

How much should I pay for Feeder Pigs ?

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PROFIT is defined in this circular as the return to operator labor and management which is the difference between gross sales and all costs, both variable and fixed. This circular is designed as an aid for a quick and easy estimation of the profit potential from finishing 40-lb. feeder pigs.

The initial cost of the feeder pig is an important factor in determining the profit potential of a feeder pig enterprise. Both the buyer and seller must recognize the profit potential in young pigs, in order that the true market value can be determined. This circular will be useful to the feeder pig producer as well as to the buyer who plans to finish the pigs to slaughter weights near 210 lbs.

PROFITS IN FINISHING FEEDER PIGS FOR MARKET

An individual hog producer can do little to influence the price of hogs, however, he can manage his operation to maximum profits including:

- (1) Plan breeding of sows so that pigs will reach market weight when prices are at their highest for the year. Sows must conceive 9½ to 10 months before you hope to market butcher hogs.
- (2) Breed and produce high quality butcher hogs with a maximum amount of muscling and meatiness and minimum of waste fat. Such hogs will command the highest possible price on the day they are sold.
- (3) Sell hogs at the proper weight. Butchers in the 200-220 pound weight range usually bring the highest prices. Excellent quality meat-type pigs may be carried to slightly heavier weights without becoming excessively fat, which results in price reduction.
- (4) Sorting butchers weighing 200-220 pounds out from the herd regularly and shipping to market in uniform, correctly finished droves will help to insure the highest possible prices.

In contrast, several factors influence production costs. Variable costs are those which change from time to time, or increase as production or output increases, and which may be altered by management; these include price of grains, price of supplement, veterinary fees, labor, interest on operating loans, insurance, and certainly feeder pig cost. Fixed costs, including depreciation on equipment and housing, interest on equipment and housing, personal property tax, will continue regardless of whether given hog finishing facilities are used or not. Fixed costs per animal can be held to a minimum by operating at maximum capacity. Circular FM-1-67 "Farm Management Planning Guide for North Dakota" available from your County Agent gives help in budgeting out possible returns from various types of swine enterprises.

The major variables a hog producer must consider are expected selling price and price of the feeder pigs he is considering buying. These two factors deserve most attention since they tend to fluctuate more over a short period of time than do the other variable factors affecting profits from finishing feeder pigs. Feed costs ordinarily tend to remain quite stable over a longer period of time than the four months or less it takes to get a feeder pig to market.

Each value shown in the table is correct for only the particular combination of feed cost and non-feed cost factors indicated. This makes it necessary to do some interpolating or averaging of the values shown in the tables to be satisfactorily accurate. These tables are at best a guide only, since eventual selling price, total feed requirements, and exact non-feed costs can seldom, if ever, be predicted precisely in advance at the time when the feeder pigs are purchased.

If cost per ton of feed would change during a period when a farmer's production cost items other than feed are unchanged, the proportion of total production costs represented by feed would be changed. This makes

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some adjustment necessary to use these tables correctly. For example, if one buys a complete feed for \$60 per ton and non-feed cost items represent 20% of his total costs, he might have a margin from the table values of about \$17. If feed prices change so he is able to buy the same feed for \$2 less per ton, non-feed cost items will then represent slightly more than 20% of his total production costs. **IT IS HIGHLY ADVANTAGEOUS FOR HOG FEEDERS TO KNOW OR CALCULATE THEIR ACTUAL FEED COSTS AND THEIR NON-FEED PRODUCTION COSTS, TO BE ABLE TO ESTIMATE POTENTIAL PROFITS MOST ACCURATELY.** This circular can be most useful to hog producers who know rather closely what their feed requirements and production items other than feed actually will cost them.

This circular deals mainly with cost of the feeder pig, since it is usually the most variable factor among the costs of raising a pig to butcher weight. A 40-lb. initial weight and 210-lb. final weight are assumed in the calculation of the tables in this circular. Other major categories of costs in finishing feeder pigs are feed costs and non-feed costs, or production costs other than feed. This circular has been assembled to enable the hog producer to consider these costs of production, as well as the expected selling price, in determining how much can be paid for feeder pigs and still insure a profit for the operation.

FEED COSTS

Feed usually is considered to represent from 70 to 90% of total production costs. Several factors in turn affect feed costs needed to produce 100 pounds of pork. Unbalanced rations increase feed costs. Although the price per ton may be lower for poorly balanced rations, the feed required per pound of gain will be greater so that final feed cost per pound of gain will actually be higher. Rations which are even slightly deficient in needed vitamins, minerals, or amino acids will be utilized less efficiently than properly balanced, nutritionally adequate rations. Unbalanced rations are consumed in smaller amounts than desired, or feed is wasted with the result that pigs grow slower. Slow gains mean inefficient gains, since more of the total feed consumed is used for maintenance purposes and the pigs must be fed for more days to reach market weight.

Cost Per Ton of Ration:

If two rations are equally adequate in meeting the nutrient needs of growing pigs, the ration costing less per ton will produce the lowest-cost gains. Cost per ton of balanced and mixed rations is affected more by the cost of the grains (the principal ingredient) than by any other factor. Amount of supplement used per ton will also be an important price factor. Processing (grinding and mixing) is still another cost that must be considered. See NDSU Extension Circular AE-75 "Aids for Planning Mechanized Feeding" for aid in determining exact cost of processing your own feed on the farm. Most producers

will do well to consider first: what feed conversion will be obtained from a possible ration, and secondly, what will the ration cost per ton?

Weight of Pigs Fed:

The amount of feed required per pound of pig gain increases as the pig gets heavier. Pigs sold at 240 pounds will not be as efficient as pigs sold at the more desirable weight of 210 pounds. Similarly, pigs started on feed at 65 pounds will require more feed per pound of gain than pigs started on feed at 40 pounds. Partially off-setting this advantage of lighter pigs in feed conversion efficiency is the greater need for amino acids, vitamins, and minerals of younger, lighter pigs. Higher protein rations needed by younger animals are more costly because protein supplements cost more per pound than grains. Unless younger, lighter pigs are fed rations which are higher in non-energy nutrients (protein or amino acids, vitamins, minerals) performance will be reduced.

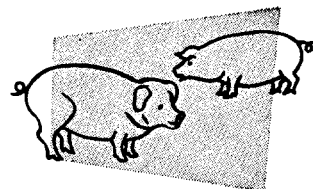
This circular assumes a starting weight of 40 pounds and finished weight of 210 pounds. Variations from these starting or sale weights can be expected to affect feed conversion as described above. Keeping the tables of this circular of workable size demands that as few combinations as possible be used. If different starting or finishing weights are practiced, estimates can be made to take care of the proper affect on feed conversion efficiency.

FEED CONVERSION EFFICIENCY

Several factors affect efficiency of converting feed to pork. This circular assumes a properly-balanced ration is being fed. About 30% of the differences in feed conversion are usually due to genetic differences between pigs. When one buys pigs, he will not ordinarily have an idea as to how efficient or inefficient they will be. Keep pigs free of disease of intestinal disturbances, and free of both internal and external parasites.

Pellets or Meal

This circular assumes a feed conversion ratio of 3.5 pounds of a properly balanced pelleted ration per pound of gain, and 4.0 pounds of a ground ration per pound of gain. These figures are close to the average performance of pigs fed experimental rations at the North Dakota Agricultural Experiment Station over a number of years. If balanced rations are fed, these figures of expected feed conversion efficiency will be satisfactory to enable one to estimate profit potential



with a group of feeder pigs. Pigs usually will utilize a complete pelleted ration more efficiently than the same ration formula offered in the meal form. Feeds such as oats and barley, which contain higher levels of fiber, are improved more by pelleting than are corn or wheat.

Summer or Winter

Winter feed conversion is less efficient than summer performance, even with very good housing. One can expect pigs to require about 6% more feed per pound of gain during the winter in North Dakota. Without adequate housing, the difference can become quite large. A warm well-bedded sleeping area, protected from drafts and winds, where the pigs can eat and drink in inclement weather, will pay for itself in cheaper gains.

Pasture or Drylot

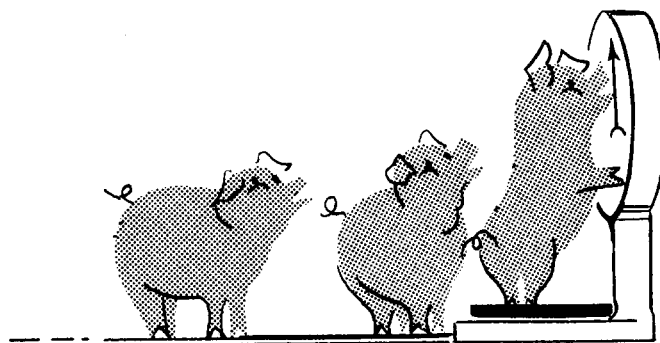
Pasture feeding of pigs fed balanced rations will save an average of three per cent of the feed needed per 100 pounds of gain. The advantages in labor saving due to having the pigs spread their own manure in the summer may be even more important. More important than the saving in feed per 100 pounds of gain is the fact that ration protein content can be lowered $1\frac{1}{2}$ per cent for pigs on excellent legume pasture without impeding or injuring pig performance, but is partly offset by cost of fencing and maintenance of a growthy, lush pasture.

NON-FEED COSTS

As indicated previously, non-feed costs will usually represent from 10 to 30 per cent of the total cost of bringing 40-lb. feeder pigs to market weight, not including cost of the pig itself. They will be variable from farm to farm; consequently it is desirable for hog producers to calculate what their actual costs are. Included will be depreciation costs on buildings and equipment, medicinal and veterinary expenses, trucking expense, shrinkage, repairs and necessary replacement to buildings and equipment, commissions on sales, interest on investment and cost of hired labor. In such case profit or margin over all cost, including feeder pig price, will represent return to management ability and the manager's own labor.

Costs of producing a 210-lb. butcher hog, other than feed, vary greatly from farm to farm. Tables 1 to 4 offer possibilities to estimate profit potential when feed cost is estimated to be 70%, 80%, 90%, or all of the production cost. While the assumption made in Table 4 would never be completely true (feed costs = 100 per cent of total costs) it is included here for general information. Circular FM-1-67 suggests how one might calculate non-feed costs for his own feeder pig finishing operation.

On many farms, non-feed cost items to finish feeder pigs will be between \$3 and \$5 per pig. A few farms



will have lower or higher costs. Each producer should determine actual costs for his own operation. Feed costs are easier to calculate, since fewer items are involved. Knowing what their actual past production costs have been will be invaluable to hog producers for accurately estimating profit potential from finishing feeder pigs.

Most farmers do not have exact or detailed estimates of non-feed costs of production. Many do not even have adequate records on feed costs of feeder pigs previously fed out. For many farms, feed costs will represent 75 to 85 per cent of total production costs. Using Table II, based on feed as 80% of all production costs, might be best for them. For hog finishing operations with a minimum investment in equipment, facilities, and labor, the 90% table (Table III) might be appropriate. Cost of finishing butcher hogs in highly-mechanized confinement facilities might be best estimated by using Table I, based on feed equal to 70% of all production costs. The same is true for small groups of pigs where labor and equipment requirements per pig will be higher than with larger groups of feeder pigs.

USING THE TABLES

Values shown in the tables are dollar differences per pig between market value and all costs, except cost of feeder pig, using the combinations indicated. By choosing the values pertinent to a production system, the hog producer can easily determine how much can be paid for 40-lb. feeder pigs. Figures given in the tables refer to the cost of the pig plus profit. In other words, if the proper combination of feed prices, feed conversion, non-feed costs, and expected selling price for a group of feeder pigs indicates \$20 expected margin, you could pay \$14 per pig and expect to have \$6 profit per pig after selling. If you paid \$15.50, you would have \$4.50 profit left after deducting all costs.

Similarly, if the production costs and expected selling price indicate a \$27 difference, you could pay as much as \$19 for the feeder pig and still make \$8 per head. By the same token, if the appropriate combination of production cost factors and expected selling price indicates you will have only \$12 margin, you will have to buy the pig for \$8 or less to assure yourself of a \$4 profit per animal.

The tables show varying costs per ton of feed. Prices were calculated at \$5 intervals from \$40 to \$70 per ton. For ration costs which fall between the costs shown in the tables, (for example a cost of \$57.50 for a pelleted ration) one can interpolate between the combinations for \$55 and \$60 rations to arrive at a satisfactory estimate. Let's assume one uses pelleted ration costing \$57.50 per ton, feed represents 90% of his cost of finishing feeder pigs, and that he expects to sell hogs for \$21 per cwt. Table III (feed = 90% of all costs) shows that with a \$55/Ton ration, he would have a \$25.92 margin between production costs and sales value (this includes both cost of the feeder pig and his profit). With feed at \$60 per ton, his margin would be \$24.27. Averaging these two values of \$25.92 and \$24.27 gives an expected margin of \$25.10 if his ration cost is \$57.50. This means he could expect a profit of \$10 if the feeder pigs cost him \$15, or slightly over \$13 profit per pig if he could buy the feeder pigs for \$12. Paying \$17 for the feeders would lower his expected profit to just over \$8.

If one assumes feed equals 75% of his total production costs, he can arrive at an accurate estimate for his operation by taking the values from Table I and Table II (70% and 80%) and averaging them.

The same method of interpolating between two cost-price combinations can be used for pig selling price. If one expects butcher hogs to bring \$17.50 per cwt. when his hogs will be ready to sell, he should use the appropriate combinations for \$17 butchers and \$18 butchers and then average these to get a close estimate of expected profit.

SUMMARY

All four of these major profit-determining factors vary considerably from farm to farm and from time to time, so each factor must be given due consideration in estimating profit opportunities from finishing a particular group of feeder pigs. This circular does the job quickly for the hog producer, avoiding the need for time consuming arithmetic.

A few minutes practice with the tables in the circular will show you how to make maximum use of these tables. These values were obtained using an electronic computer; by using this circular correctly you can do your own computing.



TABLE I
Margin Per Pig When
Feed Costs = 70% of all production costs
Margin = Cost of feeder pig plus profit

Expected Selling Price	Cost Per Ton Of Ration															
	\$40		\$45		\$50		\$55		\$60		\$65		\$70			
	3.5	4.0	P*	M**	P*	M**	P*	M**	P*	M**	P*	M**	P*	M**	P*	M**
\$12	8.20	5.77	6.08	3.34	3.95	.91	1.82	-1.51	-.30	-3.94	-2.42	-6.37	-4.55	-8.80		
13	10.30	7.87	8.18	5.44	6.05	3.01	3.92	.59	1.80	-1.84	-.32	-4.27	-2.45	-6.70		
14	12.40	9.97	10.28	7.54	8.15	5.11	6.02	2.69	3.90	.26	1.78	-2.17	-.35	-4.60		
15	14.50	12.07	12.38	9.64	10.25	7.21	8.12	4.79	6.00	2.36	3.88	-.07	1.75	-2.50		
16	16.60	14.17	14.48	11.74	12.35	9.31	10.22	6.89	8.10	4.46	5.98	2.03	3.85	-0.40		
17	18.70	16.27	16.58	13.84	14.45	11.41	12.32	8.99	10.20	6.56	8.08	4.13	5.95	1.70		
18	20.80	18.37	18.68	15.94	16.55	13.51	14.42	11.09	12.30	8.66	10.18	6.23	8.05	3.80		
19	22.90	20.47	20.78	18.04	18.65	15.61	16.52	13.19	14.40	10.76	12.28	8.33	10.15	5.90		
20	25.00	22.57	22.88	20.14	20.75	17.71	18.62	15.29	16.50	12.86	14.38	10.43	12.25	8.00		
21	27.10	24.67	24.98	22.24	22.85	19.81	20.72	17.39	18.60	14.96	16.48	12.53	14.35	10.10		
22	29.20	26.77	27.08	24.34	24.95	21.91	22.82	19.49	20.70	17.06	18.58	14.63	16.45	12.20		
23	31.30	28.87	29.18	26.44	27.05	24.01	24.92	21.59	22.80	19.16	20.68	16.73	18.55	14.30		
24	33.40	30.97	31.28	28.54	29.15	26.11	27.02	23.69	24.90	21.26	22.78	18.83	20.65	16.40		
25	35.50	33.07	33.38	30.64	31.25	28.21	29.12	25.79	27.00	23.36	24.88	20.93	22.75	18.50		
26	37.60	35.17	35.48	32.74	33.35	30.31	31.22	27.89	29.10	25.46	26.98	23.03	24.85	20.60		
27	39.70	37.27	37.58	34.84	35.45	32.41	33.32	29.99	31.20	27.56	29.08	25.13	26.95	22.70		
28	41.80	39.37	39.68	36.94	37.55	34.51	35.42	32.09	33.30	29.66	31.18	27.23	29.05	24.80		

* Pelleted 3.5 to 1 feed conversion

**Meal 4 to 1 feed conversion

TABLE II
Margin Per Pig When
Feed Costs = 80% of All Production Costs

Cost Per Ton Of Ration

Expected Selling Price	\$40		\$45		\$50		\$55		\$60		\$65		\$70	
	*3.5	**4.0	3.5	4.0	3.5	4.0	3.5	4.0	3.5	4.0	3.5	4.0	3.5	4.0
\$12	10.32	8.20	8.47	6.08	6.61	3.95	4.75	1.82	2.89	-.30	1.03	-2.42	-.83	-4.55
13	12.42	10.30	10.57	8.18	8.71	6.05	6.85	3.92	4.99	1.80	3.13	-.32	1.27	-2.45
14	14.52	12.40	12.67	10.28	10.81	8.15	8.95	6.02	7.09	3.90	5.23	1.78	3.37	-.35
15	16.62	14.50	14.77	12.38	12.91	10.25	11.05	8.12	9.19	6.00	7.33	3.88	5.47	1.75
16	18.72	16.60	16.87	14.48	15.01	12.35	13.15	10.22	11.29	8.10	9.43	5.98	7.57	3.85
17	20.82	18.70	18.97	16.58	17.11	14.45	15.25	12.32	13.39	10.20	11.53	8.08	9.67	5.95
18	22.92	20.80	21.07	18.68	19.21	16.55	17.35	14.42	15.49	12.30	13.63	10.18	11.77	8.05
19	25.02	22.90	23.17	20.78	21.31	18.65	19.45	16.52	17.59	14.40	15.73	12.28	13.87	10.15
20	27.12	25.00	25.27	22.88	23.41	20.75	21.55	18.62	19.69	16.50	17.83	14.38	15.97	12.25
21	29.22	27.10	27.37	24.98	25.51	22.85	23.65	20.72	21.79	18.60	19.93	16.48	18.07	14.35
22	31.32	29.20	29.47	27.08	27.61	24.95	25.75	22.82	23.89	20.70	22.03	18.58	20.17	16.45
23	33.42	31.30	31.57	29.18	29.71	27.05	27.85	24.92	25.99	22.80	24.13	20.68	22.27	18.55
24	35.52	33.40	33.67	31.28	31.81	29.15	29.95	27.02	28.09	24.90	26.23	22.78	24.37	20.65
25	37.62	35.50	35.77	33.38	33.91	31.25	32.05	29.12	30.19	27.00	28.33	24.88	26.47	22.75
26	39.72	37.60	37.87	35.48	36.01	33.35	34.15	31.22	32.29	29.10	30.43	26.98	28.57	24.85
27	41.82	39.70	39.97	37.58	38.11	35.45	36.25	33.32	34.39	31.20	32.53	29.08	30.67	26.95
28	43.92	41.80	42.07	39.68	40.21	37.55	38.35	35.42	36.49	33.30	34.63	31.18	32.77	29.05

*3.5 to 1 feed conversion based on pellets

**4.0 to 1 feed conversion based on ground rations

TABLE III
Margin Per Pig When
Feed Costs = 90% of All Production Costs

Cost Per Ton Of Ration

Expected Selling Price	\$40		\$45		\$50		\$55		\$60		\$65		\$70	
	*3.5	**4.0	3.5	4.0	3.5	4.0	3.5	4.0	3.5	4.0	3.5	4.0	3.5	4.0
\$12	11.98	10.09	10.32	8.20	8.67	6.31	7.02	4.42	5.37	2.53	3.71	.64	2.06	-1.24
13	14.08	12.19	12.42	10.30	10.77	8.41	9.12	6.52	7.47	4.63	5.81	2.74	4.16	.86
14	16.18	14.29	14.52	12.40	12.87	10.51	11.22	8.62	9.57	6.73	7.91	4.84	6.26	2.96
15	18.28	16.39	16.62	14.50	14.97	12.61	13.32	10.72	11.67	8.83	10.01	6.94	8.36	5.06
16	20.38	18.49	18.72	16.60	17.07	14.71	15.42	12.82	13.77	10.93	12.11	9.04	10.46	7.16
17	22.48	20.59	20.82	18.70	19.17	16.81	17.52	14.92	15.87	13.03	14.21	11.14	12.56	9.26
18	24.58	22.69	22.92	20.80	21.27	18.91	19.62	17.02	17.97	15.13	16.31	13.24	14.66	11.36
19	26.68	24.79	25.02	22.90	23.37	21.01	21.72	19.12	20.07	17.23	18.41	15.34	16.76	13.46
20	28.78	26.89	27.12	25.00	25.47	23.11	23.82	21.22	22.17	19.33	20.51	17.44	18.86	15.56
21	30.88	28.99	29.22	27.10	27.57	25.21	25.92	23.32	24.27	21.43	22.61	19.54	20.96	17.66
22	32.98	31.09	31.32	29.20	29.67	27.31	28.02	25.42	26.37	23.53	24.71	21.64	23.06	19.76
23	35.08	33.19	33.42	31.30	31.77	29.41	30.12	27.52	28.47	25.63	26.81	23.74	25.16	21.86
24	37.18	35.29	35.52	33.40	33.87	31.51	32.22	29.62	30.57	27.73	28.91	25.84	27.26	23.96
25	39.28	37.39	37.62	35.50	35.97	33.61	34.32	31.72	32.67	29.83	31.01	27.94	29.36	26.06
26	41.38	39.49	39.72	37.60	38.07	35.71	36.42	33.82	34.77	31.93	33.11	30.04	31.46	28.16
27	43.48	41.59	41.82	39.70	40.17	37.81	38.52	35.92	36.87	34.03	35.21	32.14	33.56	30.26
28	45.58	43.69	43.92	41.80	42.27	39.91	40.62	38.02	38.97	36.13	37.31	34.24	35.66	32.36

*3.5 to 1 feed conversion based on pellets

**4.0 to 1 feed conversion based on ground rations

TABLE IV
Margin Per Pig When
Feed Costs = 100% of All Costs Needed To
Be Recovered. Indicated Combinations of Production
Factors Will Recover Only Feed Costs.

Cost Per Ton Of Ration

Expected Selling Price	\$40		\$45		\$50		\$55		\$60		\$65		\$70	
	3.5	4.0	P*	M**	P*	M**	P*	M**	P*	M**	P*	M**	P*	M**
\$12	13.30	11.60	11.81	9.90	10.32	8.20	8.84	6.50	7.35	4.80	5.86	3.10	4.38	1.40
13	15.40	13.70	13.91	12.00	12.42	10.30	10.94	8.60	9.45	6.90	7.96	5.20	6.48	3.50
14	17.50	15.80	16.01	14.10	14.52	12.40	13.04	10.70	11.55	9.00	10.06	7.30	8.58	5.60
15	19.60	17.90	18.11	16.20	16.62	14.50	15.14	12.80	13.65	11.10	12.16	9.40	10.68	7.70
16	21.70	20.00	20.21	18.30	18.72	16.60	17.24	14.90	15.75	13.20	14.26	11.50	12.78	9.80
17	23.80	22.10	22.31	20.40	20.82	18.70	19.34	17.00	17.85	15.30	16.36	13.60	14.88	11.90
18	25.90	24.20	24.41	22.50	22.92	20.80	21.44	19.10	19.95	17.40	18.46	15.70	16.98	14.00
19	28.00	26.30	26.51	24.60	25.02	22.90	23.54	21.20	22.05	19.50	20.56	17.80	19.08	16.10
20	30.10	28.40	28.61	26.70	27.12	25.00	25.64	23.30	24.15	21.60	22.66	19.90	21.18	18.20
21	32.20	30.50	30.71	28.80	29.22	27.10	27.74	25.40	26.25	23.70	24.76	22.00	23.28	20.30
22	34.30	32.60	32.81	30.90	31.32	29.20	29.84	27.50	28.35	25.80	26.86	24.10	25.38	22.40
23	36.40	34.70	34.91	33.00	33.42	31.30	31.94	29.60	30.45	27.90	28.96	26.20	27.48	24.50
24	38.50	36.80	37.01	35.10	35.52	33.40	34.04	31.70	32.55	30.00	31.06	28.30	29.58	26.60
25	40.60	38.90	39.11	37.20	37.62	35.50	36.14	33.80	34.65	32.10	33.16	30.40	31.68	28.70
26	42.70	41.00	41.21	39.30	39.72	37.60	38.24	35.90	36.75	34.20	35.26	32.50	33.78	30.80
27	44.80	43.10	43.31	41.40	41.82	39.70	40.34	38.00	38.85	36.30	37.36	34.60	35.88	32.90
28	46.90	45.20	45.41	43.50	43.92	41.80	42.44	40.10	40.95	38.40	39.46	36.70	37.98	35.00

*Pelleted 3.5 to 1 feed conversion

**Meal 4 to 1 feed conversion

