

Choosing Turkey Rations

Some Economic Guides



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Summarizing What's Inside . . .

Two methods for selecting the most efficient grain ration for market turkeys were developed recently by the Oklahoma Agricultural Experiment Station as a result of a feeding test using White Holland and Broad Breasted Bronze turkeys.

The two methods for selecting the best grain ration are:

- The individual budget
- The choice guide

Convenient budget forms for using the first method are included in this circular. They will assist the turkey producer in selecting the most economic grain as based on information from his own experience or from the Experiment Station feeding test data.

The general choice guide is a table of values for alternative grains when milo is priced at various levels. This table of values is included in the back of the circular.

Other information obtained from this feeding test was the number of birds that must be weighed in order to estimate the average weight of a flock of turkeys within prescribed accuracy limits. Also, "break-even" prices (the price necessary to cover the feed cost during an additional feeding period) were computed. Tables for finding average flock weights and break-even prices are included in the back of this publication.

All the above methods are outlined and their use is explained in the text.

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The Problem Investigated

The ration fed to market turkeys in Oklahoma during the growing and finishing period usually consists of a grower mash and whole grain or a mixture of whole grains. The choice of the grain or grains to be used depends upon availability, cost, and relative nutritive value of the alternative grains. In Oklahoma, milos and kafirs have in recent years been in abundant supply and priced lower per pound than corn. Similarly, there is usually an abundant supply of oats, and this crop is priced low during the late summer and fall months.

Since feed is by far the largest single item of cost in producing market turkeys, the selection of the ration which is most efficient from the nutritional and economic standpoint is one of the more important management decisions facing the market turkey producer. Regardless of whether the producer buys grain or produces it on his own farm, it is important that he consider the alternative rations available to him and be aware of the economic consequences of selecting one grain over another. In certain cases it may be more profitable for a farmer to grow one grain for market and buy another for his turkey enterprise.

In order to make an intelligent selection of the grain or combination of grains best suited for use in turkey rations in any given supply and price situation, economic guides for a quick and accurate evaluation had to be established.

The data on feed consumption and weight gains which were needed in developing such economic guides were obtained in a feeding test at the Oklahoma Agricultural Experiment Station using White Holland and Broad Breasted Bronze turkeys.*

* For a detailed account of this feeding test, see Okla. Agri. Exp. Sta. Technical Bulletin No. T-64, "Developing Economic Guides for Choosing Between Rations in Market Turkey Production," by Rollin H. Thayer, George W. Newell, Kenneth E. Dunkelgod, James S. Plaxico and George G. Judge.

The production data were analyzed and two methods of selecting grain or grain combinations were developed. One method was that of the individual budget, which permits the use of either experimental or producer feed consumption and weight gain data, along with prices, in making an economic choice of rations. The other method was a general choice guide, using experimental data along with certain sets of prices to aid in ration selection. Both methods are described in detail below. Regardless of whether the budget or the choice guide method is used, prices which reflect the alternatives of the individual turkey grower should be used.

The data obtained in the economic analysis also provided the basis for methods which could be used for estimating the weight of a flock of turkeys and the optimum time at which they should be marketed.

All methods are outlined and their use is explained in this circular.

Methods of Selecting Grain or Grain Combinations

Individual Budget to Select the Grain Ration

The factors which must be considered in the individual budget are the price of mash, the price of the different grains, weight gains and feed requirements for the various rations. Using the data in Table 1, or data from actual farm feeding records, individual budgets may be set up as an aid in selecting the most profitable grain to feed.

A sample budget form is shown in Table 2. This, or a similar form, may be used by producers to make such choices. For example, assume that a producer has home produced oats which he can sell for 70 cents per bushel (2.2 cents per pound), and he can buy milo for \$1.90 per cwt. (1.9 cents per pound), and mash for \$4.00 per cwt. (4.0 cents per pound). His turkeys are now between 23 and 27 weeks of age. The amount of milo or oats which will be required per pound of gain during this period is obtained from Table 1. This information is assembled in a form similar to that presented in Table 2 and the necessary computations are made.

The resulting estimates (Table 3) indicate a higher cost using the oats ration (cost of 22.35 cents per pound of gain for oats as compared to 16.84 cents for milo). Thus, it would be more profitable to sell the oats and buy milo to feed turkeys if these are the only two

TABLE 1.—Weight Gain and Feed Requirements by Ration and Period. (Average of Hens and Toms, Oklahoma 1955¹)

Ration	Weight Gain	Feed Required for Period		Feed Required per Lb. Gain	
		Mash	Grain	Mash	Grain
13 to 17th Week					
Corn	4.3	13.25	3.0	3.08	.697
Oats	4.1	12.3	3.75	2.96	.900
Milo	4.5	11.3	3.0	2.67	.650
80% Corn, 20% Oats	4.3	12.4	2.75	2.88	.639
80% Milo, 20% Oats	4.25	12.35	3.0	2.94	.714
18 to 22nd Week					
Corn	4.3	12.9	7.75	2.96	1.78
Oats	4.1	12.95	9.0	3.20	2.22
Milo	4.5	11.25	9.25	2.72	2.05
80% Corn, 20% Oats	4.3	12.8	8.05	3.20	2.01
80% Milo, 20% Oats	4.25	11.2	9.65	2.60	2.24
23 to 27th Week					
Corn	4.3	11.7	14.25	2.75	3.35
Oats	4.1	15.8	13.5	3.80	3.25
Milo	4.5	11.6	15.55	2.57	3.45
80% Corn, 20% Oats	4.3	12.65	15.25	2.94	3.55
80% Milo, 20% Oats	4.25	10.25	16.85	2.38	3.91
28 to 32nd Week					
Corn	4.3	11.9	18.55	2.73	4.26
Oats	4.1	18.3	16.75	4.46	4.08
Milo	4.5	11.25	21.05	2.5	4.67
80% Corn, 20% Oats	4.3	13.2	19.2	3.03	4.41
80% Milo, 20% Oats	4.25	9.75	22.1	2.32	5.26

¹ The data are adjusted for weekly variations in gains attributable to random factors such as weather and weigh time.

alternatives available. However, the producer in question should also consider the alternative of mixing his home grown oats with milo and/or corn and similar budgets should be prepared.

Choice Guide to Select the Grain Ration

Using the feed and gain data from the experimental rations, information has been developed which facilitates the choice of a grain to feed market turkeys over each of four time periods.

Milo is generally available in most sections of Oklahoma. Thus, for the table of general choice guides, the value of other grains at selected milo-mash prices has been computed (i.e., what you could afford to pay for each of the grains to make it equally profitable to milo). These estimates are presented in Table 4.

As an example, assume that a producer can buy milo for \$2.25 per cwt. and mash is priced at \$1.00 per cwt. (Table 4). Then during the

TABLE 2.—Sample Budget to be Used as an Aid in Selecting the Optimum Ration for Market Turkeys.

	Ration			Ration		
	Lbs. required per lb. gain	Price (cents)	Cost (cents)	Lbs. required per lb. gain	Price (cents)	Cost (cents)
Grain	-----	-----	-----	-----	-----	-----
Mash	-----	-----	-----	-----	-----	-----
Total			-----			-----

TABLE 3.—Budget to Decide Between Oats and Milo for a Market Turkey Ration, 23-27 Week.

Input	Ration 1—Milo and Mash			Ration 2—Oats and Mash		
	Lbs. required per lb. gain	Price (cents)	Cost (cents)	Lbs. required per lb. gain	Price (cents)	Cost (cents)
Grain	3.45	1.9	6.56	3.25	2.2	7.15
Mash	2.57	4.0	10.28	3.80	4.0	15.20
Total			16.84			22.35

13-17 week period oats would be worth \$0.33 per cwt., corn would have a negative value, the corn-oats mix would be worth \$0.97 per cwt., and the milo-oats mix would be worth \$0.54 per cwt. In similar fashion during the 18-22 week period with milo at \$2.25 per cwt. and mash at \$1.00 per cwt., oats, corn, corn-oats, and milo-oats are worth \$1.23, \$2.04, \$1.35, and \$2.29 per cwt., respectively, for feeding market turkeys.

If these alternative feeds are priced at the exact levels given in the table, costs would be identical regardless of the ration selected. If each of the four alternative grains is priced higher than the figure given in the table, then milo is the most economical grain.

On the other hand, if one of the grains is priced lower than the figure taken from the table, this grain or grain mix would be a better buy than milo or any of the other grains considered. If two or more grains are priced lower than the value from the table, each is a better buy than milo and the most economical one is the one priced lowest relative to its feeding value taken from the table.

Therefore, to follow the guides presented in Table 4 the producer: (1) determines the price to himself for milo and mash, (2) selects the milo-mash price from the table which most nearly approximates his own prices, (3) reads the values of the alternative grain from the table for the period under consideration, and (4) selects the grain which

TABLE 4.—Replacement Value of Oats, Corn, Corn-Oats, and Milo-Oats Substituted for Milo in Feeding Market Turkeys for Given Milo and Mash Prices; by Growth Periods, Oklahoma 1955.

Price of Mash (Dollars)	Milo at 1.50	Milo at 2.25	Milo at 3.00	Milo at 4.00	Milo at 1.50	Milo at 2.25	Milo at 3.00	Milo at 4.00
	13-17 Week				18-22 Week			
	<i>Oats Value/cwt.</i>							
3.00	Nil.	.66	1.20	1.92	.74	1.44	2.14	3.06
3.50	Neg.	.50	1.04	1.77	.64	1.33	2.03	2.95
4.00	Neg.	.33	.88	1.60	.53	1.23	1.92	2.85
4.50	Neg.	.18	.72	1.44	.42	1.12	1.81	2.74
5.50	Neg.	Neg.	.40	1.12	.20	.90	1.59	2.52
	<i>Corn Value/cwt.</i>							
3.00	Neg.	.33	1.04	1.99	1.31	2.19	3.05	4.21
3.50	Neg.	.04	.75	1.70	1.24	2.11	2.98	4.13
4.00	Neg.	Neg.	.45	1.39	1.17	2.04	2.91	4.07
4.50	Neg.	Neg.	.16	1.10	1.11	1.98	2.84	4.00
5.50	Neg.	Neg.	Neg.	.51	.96	1.83	2.70	3.85
	<i>80% Corn-20% Oats Value/cwt.</i>							
3.00	.53	1.30	2.06	3.08	.82	1.59	2.36	3.38
3.50	.38	1.14	1.91	2.92	.70	1.47	2.24	3.26
4.00	.20	.97	1.73	2.75	.58	1.35	2.12	3.14
4.50	.05	.81	1.58	2.59	.46	1.23	2.00	3.02
5.50	Neg.	.48	1.25	2.27	.22	1.00	1.76	2.79
	<i>80% Milo-20% Oats Value/cwt.</i>							
3.00	.23	.92	1.61	2.52	1.54	2.23	2.92	3.84
3.50	.04	.73	1.42	2.34	1.57	2.26	2.95	3.87
4.00	Neg.	.54	1.23	2.14	1.59	2.29	2.97	3.89
4.50	Neg.	.35	1.04	1.96	1.62	2.31	3.00	3.92
5.50	Neg.	Neg.	.66	1.58	1.67	2.37	3.05	3.97

NOTE: To use this table as an aid in selecting the most economic grain:

- (1) Determine the price of milo and mash.
- (2) For the growth period under consideration, read the value of oats, corn, corn and oats, and milo and oats from the table.
- (3) Compare the feeding values of the different feeds to their market prices and select the one whose market value is lowest relative to its feeding value.

Table 4 Cont.

Price of Mash (Dollars)	Milo at 1.50	Milo at 2.25	Milo at 3.00	Milo at 4.00	Milo at 1.50	Milo at 2.25	Milo at 3.00	Milo at 4.00
	23-27 Week				28-32 Week			
	<i>Oats Value/cwt.</i>							
3.00	.46	1.26	2.06	3.12	.28	1.14	2.00	3.14
3.50	.27	1.07	1.87	2.93	.04	.90	1.76	2.90
4.00	.08	.88	1.68	2.74	Neg.	.66	1.52	2.66
4.50	Neg.	.69	1.49	2.56	Neg.	.42	1.28	2.42
5.50	Neg.	.31	1.11	2.18	Neg.	Neg.	.80	1.94
	<i>Corn Value/cwt.</i>							
3.00	1.40	2.17	2.95	3.98	1.48	2.30	3.13	4.23
3.50	1.37	2.15	2.92	3.96	1.45	2.27	3.10	4.20
4.00	1.35	2.12	2.90	3.93	1.42	2.25	3.07	4.17
4.50	1.32	2.09	2.87	3.90	1.39	2.22	3.04	4.14
5.50	1.27	2.04	2.82	3.85	1.34	2.16	3.99	4.08
	<i>80% Corn-20% Oats Value/cwt.</i>							
3.00	1.16	1.89	2.62	3.59	1.23	2.03	2.82	3.88
3.50	1.11	1.84	2.57	3.54	1.17	1.97	2.76	3.83
4.00	1.06	1.79	2.52	3.49	1.11	1.91	2.70	3.76
4.50	1.00	1.74	2.47	3.44	1.05	1.85	2.64	3.70
5.50	.90	1.63	2.37	3.34	.93	1.73	2.52	3.59
	<i>80% Milo-20% Oats Value/cwt.</i>							
3.00	1.48	2.14	2.80	3.68	1.44	2.10	2.77	3.66
3.50	1.50	2.16	2.83	3.71	1.45	2.12	2.79	3.68
4.00	1.53	2.19	2.85	3.73	1.47	2.14	2.81	3.70
4.50	1.55	2.21	2.88	3.76	1.49	2.16	2.82	3.71
5.50	1.60	2.27	2.93	3.81	1.52	2.19	2.86	3.75

See note on preceding page.

minimizes cost. For example, in the problem budgeted for the 13 through 17-week period (milo, \$1.90 per cwt.; oats, \$2.17, per cwt.; and mash at \$4.00 per cwt.) select the \$2.25 milo and \$4.00 mash price and read off a value of oats of \$0.33 per cwt. or \$0.10 per bushel. Thus, as we found earlier, it is more profitable under this set of circumstances to sell the oats and buy milo.

Sampling Rates For Estimating Average Turkey Weights

There are times when the producer needs to estimate the average weight of his flock of birds so he can make decisions in his production program. This would be a simple process if he could look over his flock of turkeys and accurately estimate the average bird weight. But visual inspection of turkeys is deceiving due to the variability of feathering and body conformation of growing turkeys.

The question then arises as to how many birds should be weighed to estimate the average weight of the flock within a given accuracy level. In order to answer this question, estimates based on the experimental data were used to ascertain the necessary sample size for the different sexes and flock sizes (Table 5).

The interpretation of Table 5 may be made clear by the following example. Suppose a producer has a flock of 1000 males 26 weeks old and wants to obtain an estimate of their average weight. He may wish to know how many turkeys must be weighed to estimate the average weight (within one-half pound) with a 95 percent probability measure of confidence. Using the above information and reading from the table, the estimated size of sample required is found to be 64 birds. For any situation, given the age, sex and level of accuracy desired, the suggested number of birds to weigh can be read from Table 5.

Time of Marketing

In general, hens attain market finish and may be marketed before toms are ready. However, there is some flexibility in the time for marketing both hens and toms. Thus, when a producer expects a change in market conditions, he may sell before his normal marketing time or hold the birds until past the normal period, depending on the nature of his price expectations.

TABLE 5.—Estimated Number of Birds that Must be Weighed to Secure Various Degrees of Accuracy for Different Flock Sizes at the 95 Percent Confidence Level.

	Required Accuracy Level (pounds)	Size of Flock (No. Birds)						
		250	500	1,000	2,500	5,000	7,500	10,000
Female Birds								
21st week	.25	27	28	29	30	30	30	30
26th week	.25	52	58	62	64	65	65	65
	.50	15	16	16	16	16	16	16
Male Birds								
21st week	.25	71	83	91	96	98	98	99
	.50	23	24	24	25	25	25	25
26th week	.25	131	177	215	247	260	265	267
	.50	54	60	64	67	68	68	68
	.75	27	29	30	30	30	30	30
	1.00	16	17	17	17	17	17	17
30th week	.25	133	181	221	255	268	273	276
	.50	55	62	66	69	70	70	70
	.75	28	30	31	31	31	31	31
	1.00	17	17	17	18	18	18	18

APPENDIX TABLE I.—Live Weights by Week and Sex, Market Turkeys Fed Growing Mash and Five Alternative Grains.

Weeks	Corn			Oats			Milo			80%	Corn-20%	Oats	80%	Milo-20%	Oats
	Females Pen 1	Males Pen 6	Avg.	Females Pen 2	Males Pen 7	Avg.	Females Pen 5	Males Pen 8	Avg.	Females Pen 4	Males Pen 9	Avg.	Females Pen 5	Males Pen 10	Avg.
11	6.0	6.5	6.2	6.2	6.8	6.2	5.9	6.0	6.0	6.0	6.2	6.1	5.8	6.5	6.5
12	6.5	7.6	7.0	6.7	7.8	7.0	6.5	7.2	6.9	6.6	7.2	6.9	6.3	7.6	7.3
13	7.0	8.8	7.9	7.2	8.9	7.8	7.0	8.4	7.8	7.2	8.4	7.7	7.0	8.8	8.2
14	7.7	10.0	8.8	7.8	10.0	8.7	7.7	9.6	8.7	7.8	9.5	8.6	7.6	9.8	9.0
15	8.2	11.0	9.7	8.3	11.2	9.5	8.3	10.8	9.5	8.4	10.8	9.5	8.1	10.9	9.9
16	8.8	12.2	10.5	8.8	12.2	10.3	8.9	11.9	10.4	9.0	11.8	10.5	8.7	12.0	10.7
17	9.4	13.3	11.3	9.4	13.3	11.1	9.5	13.1	11.3	9.6	12.8	11.3	9.3	13.2	11.5
18	10.0	14.5	12.2	9.9	14.4	12.0	10.1	14.3	12.2	10.2	14.0	12.2	9.9	14.2	12.3
19	10.6	15.7	13.1	10.5	15.5	12.8	10.7	15.5	13.1	10.8	15.2	13.0	10.5	15.3	13.2
20	11.2	16.7	13.9	11.0	16.6	13.6	11.3	16.7	14.0	11.4	16.2	13.9	11.1	16.5	14.0
21	11.8	17.9	14.8	11.5	17.7	14.5	11.9	17.8	14.9	12.0	17.5	14.8	11.7	17.5	14.8
22	12.3	19.0	15.7	12.1	18.8	15.2	12.5	19.0	15.8	12.6	18.6	15.6	12.2	18.7	15.7
23	13.0	20.1	16.6	12.6	20.0	16.0	13.2	20.2	16.7	13.2	19.7	16.5	12.8	19.7	16.5
24	13.5	21.2	17.5	13.2	21.0	16.9	13.8	21.4	17.5	13.8	20.9	17.5	13.4	20.8	17.4
25	14.1	22.4	18.3	13.7	22.2	17.8	14.4	22.6	18.4	14.4	22.0	18.3	14.0	22.0	18.2
26	14.7	23.5	19.2	14.2	23.2	18.6	15.0	23.7	19.3	15.0	23.2	19.2	14.6	23.0	19.0
27	15.3	24.6	20.0	14.8	24.3	19.4	15.6	24.9	20.2	15.6	24.3	20.0	15.2	24.1	19.9
28	15.9	25.8	20.9	15.3	25.5	20.2	16.2	26.1	21.2	16.2	25.4	21.0	15.8	25.2	20.7
29	16.5	26.9	21.8	15.8	26.5	21.0	16.8	27.3	22.0	16.8	26.6	21.8	16.4	26.3	21.5
30	17.1	28.0	22.7	16.4	27.7	21.8	17.4	28.5	22.9	17.4	27.7	22.7	17.0	27.5	22.4
31	17.7	29.2	23.6	17.0	28.8	22.7	18.0	29.7	23.8	18.0	28.9	23.6	17.6	28.5	23.2
32	18.3	30.3	24.4	17.5	30.0	23.5	18.7	30.8	24.7	18.7	30.0	24.5	18.2	29.6	24.0

Applying the data presented in Appendix Tables I and II, or data from their own flocks, producers can determine the "break-even" price for turkeys after an additional feeding period. To make such estimates, it is necessary to know feed requirements and weight gains for the additional period and the present price of the turkeys. Table 6 is an illustration of the use of a convenient budget form for making such estimates. The "break-even" information under one set of conditions has been entered on this form.

To fill in the spaces in Table 6, certain data, which are facts known to the producer at the time the decision is to be made, were assumed. These assumptions were: (1) An offer of 30 cents per pound has been made for the turkey hens in the flock; (2) the birds are 21 weeks old; (3) the ration fed is mash at \$1.00 per cwt. with milo for grain at \$3.00 per cwt.

TABLE 6.—Budget Form for Estimating Time and Weight for Marketing Turkey Hens.

(Value now per head)

Weight now 13.8 lbs.

Price now 30 cents per lb.

Value each now - - - - - \$4.14

Added feed cost:

Lbs. of Mash 2.8 × .04 (Price) = .11

Lbs. of Grain 5.5 × .03 (Price) = .17

Total Estimated Additional Feed Cost .28

Value now plus additional feed cost \$4.42

Weight after feeding period 15.0

Value after feeding period if 30 cent price is expected 4.50

"Break-even" Price $\frac{4.12}{15.0} = 29.5$ cents per pound

Estimated return above feed cost .08 cents

APPENDIX TABLE II.—Smoothed Grain and Mash Requirements by Weeks and Sex, Market Turkeys Fed Growing Mash and Five Alternative Grains.

Weeks	Females		Males		Average	
	Mash	Grain	Mash	Grain	Mash	Grain
Corn						
11	0	0	0	0	0	0
12	2.5	0	2.9	.3	2.5	0
13	5.0	.2	5.5	.6	5.0	.5
14	7.3	.6	8.5	1.0	7.5	1.0
15	9.4	1.4	11.5	1.7	10.0	1.5
16	11.4	2.1	14.5	2.5	12.5	2.5
17	13.4	3.0	17.5	3.4	15.0	3.5
18	15.4	4.2	20.8	4.5	17.5	4.5
19	17.4	5.4	24.0	5.9	20.3	5.6
20	19.3	7.0	27.2	7.5	22.7	7.2
21	20.9	8.5	30.5	9.8	25.4	9.0
22	22.8	10.4	33.9	12.3	27.8	11.0
23	24.5	12.1	37.4	15.0	30.4	13.4
24	26.2	14.3	40.8	18.5	32.8	16.0
25	27.8	16.4	43.9	22.0	35.5	18.6
26	29.4	18.7	47.0	25.9	38.0	21.6
27	30.8	21.2	50.4	29.9	40.5	25.0
28	32.4	23.6	53.5	34.3	43.0	28.6
29	33.8	26.2	56.9	39.0	45.5	32.5
30	35.2	29.0	60.0	44.0	48.0	36.4
31	36.6	31.6	63.5	48.9	50.5	40.0
32	38.0	34.4	67.0	53.9	53.0	44.4
Oats						
11	0	0	0	0	0	0
12	1.9	0	2.9	0	2.0	0
13	3.7	.2	5.5	.5	4.4	.4
14	5.6	.7	8.5	1.1	6.7	.8
15	7.5	1.5	11.5	1.9	9.4	1.5
16	9.5	2.3	14.5	2.9	11.9	2.5
17	11.7	3.3	17.5	4.2	14.5	3.5
18	13.8	4.5	20.5	5.7	17.1	5.0
19	15.8	6.0	23.5	7.5	20.0	6.5
20	18.0	7.5	26.9	9.8	22.6	8.5
21	19.7	9.5	30.0	11.8	25.5	10.5
22	21.7	11.5	33.4	14.0	28.3	12.5
23	23.5	13.5	37.0	16.5	31.2	15.0
24	25.7	15.5	41.0	19.2	34.2	17.5
25	28.0	18.0	45.0	21.9	37.5	20.2
26	30.5	20.4	49.5	25.5	40.5	23.0
27	32.7	22.7	54.0	29.4	43.9	26.4
28	35.3	25.5	58.8	33.4	47.0	29.5
29	37.5	28.0	63.5	37.5	50.1	33.0
30	40.3	31.0	68.5	41.5	53.6	36.5
31	42.5	33.6	73.5	45.7	57.0	40.0
32	45.0	36.5	78.5	50.0	60.2	43.4
Milo						
11	0	0	0	0	0	0
12	2.0	0	3.0	0	2.5	0
13	4.2	0	5.7	0	5.0	0

Table continued on next page.

Appendage Table II Cont.

Weeks	Females		Males		Average	
	Mash	Grain	Mash	Grain	Mash	Grain
14	6.0	.5	8.6	.5	7.5	.5
15	8.0	1.0	11.5	1.0	10.0	1.3
16	9.9	2.0	14.9	1.7	12.4	2.0
17	11.5	3.2	17.9	2.7	14.5	3.2
18	12.9	4.6	21.0	3.9	17.0	4.5
19	14.6	6.4	24.5	5.3	19.4	6.0
20	16.0	8.4	27.8	7.0	21.7	7.7
21	17.5	10.4	31.2	9.0	24.0	9.8
22	18.7	12.5	34.7	11.4	26.5	12.0
23	20.4	15.0	38.0	14.0	29.0	14.7
24	21.5	17.7	41.5	17.0	31.4	17.5
25	23.0	20.5	44.5	20.5	33.5	20.6
26	24.5	23.4	47.5	24.4	36.0	24.0
27	25.8	26.0	50.9	28.6	38.4	27.5
28	27.4	29.0	54.0	33.5	40.5	31.5
29	28.5	32.0	57.4	38.8	43.0	35.5
30	30.0	35.0	60.5	44.0	45.0	40.0
31	31.4	38.5	63.5	50.0	47.5	44.0
32	32.7	41.7	66.9	55.5	50.0	48.5
80% Corn—20% Oats						
11	0	0	0	0	0	0
12	2.2	0	2.6	0	2.4	0
13	4.2	.5	5.4	.6	5.0	.4
14	6.2	.8	8.0	1.0	7.4	.6
15	8.2	1.4	11.0	1.6	10.0	1.2
16	10.0	2.0	14.5	2.1	12.5	2.0
17	12.0	3.0	17.6	3.0	15.0	3.0
18	13.7	4.0	21.0	4.3	17.5	4.0
19	15.5	5.8	24.8	5.2	20.0	5.5
20	17.3	7.5	28.0	7.0	22.5	7.2
21	19.0	9.4	31.0	9.0	25.0	9.0
22	20.6	11.4	34.5	11.4	27.5	11.2
23	22.5	13.5	37.5	14.0	30.0	13.6
24	24.2	15.8	41.0	17.2	32.5	16.4
25	26.0	18.3	44.2	20.6	35.0	19.2
26	27.6	20.8	47.5	24.5	37.6	22.5
27	29.4	23.3	51.0	28.7	40.2	25.5
28	31.0	26.0	54.5	33.0	42.7	29.5
29	32.6	28.6	58.0	38.0	45.4	33.2
30	34.4	31.5	61.5	43.5	47.9	37.2
31	36.0	34.2	65.0	49.0	50.4	41.5
32	37.5	37.0	69.0	54.0	53.0	45.5
80% Milo—20% Oats						
11	0	0	0	0	0	0
12	2.5	0	2.5	0	2.5	0
13	5.0	.1	5.5	.1	5.4	0
14	7.0	.5	8.5	.5	7.9	.5
15	9.0	1.0	11.5	1.3	10.4	1.2
16	10.6	2.0	14.5	2.0	12.5	2.0
17	12.4	3.0	17.5	3.2	15.0	3.3
18	14.0	4.0	20.5	4.5	17.3	4.6

Table Continued on Next Page

Appendage Table II Cont.

Weeks	Females		Males		Average	
	Mash	Grain	Mash	Grain	Mash	Grain
19	15.4	5.8	23.6	6.3	19.5	6.3
20	16.8	7.5	26.8	8.3	21.6	8.0
21	18.4	9.4	30.0	10.5	23.8	10.0
22	19.8	11.8	32.5	13.0	26.0	12.5
23	21.0	14.0	35.5	16.0	28.0	15.4
24	22.5	17.0	38.0	19.7	30.3	18.4
25	23.6	19.6	41.0	23.5	32.5	21.5
26	25.0	22.6	44.0	27.5	34.5	25.0
27	26.3	25.6	46.5	32.5	36.5	29.0
28	27.5	28.6	49.5	37.5	38.6	33.0
29	28.6	32.0	52.5	43.5	40.6	37.5
30	30.0	35.0	55.5	49.5	42.7	42.0
31	31.0	38.5	58.5	55.5	44.9	47.0
32	32.2	41.6	61.4	61.5	46.5	51.8

By weighing an adequate number of birds, as discussed in the previous section, the producer finds that the hens average 13.8 pounds. At the market price of 30 cents per pound, each bird has a present value of \$4.14. Feed consumption for the next two weeks will be 2.8 pounds of mash at a cost of 11 cents and 5.5 pounds of grain at a cost of 17 cents. Totalling then gives a value of \$4.42, which must be received for the hen in two weeks in order to pay for the additional feed. However, during the ensuing two weeks, the hen would have gained 1.2 pounds so that she would then weigh 15 pounds. At the same 30 cents per pound the hen would bring \$4.50 or an estimated return over feed cost of 8 cents. Further deduction will indicate that it would pay feed costs for the additional two week period, if the price per pound did not drop below 29.5 cents. This could be called the "break-even" price.

In almost all instances if the producer expects the price to remain constant or to increase, it would be profitable to keep the birds 2 weeks longer where labor, equipment and other overhead costs are not considered.

Table 7 summarizes, in convenient form, "break-even" prices for certain assumed turkey, grain, and mash prices for an additional two week feeding period for 24-week and 26-week old hens and for 27-week and 29-week old toms. To use the table, assume again that a

producer has 24-week-old hens worth 30 cents per pound on a milo ration and that milo is \$3.00 per cwt. and mash is \$4.00 per cwt. Then, by referring to the table, we find the “break-even” price to be 29.5 cents.

TABLE 7.—“Break-Even price” for Additional 2 Weeks Feeding Period Using a Ration of Mash and Milo as Described and Assuming Input-Outputs to be the same as the Experimental Data.

Price of Turkeys now Per l.b.	Mash \$3.50 per cwt.				Mash \$4.00 per cwt.			
	Price of grain per cwt. (Dollars)				Price of grain per cwt. (Dollars)			
	1.50	2.25	3.00	4.00	1.50	2.25	3.00	4.00
24-week-old Hens								
.25	.242	.245	.248	.251	.243	.246	.248	.252
.30	.288	.291	.294	.297	.289	.292	.295	.298
.35	.334	.337	.340	.343	.335	.338	.340	.344
.40	.380	.383	.386	.389	.381	.384	.386	.390
26-week-old Hens								
.25	.243	.246	.248	.252	.244	.246	.249	.253
.30	.289	.292	.295	.298	.290	.293	.296	.299
.35	.335	.338	.341	.345	.336	.339	.342	.346
.40	.382	.385	.387	.391	.383	.385	.388	.392
27-week-old Toms								
.25	.242	.245	.248	.252	.243	.246	.249	.253
.30	.288	.291	.293	.297	.289	.292	.295	.299
.35	.334	.336	.339	.343	.335	.338	.340	.344
.40	.379	.382	.385	.389	.380	.383	.386	.390
29-week-old Toms								
.25	.243	.246	.249	.253	.244	.247	.250	.254
.30	.289	.292	.295	.299	.290	.293	.296	.300
.35	.335	.338	.341	.345	.336	.339	.342	.346
.40	.381	.384	.387	.391	.382	.385	.388	.392

Based on weight gain and feed requirement data from Appendix 1 and 2. No allowance has been made for costs other than feed involved in the extra feeding period.