SALES)	DOL.	407.40	0.04	16.30
9	INTEREST ON CALF *	DOL.	250.25	0.10	25.03
10	INT.ON OP.CAP.**	DOL.	13.70	0.10	1.37
TOTAL VARIABLE EXPENSES					\$378.87
NET RETURN (ABOVE VARIABLE EXPENSES)					\$28.53

\* INTEREST RATE SHOULD REFLECT A 9-MONTH USE RATE  
 \*\*INTEREST RATE SHOULD REFLECT AVERAGE RATE CHARGED ON ITEMS 3-7  
 =====> THE BUY/SELL PRICE RANGING ROUTINE IS NEXT <=====

WHAT RANGE DO YOU WANT ON PURCHASE PRICE ?  
 FROM ?\$/CWT. (ENTER THE LOW PRICE OF THE RANGE) ? 50  
 TO ?\$/CWT. (ENTER THE HIGH PRICE OF THE RANGE) ? 70







WHAT RANGE DO YOU WANT ON SELLING PRICE ?

FROM ?\$/CWT. (ENTER THE LOW PRICE OF THE RANGE) ? 50

TO ?\$/CWT. (ENTER THE HIGH PRICE OF THE RANGE) ? 60

PRESS ENTER TO DISPLAY THE BUY/SELL PRICE RANGE NET RETURN TABLE ?

CATTLE INFO FOR THIS RUN IS:

AVERAGE BEGINNING WEIGHT 3.85 CWT.  
 AVERAGE ENDING WEIGHT(SHRUNK) 6.79 CWT.  
 AVERAGE DAILY GAIN 1.75 LB./DAY

RETURNS ABOVE VARIABLE COSTS/HEAD

SELL PRICE  (\$/CWT.)	PURCHASE PRICE (\$/CWT.)									
	60.00	61.00	62.00	63.00	64.00	65.00	66.00	67.00	68.00	69.00
	-DOLLARS-									
50.00	-15.09	-19.40	-23.72	-28.03	-32.34	-36.65	-40.96	-45.28	-49.59	-53.90
51.00	-8.57	-12.89	-17.20	-21.51	-25.82	-30.13	-34.45	-38.76	-43.07	-47.38
52.00	-2.06	-6.37	-10.68	-14.99	-19.30	-23.62	-27.93	-32.24	-36.55	-40.86
53.00	4.46	0.15	-4.16	-8.47	-12.79	-17.10	-21.41	-25.72	-30.03	-34.35
54.00	10.98	6.67	2.36	-1.96	-6.27	-10.58	-14.89	-19.20	-23.52	-27.83
55.00	17.50	13.19	8.88	4.56	0.25	-4.06	-8.37	-12.68	-17.00	-21.31
56.00	24.02	19.71	15.39	11.08	6.77	2.46	-1.85	-6.17	-10.48	-14.79
57.00	30.54	26.22	21.91	17.60	13.29	8.98	4.66	0.35	-3.96	-8.27
58.00	37.05	32.74	28.43	24.12	19.81	15.49	11.18	6.87	2.56	-1.75
59.00	43.57	39.26	34.95	30.64	26.32	22.01	17.70	13.39	9.08	4.76
	-(\$/CWT.)-									
BREAK EVEN PRICE	52.32	52.98	53.64	54.30	54.96	55.62	56.28	56.95	57.61	58.27

DO YOU WANT TO PRINT (ON PAPER) THE NET RETURN PRICE RANGE TABLE (Y OR N)? N

DO YOU WANT TO MAKE ANOTHER RUN (Y OR N)? N



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