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Possibilities for Cattle Income

R. T. BURDICK

Colorado Experiment Station
Colorado State College
Fort Collins

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R. T. BURDICK[1]

IN THE operation of any business it is many times necessary to anticipate the possibilities from a proposed course of action. Cattlemen must analyze many factors affecting income, some of which require laborious calculations. The tables in this report have been prepared to save time in calculating the possible outcome of any proposed change, or the effect upon income if a proposed course of action results as it is hoped it will. In this sense these tables might justify the label, "Basic Economic Calculations in the Cattle Business."

Some questions frequently asked concerning the cattle business are: What is the number of cattle needed to give the owner a satisfactory income? What is an economic unit? How much land does a cattleman need for a living?

Men who have spent their lives in the business know that there is no one answer for any of these questions. There are too many things that can happen. Besides the fact that few agree on the number of dollars which will permit a satisfactory standard or scale of living, the things that upset all attempts to find a single answer to any of these questions include uncertainties as to calf crops, death loss, replacements, sale weights, and sale prices (not to mention feed and labor costs and other expense items), together with the risk of drought and loss of anticipated grazing.

After consideration of these problems, it seems desirable to take some of the more important of these variables and prepare tables showing their effect upon the gross income from cattle. The following calculations are submitted as a step toward development of a "ready reference guide" to show what might be expected under quite a range or variation in the items mentioned.

Objectives of this study might be summarized to include the following main points:

1. To show the effect of calf crop, death loss, and other factors upon the size of herd necessary to maintain 100 breeding cows.
2. To show the effect of various factors upon the pounds of total beef sold from 100 breeding cows.
3. To condense many cattle calculations in a small space.
4. To assist those who work with cattlemen in obtaining a close estimate of the results from any management practice.
5. To show the necessity for considering size of herd and production per head as well as total production from 100 breeding cows.
6. To furnish basic calculations to assist in estimating the probable gross income from any size of herd, since the number of breeding cows in any herd can be used in relation to the uniform 100 cows in these tables for a direct proportionate gross income.

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[1]Associate Economist, Colorado Experiment Station.

Factors Analyzed

Calf Crop

Calf crop was based upon the number of cows in the breeding herd on January 1 prior to date of calving. One hundred cows were taken as the basis for all calculations because this permitted an easy transfer to any other size of breeding herd.

Age of Heifers

Age of heifers entering the breeding herd was calculated for two conditions. It was assumed that heifers would be bred to have their first calf as 2-year-olds or as 3-year-olds. In either case these bred heifers were included in the "100 cows in the breeding herd" on hand January 1 prior to the date for their first calf.

To reduce the chances for confusion, no consideration was given to the fact that young heifers normally drop a smaller percentage of calves. To include this variable would have involved separate calculations for 10 to 19 heifers and for 81 to 90 cows out of the 100-cow herd. It was felt the wide range in calf crops studied would include the practical effects of this situation.

To illustrate the problem of cow age and calf crop, it may be assumed that 100 cows whose ages were as follows and whose possible calf crops vary with the age of the cows would calve as follows:

Number Cows		Number Calves
13	heifers to calve as 2-year-olds @ 25-percent calf crop	3
13	heifers with second calf @ 65-percent calf crop	8
74	mature cows @ 80-percent calf crop	59
100		70

Under this assumption, a 70-percent calf crop is obtained from the herd, although the mature cows drop 80 percent. If the first calf is dropped at 3 years, the results would be as follows:

Number Cows		Number Calves
13	heifers to calve as 3-year-olds @ 65-percent calf crop	8
87	mature cows @ 80-percent calf crop	70
100		78

The average calf crop is now 78 percent, entirely because of the change in the age at which heifers calve. The extra 8 calves represent the added income to permit carrying 13 heifers a year longer before breeding. Incidentally, if the total size of the breeding herd under the first conditions was 113 head, there would be 79 calves (with a 70-percent average for the entire herd). Looked at this way, it would seem to indicate that the practice of breeding heifers to

calve at 2 years of age would show 1 extra calf from 113 head as compared to a 78-percent calf crop on 100 head and 13 heifers not bred. Since extra fencing and expense is involved in keeping these heifers out, it would appear under these assumptions that breeding heifers to calve as 2-year-olds is the best practice. However, a change in the percentage calf crop of 2-year-olds and 3-year-olds would change this comparative result. Also the average weight of cows sold would be normally less when heifers are bred as 2-year-olds, and the death loss of 2-year-old heifers is heavier at calving time.

Age for Replacement of Cows

Age for replacement of cows was studied in terms of "percentage of cows replaced each year." If 6, 8, or 10 years of usefulness in the breeding herd were assumed, then 16⅔ percent, 12½ percent, or 10 percent of the cows would be replaced each year. Since it is inconvenient to handle fractions, the actual replacement percentages used in these tables were 17, 13, and 10, as shown in table 2. The 10-percent replacement, in most of the tables, gives a better income than from the other replacement percentages. This is due to the use of uniform figures of a 4-cent sale price and 1,000-pound sale weight. Actually, the cows sold under the 10-percent replacement program would be culls at a low price, while a large proportion of the cows sold under a 17-percent replacement program would be fat cows at higher prices.

Death Loss

Death loss was calculated under three assumptions: For a 2-percent, 5-percent, or 10-percent loss. These were considered to be yearly losses. In the case of calves the death loss was calculated two ways. Some cattlemen consider that the final count of calves at the fall round-up determines the calf crop for the year. Obviously, under these conditions any death loss of calves during the summer is ignored in arriving at the percentage calf crop. Other cattlemen count the calf crop at the time of spring branding. In this case some of these calves will be lost during the summer and fall months.

Accordingly, the calf crop percentages studied were analyzed separately for spring count and fall count. No attention was given to a frequent condition wherein calves are born scattered throughout many months. Obviously, this produces calves of all ages and weights. Few cattlemen favor this practice because it is due more to failure to control breeding than to any positive intention. It is something to avoid rather than to make a part of recorded practice.

Age of Young Cattle Sold

Age of young cattle sold was analyzed under two conditions: With all surplus calves sold (1) as calves or (2) as long yearlings.

Sale Weights

Sale weights were assumed to be the same for heifers as for steers of the same age classification. This was done to simplify the assembly of tables. Since actual sale weights vary widely, an enormous amount of calculation would be required to present each variation. The tables as presented are based on three weights: All cows are sold at 1,000 pounds each, all calves at 375 pounds each, and all long yearlings at 700 pounds each. Then a table (table 4) is included which shows other weights as a percentage of these basic weights. Calves weighing 425 pounds, for example, weigh 113.3 percent as much as 375-pound calves. Consequently, the data at any point in the calf tables can be multiplied by the percentage shown for a different calf weight to obtain the desired result.

One practical problem concerning calf weights has not been included in these tables, except in so far as it is covered in table 4 or in table 24. Under actual conditions it is seldom possible to have a uniform-weight bunch of calves for sale. Some are too light and will be held over for sale as yearlings if they cannot be sold for veal. Since the proportion of light-weight calves in any season is an unknown quantity, it would be somewhat complicated to include any allowance for it in the calculations in the tables, other than to use a lower average weight for all calves. This in itself indicates the need for a study of herd management that might permit a closer bunching of calving dates. Where cattle are run under conditions similar to those along the "front range", as it is called from the Wyoming border south, there are some cattlemen who are trying to breed for January and February calves to be born ahead of the spring storms. If this practice should prove feasible, it will have several important results. Cows can be pasture bred before going onto the national forest in late spring; fewer bulls will be required and therefore better bulls will be purchased; breeding can be controlled; bulls will not be needed on the national forest; calves can be grown to 450- to 500-pound weights for fall sale; and better calf crops should be obtained.

Another practical problem concerns the sale weight of cows from herds with low- as compared to high-percentage calf crops. Naturally there will be more "grass fat" cows for sale when calf crops are low. These cows will weigh more and sell for better prices than the average. No allowance has been made for this condition in the tables because it is largely subject to local conditions.

Sale Prices

Sale prices have been handled in a manner similar to sale weights. All cow sales have been calculated at 4 cents per pound and all calf or yearling sales have been calculated at 6 cents per pound. Then a table (table 24) has been prepared with prices of 4 cents to 10 cents

shown as a percentage of 6 cents. Here again, if actual sales of yearlings are at 8 cents, the values shown for yearlings in any table can be multiplied by 133.33 percent to find the corresponding value with an 8-cent price. In this way it is hoped that the greatest usefulness of the tables will be combined with a minimum of "bulk."

Use of Tables

Use of the tables will vary according to need. Probably the best use of the tables would come from taking the conditions on an individual ranch and comparing with the tables to see whether the calculations agree with actual experience. Several illustrations will aid in showing how the tables can be used to help in studying the cattle business. These illustrations do not mean that the Experiment Station recommends the particular point used in the illustration.

1. Assume that a cattleman is now getting a 65-percent calf crop (spring-count basis) and is contemplating some fencing and other changes to permit pasture breeding, which has resulted on other ranches in a 90-percent calf crop. He sells long yearlings and has had a 5-percent death loss under former conditions but anticipates a 2-percent death loss under better control. Also, in the past his yearlings have weighed about 650 pounds at time of sale, but he hopes to raise that to 750 pounds with the change. He has normally replaced 13 percent of his breeding cows each year, that is, his cows have had an 8-year life in the herd; but he hopes to keep his cows 10 years with the better care that he can give them in the new pasture. He breeds heifers to calve at 3 years of age. Here are the conditions that might face a cattleman. Many laborious calculations are involved if a reasonably accurate comparison is desired. Yet, by the use of the tables in this report, a very close estimate can be made to show the expected result under any specified price.

Table 22 shows $1,890 as the income from yearlings under this cattleman's present conditions (with 700-pound sale weights). His 650-pound sale weight would be 92.9 percent of this (table 4), or $1,756. Table 22 shows $3,192 as the income from yearlings under the hoped-for conditions (but with a 700-pound sale weight). The intention is to have yearlings weighing 750 pounds, and that will be 107.1 percent of the weight on which table 22 is based, making $3,419 income from the sale of yearlings, or $1,663 increased income. Cow sales happen to remain the same in the contrasts selected ($320 in each case) so they will not affect the comparison. Actually, of course, cow sale weights might differ under the new conditions, and this should be taken into consideration. The anticipated $1,663 increase of yearling sales, with the same sale price of 6 cents used in each case, gives a quick check on the possibilities. Table 9 shows, however, that 202 head of cattle of all ages will be required to main-

tain 100 breeding cows in the cattleman's contemplated program, compared to 180 in his present practice. Obviously, it will require more land to graze and feed these extra 22 head of cattle.

2. Suppose a cattleman is interested in the question of whether to sell calves or yearlings. Here, for comparative purposes, the same conditions should be maintained for both except the one item of sale weights. Tables 7 and 8 are based on sale weights of 375 pounds and 700 pounds for these two age classes. Local experience might indicate that calves can be turned off at 400 pounds and long yearlings at 750. Tables 21 and 22 show that conditions of a 70-percent calf crop (spring count), heifers to calve as 3-year-olds, a 5-percent death loss, and a 10-percent replacement would permit calf sales of $1,260, cow sales of $200 in each case, and yearling sales of $2,184. However, these must be changed to allow for the heavier estimated weights. The 400-pound calves will give 106.7 percent (table 4) of the results shown in table 21, or $1,344 as the value of calf sales. The 750-pound yearlings will give 107.1 percent, or $2,339. One more contrast: Suppose that calves sell for 7½ cents per pound, while the yearlings sell for 6¼ cents. The $1,344 calf sales (calculated from table 21) will need to be increased to 125 percent (table 24) or $1,680. The $2,339 yearling sales (calculated from table 22) will need to be increased by 104.17 percent (table 24) to $2,437. In either case the gross income from young cattle shows a decided advantage for the sale of yearlings. However, it would be unwise to stop at this point.

The possibilities just discussed are all based upon a cattle herd with 100 breeding cows. Tables 9 to 12 indicate a wide variation in the total number of cattle required to maintain 100 cows in the breeding herd under the changes in conditions as analyzed. Table 11 shows that 126 head of cattle are required in order to maintain 100 cows in the breeding herd when the conditions are as stated in regard to selling calves. Table 9 shows that 181 head of cattle are required when yearlings are sold. Of the 126 head, 100, or 79 percent, are mature cows. Of the 181 head, 100, or 55 percent, are mature cows. Obviously, this introduces the problem of attempting to calculate some imaginary "unit" which will make it possible to reduce all these herds to a uniform basis. The "animal unit" has been widely used and widely misunderstood. It is supposed to represent the equivalent of a mature cow and is very useful for some purposes. It is the writer's observation that cattlemen prefer to think of their herd as a total. If they have 181 head of cattle, or 126 head, that is the number of cattle in which they are interested.

Accordingly, tables 13 to 16 have been prepared to show the total pounds of calf, cow, or yearling produced as "pounds per head of all cattle on the ranch", and tables 17 to 20 have been prepared

to give these pounds per head as equivalent "dollars per head of all cattle on the ranch."

Table 13 shows that a 70-percent calf crop with a 10-percent replacement of cows and a 5-percent death loss will give 166 pounds of calf sales and 40 pounds of cow sales or 206 pounds total for each head of all cattle on hand the first of the year (126 head, according to table 11).

Table 15 shows that, under these same conditions of a 70-percent calf crop, 10-percent replacement of cows, and 5-percent death loss, 201 pounds of yearling sales and 28 pounds of cow sales or a total of 229 pounds will be sold for each head of all cattle on hand the first of the year (181 head, according to table 9).

Table 17 indicates that the calf value will be $9.96 and the cow value $1.60—a total of $11.56. Total sales per head of all cattle in table 19 gives $12.30 as the yearling value and $1.12 as the cow value or a total sale of $13.42 per head of all cattle. All cases, of course, are based on 375-pound calves at 6 cents and 700-pound yearlings at 6 cents.

In the conditions stated, it was hoped that yearlings would sell at 750 pounds each and 6¼ cents, while calves would sell at 400 pounds each and 7½ cents. Since table 4 gives 106.7 percent as the relative weight for 400-pound calves and 107.1 percent as the relative weight for 750-pound yearlings, the easiest thing to do will be to multiply the 166 pounds of calf sales from table 13 by 106.7 (giving 177 pounds) and the 201 pounds of yearling sales from table 15 by 107.1 (giving 215 pounds). Since calf sales are to be at 7½ cents, the 177 pounds will bring in $13.28, which, added to the $1.60 cow sales shown in table 17, will give $14.88 as the anticipated income per head of all cattle from the assumed calf sales. By a similar calculation, the 215 pounds of yearlings at 6¼ cents are worth $13.44, which, added to the $1.12 cow sales, gives $14.56 per head of all cattle. Since a larger proportion of the total herd of cattle is young stuff, presumably requiring less feed and expense, it would appear from this comparison that the sale of yearlings would be slightly preferable. If sale prices were identical for calves and yearlings, the advantage for the yearlings would be more pronounced.

Since the entire herd contains a relatively large proportion of young cattle when sales are made as yearlings, it is obvious that there is an added advantage in the matter of comparative cost. It will cost less in feed to keep a short yearling over for sale as a long yearling than to feed a mature cow. All the yearlings held over, less their death loss, can be sold at the added weight, which, in the tables, has been arbitrarily assumed to be 325 extra pounds. With the mature breeding herd and calf crops of varying percentages, the entire 375 pounds of calf (less death loss) for each cow will not be produced except under conditions of 100-percent calf crops, which are practically unattainable under range conditions. If the

calf crop is only 70 percent, then 70 times 375 equals 26,250 or 262 pounds of calf per cow, ignoring death loss. The heavier expense per head for the breeding herd under these conditions results in less pounds per head for sale. This would indicate a further reason for selecting the yearling age as the best for sale.

3. What is the effect upon the total number of cattle needed for the same gross income if conditions of production change? Consider example number 1, where the final gross income, including cow sales, rose from $2,076 to $3,739. To get $2,076 from the improved method of herd management would require only 56 percent as many cattle. Since 202 head are required to produce $3,739 under the improved method (table 9), this indicates that only 113 head (56 percent of 202 head) of all ages would produce $2,076 under the new conditions. It required 180 head as originally operated.

This means that under the improved conditions, with higher calf crop, lower death loss, and so forth, a total of 113 head of cattle will produce as many dollars as formerly were produced with 180 head. This offers the possibility of a decided reduction in expenses of ranch operation, since 67 less head of all cattle will be kept in order to obtain the same total income.

4. How large a herd will be required to produce a gross income of $5,000 with 70-percent calf crop, 10-percent replacement, 5-percent death loss, heifers to calve as 3-year-olds, and yearling sales at 600 pounds at 6 cents? Table 22 shows $2,184 income from yearling sales when sale weights average 700 pounds, and $200 income from cow sales at 4 cents. Since 600 pounds is only 85.7 percent of 700 pounds (table 4), the $2,184 would be reduced to $1,872, making a total of $2,072, including cow sales. Five thousand dollars is 2.41 times $2,072; hence the herd of 181 head required to produce $2,072 from 600-pound yearlings at 6 cents must be increased by 2.41 times; hence size of herd required is 436 head. The use of the 6-cent price is largely responsible for this result. With a 7-cent average sale price, less total cattle would be needed for the $5,000 gross income.

These illustrations suggest some of the ways that the tables can be used to reduce the time and labor in connection with studying the cattle business. In all cases the calculations are based on a spring-count calf crop percentage, except tables 5 and 6 which have columns showing the numbers of calves or yearlings which can be sold per year per 100 cows when the calf crop percentage is based upon a fall count. Those who wish to use these columns will find it necessary to calculate their own weights and total values from calves or yearlings. The size of herd under conditions of a fall-count calf crop will be increased in each case by the extra number of calves carried over. Inspection of tables 5 and 6 will show that from 1 to 10 more calves and from 1 to 9 more yearlings will be shown as available for sale when a fall count is used, since the fall

count eliminates 1 death loss in making the calculations. Since the calves actually died, but were not counted, the spring basis was used for all tables that show final sale weights or income.

There is another problem which may confront the cattleman and which these tables may be of help in solving. That is, with the same total size of herd (for example, 300 head), which practice will give the most gross income from the same calf crop percentage: the sale of calves or the sale of yearlings, and the breeding of heifers to calve as 2-year-olds or to calve as 3-year-olds? Inspection of tables 9 to 12 will show that there is considerable variation in size of herd under these conditions. For illustration, assume that a herd had an 80-percent calf crop, 5-percent death loss, and 13 percent of cows replaced each year.

Table 9 shows that under these conditions a herd of 194 is necessary to maintain 100 breeding cows, when yearlings are sold and *heifers are bred to calve at 3 years.* Three hundred is 1.55 times 194, so the gross income results shown in table 22 should be multiplied by 1.55 to calculate the income from a herd of 300 head.

Similarly, table 10 shows that under conditions of an 80-percent calf crop, 5-percent death loss, and 13-percent replacement, a herd of 180 head is necessary to maintain 100 breeding cows when yearlings are sold and *heifers are bred to calve at 2 years.* Three hundred is 1.67 times 180, so in this case the gross income results shown in table 22 should be multiplied by 1.67 to calculate the income from a herd of 300 head.

The two following tables carry these calculations through for all conditions of this problem.

Size of herd to maintain 100 cows under conditions of an 80-percent calf crop, 5-percent death loss, and 13-percent replacement of cows, and ratio increase necessary to adjust a "100-cow" herd to "300 head of all cattle."

Condition	Size of herd	Ratio increase to calculate results from a herd of 300 head
Sale of yearlings:		
Heifers to calve at 3 years	194	1.55[1]
Heifers to calve at 2 years	180	1.67
Sale of calves:		
Heifers to calve at 3 years	132	2.27
Heifers to calve at 2 years	118	2.54

[1]That is, 1.55 times 194 equals 300.

Gross income from sale of young cattle from 100 cows under conditions of an 80-percent calf crop, 5-percent death loss, and 13-percent replacement of cows and from a "300" size herd.

Condition	Income as shown in tables 21 and 22[2]		Amount of increase to give sale from 300-head herd	Calculated gross income from 300 head	
	Calves or yearlings	Cow sales		Calves and yearlings	Total, including cow sales
Sale of yearlings:					
Heifers to calve					
at 3 years....	$2,436	$320	1.55	$3,776	$4,272
at 2 years....	2,436	320	1.67	4,068	4,602
Sale of calves:					
Heifers to calve					
at 3 years....	$1,395	$320	2.27	$3,167	$3,893
at 2 years....	1,395	320	2.54	3,543	4,356

[2]When sale price is 6 cents for young cattle and 4 cents for cows.

It would appear from this comparison that when prices are at 6 cents per pound for both calves and yearlings and the sale weights are as shown in the tables, namely, 375 pounds for calves and 700 pounds for yearlings, sale of yearlings shows better results than sale of calves. If yearlings sell normally at a weight of 675 pounds, the $3,776 and $4,068 values would be reduced to 96.4 percent (table 4) of those figures, or $3,640 and $3,922. Obviously, each man should consider this before making a final comparison. Any other change in price or sale weights should likewise be considered.

The sales of cows in the 100-cow herd are identical under the uniform conditions assumed, whether heifers are bred to calve as 2-year-olds or as 3-year-olds. These sales amount to $320, as shown by tables 21 and 22. When $320 cow sales from 100 cows are increased to find the values from a herd of 300 total of all ages of cattle, and the same ratio of increase is used as just shown for yearling and calf sales, the new values are $496, $534, $726, and $813, reading down on the table (values not shown separately in the table). When these are added to the yearling and calf sales, they give the result shown in the last column of the table. The difference in possible income from a total herd of 300 head arises from the fact that when the heifers calve as 3-year-olds an extra bunch of heifers must be held over from 2 years to 3 years of age. After the herd is established, the same number will be kept back each year, but the total herd will have the extra unbred heifers. The question here for the cattleman to decide from his own experience would be whether he could breed his cattle to calve early in the spring so that heifers would make a good growth and be able to enter the herd as 2-year-olds. Also, he should consider whether he could maintain the same average calf crop for the entire breeding herd when heifers calved at

2 years of age. The small advantage just shown theoretically for the 2-year condition might easily be offset by these possibilities and by the lower sale weight of cows when heifers are bred as 2-year-olds, and also the greater actual death loss of 2-year-old heifers at calving time.

Prices

The sale price for calves and yearlings has been uniformly at 6 cents in all tables. Table 24 shows other prices from 4 cents to 10 cents as a percentage of a 6-cent price. In the 18 years, 1921 to 1938, inclusive, the monthly average price of stocker and feeder cattle on the Chicago market was $6.97 in September, $6.87 in October, and $6.72 in November. The average canner and butcher cow price for these same 18 years was $3.67 in September, $3.57 in October, and $3.50 in November. The cost of shipping cattle to Chicago from Colorado has varied during those same years and will vary as between different shipping points. However, 80 cents to $1 per hundredweight will approximately cover such marketing charges. This, subtracted from the Chicago price for feeders, would indicate that 6 cents was very close to a long-time feeder cattle price. The 29-year, 1910 to 1938, average price paid to producers in Colorado as reported by the Bureau of Crop and Livestock Estimates for the months of October and November was $6.39. In Colorado Experiment Station Bulletin 435 (p. 71) Denver prices for the 9 years, 1927 to 1935, were analyzed to find the net price at the ranch. It was found that heifer calves netted $5.82; steer calves, $6.95; yearling heifers, $5.68; and yearling steers, $6.78; while cows of all classes brought $4.90.

In consideration of all these possibilities, a long-time price of 6 cents for calves and yearlings and 4 cents for cows seemed reasonable under Colorado conditions (the cow price in Colorado should allow for some grass-fat cows, while very few calves or yearlings are sold from ranches for slaughter). Table 23 shows the value of cow sales at prices varying from 2 cents to 6 cents for 1 to 10 cows. These values can be substituted for the uniform 4-cent values used in tables 21 and 22 if desired.

Range in Size of Herd

Tables 9 to 12 show the wide range in numbers of cattle required to maintain 100 cows. These tables deserve careful study in connection with any grazing program. Obviously, the larger herds are more flexible in the face of drought, since the young stuff can be sold without reducing the foundation breeding herd, thus increasing the chance of "weathering" the lack of feed but forcing a change in sale practice from yearlings to calves.

Little has been said about the size of herd necessary for a satisfactory income. The purpose of the tables has been to present in condensed form the gross income from 100 breeding cows under a wide variation in conditions. If a cattleman has 200 or 300 cows in his herd, it should be possible to multiply the results shown in the tables by 2 or 3 to find the possibilities with the larger herd.

Neither has anything been said concerning the net income. This depends upon local conditions. Some Colorado cattlemen operate where the winter feed bill is normally light; others where heavy winter feeding is necessary. Some men have fenced, controlled range where one man can manage several hundred head of cattle; others must pay for extra riders and supervision to avoid loss. Some graze their cattle where poison plants are a serious menace; others are fortunate in having few causes for death loss. To attempt to recognize all these variations and their effect upon net income would be to lose oneself in calculation. Each cattleman has a fairly close idea of his total expense. If he will divide that total by the number of cattle on hand January 1 to ascertain a "cost per head" and, at the same time, divide the total pounds of cattle sold during the year by the number of head of cattle in the herd on January 1, he will get the "pounds produced per head." With these two figures, he can look at table 25 to work out a close estimate of the average cost per hundredweight of sales of all beef from his ranch. Suppose, for example, that cost per head was $15 and pounds produced per head were 275. Under these conditions, beef cost $5.45 per hundredweight. If sales were at $6.50 net, then $1.05 would be the net per hundredweight. This multiplied by the total sales would give a close estimate of the net for the ranch. One caution—cattlemen should be careful to include all expenses in calculating their "cost per head." Depreciation on improvements and equipment should be included. Taxes, paid interest, and all other expense should be included. Probably "interest on one's own investment" and "value of operator's own labor" should be omitted since they will be paid from the net income. This gives the individual a method of using the tables to determine the required size of herd. If, as just shown, the net should be $1.05 per hundredweight, and if a net income of $2,500 is desired, then 238,100 pounds of cattle must be sold. Tables 7 and 8 show the pounds of total sales from calf or yearling sales (with 375-pound calf and 700-pound yearling sales). If this herd has an 80-percent calf crop, 10-percent replacement of cows, and 5-percent death loss, then 29,375 pounds, calf basis, or 47,700 pounds, yearling basis, would be sold per 100 cows. By division, the herd required will need to be 8.1 times as large if calves are sold or 5.0 times as large if yearlings are sold.

If heifers calve as 2-year-olds, the size of the total herd when calves are sold would be 115 (from table 12) times 8.1 or 932 head, and 180 (table 10) times 5.0 or 900 head when yearlings are sold.

If sale weights are different from those used in these tables, the size of herd required would naturally be affected by this condition.

Management as a Factor

The wide range of possibilities dependent upon percentage calf crop, death loss, sale weights, and other conditions indicates the importance of the internal management of the cattle business. This is well recognized, but a study of these tables will give a quick method of comparison which will serve as a measure of what might be expected if any specific change can be put into effect.

Conclusion

The purpose of these tables, as previously stated, has been to condense, in one convenient form, data on the effect of a wide range in the factors which affect the cattle business. It should not be assumed that the author advocates any particular extreme nor that he assumes that actual conditions would agree with these calculations at every point. It is assumed, however, that with these tables as a starting point, one can calculate actual conditions with much less time and effort.

TABLE 1.—*The effect of death loss upon the number of heifers or steers remaining at the end of 1 or more years from 100 cows.*

Calf crop (spring count)	Equivalent heifers or steers	Number heifers or steers end of first year when death loss is:			Number heifers or steers end of second year when death loss is:		
		2%	5%	10%	2%	5%	10%
50	25	24.5	23.75	22.5	24.01	22.55	20.25
55	27.5	26.95	26.12	24.75	26.41	24.81	22.28
60	30	29.4	28.5	27	28.81	27.08	24.30
65	32.5	31.85	30.88	29.25	31.21	29.34	26.32
70	35	34.3	33.25	31.5	33.61	31.59	28.35
75	37.5	36.75	35.62	33.75	36.02	33.84	30.38
80	40	39.2	38	36	38.42	36.10	32.40
85	42.5	41.65	40.38	38.25	40.82	38.36	34.42
90	45	44.10	42.75	40.5	43.22	40.61	36.45
95	47.5	46.55	45.12	42.75	45.62	42.86	38.48

Note: This table gives exact effects. In later tables the nearest "whole number" is used as the basis of sales. In Table 1 it is assumed that half the calf crop will be heifers and half steers. For example, with a 50-percent calf crop it is assumed there would be 25 steer calves and 25 heifer calves. A 2-percent death loss would leave 25 times .98 or 24.5 steers and 24.5 heifers at the end of the first year. Then 24.5 times .98 would leave 24.01 of each at the end of the second year.

TABLE 1.—(*Continued.*)

Calf crop (spring count)	Number heifers or steers end of third year when death loss is:			Number heifers or steers end of fourth year when death loss is:		
	2%	5%	10%	2%	5%	10%
50	23.53	21.42	18.22	23.06	20.35	16.40
55	25.88	23.57	20.05	25.36	22.39	18.04
60	28.23	25.73	21.87	27.67	24.44	19.68
65	30.59	27.87	23.69	29.98	26.48	21.32
70	32.94	30.01	25.52	32.28	28.51	22.97
75	35.3	32.15	27.34	34.59	30.54	24.61
80	37.65	34.3	29.16	36.90	32.58	26.24
85	40.00	36.44	30.98	39.20	34.62	27.88
90	42.36	38.58	32.80	41.51	36.65	29.52
95	44.71	40.72	34.63	43.82	38.68	31.17

TABLE 1a.—*Number of heifers or steers remaining from 100 cows after 1 to 4 death losses.*

Calf crop	Equivalent heifers or steers	Number heifers or steers after one death loss:			Number heifers or steers after second death loss:		
Death loss		2%	5%	10%	2%	5%	10%
Column	1	2	3	4	5	6	7
50	25	24	24	22	24	23	20
55	27.5	27	26	25	26	25	22
60	30	29	28	27	29	27	24
65	32.5	32	31	29	31	29	26
70	35	34	33	32	34	32	28
75	37.5	37	36	34	36	34	30
80	40	39	38	36	38	36	32
85	42.5	42	40	38	41	38	34
90	45	44	43	40	43	41	36
95	47.5	47	45	43	46	43	38

TABLE 1a.—(*Continued.*)

Calf crop	Number heifers or steers after third death loss:			Number heifers or steers after fourth death loss:		
Death loss	2%	5%	10%	2%	5%	10%
Column	8	9	10	11	12	13
50	24	21	18	23	20	16
55	26	24	20	25	22	18
60	28	26	22	28	24	20
65	31	28	24	30	26	21
70	33	30	26	32	29	23
75	35	32	27	35	31	25
80	38	34	29	37	33	26
85	40	36	31	39	35	28
90	42	39	33	42	37	30
95	45	41	35	44	39	31

Table 1-a can be used as a basis for special calculations where the methods of handling cattle differ from those used in these tables. For example, column 1 shows the number of either heifer calves or steer calves that would result from the corresponding calf crop, assuming that one-half of the calves were each. Columns 2 to 4, inclusive, show the reduced number of either heifers or steers after 1 year's death loss. Where cattlemen make their final count of calves in the fall, this would give the number of long yearlings. If steers are to be kept for sale at older ages, the numbers (in columns 2 to 4) indicate the normal number of heifers from which replacements can be kept. Using the replacement figures shown in table 2, the number of heifers normally available for sale can be easily calculated.

Then columns 5 to 7, inclusive, will show the numbers of long 2-year-old steers available for sale the next year and columns 8 to

10, inclusive, will show the number of long 3-year-old steers available for sale.

Columns 11 to 13 have been included so that these same comparisons can be carried through when the calf count is made in the spring. In that case, columns 11 to 13 will be the long 3-year-olds because the first death loss (columns 2 to 4, inclusive) will apply to the calves the year they were born. In the same way, the number of head shown in the various columns indicates the increased number of steers to be added to the size of herd as shown in table 9 in order to maintain 100 breeding cows and sell aged steers. For example, table 9 shows 181 total size of herd when there is a 70-percent calf crop, 5-percent death loss, and 10-percent replacement of cows. Table 1-a shows, under column 3, that 33 steers will be carried over (when a fall count of the calf crop is used), and column 6 shows 32 steers carried over (when a spring count of the calf crop is used). Hence the total herd will be 213 or 214 in order to sell long 2-year-old steers. If long 3-year-old steers are sold, the extra number of head from column 6 or column 9 should be added to allow for the extra age class, making the total size of herd 243 or 246 head.

Also the number of head as shown in table 1-a can be multiplied by the expected weight and price to find the gross income from steer sales under any given condition.

TABLE 2.—*Effect of death loss upon the number of heifer calves saved at the end of the year to replace cows in 100-cow herd.*

Percentage replacement	Death loss	Number heifer calves saved to permit heifers to enter the breeding herd at age		Arbitrary number used in all calculations
		2 years	3 years	
10	2	10.2	10.41	10
	5	10.53	11.08	11
	10	11.11	12.34	11
12.5	2	12.76	13.02	13
(13)	5	13.16	13.85	14
	10	13.89	15.43	14
16⅔	2	17.01	17.36	17
(17)	5	17.55	18.47	18
	10	18.52	20.58	19

Note: This table gives the number of heifer calves to be saved in "whole numbers"; thence the stated death loss is only approximate. Because of this the number of heifer calves to be saved is used in other tables as shown in the last column above, whether they are put in the breeding herd at the end of the second year or at the end of the third year. Also, replacement percentage is used as an even figure of 13 and 17 in all tables.

TABLE 3.—*Effect of death loss and replacement upon number of cows for sale per 100 in the breeding herd.*

Death loss	Sale of cows per 100 cows when rate of replacement is: 10%	13%	17%
2%	8	11	15
5%	5	8	12
10%	..	3	7

Note: If replacement is 10 per 100 cows and death loss 2 percent, then 2 cows from the 100 would be lost. The 10 cows to be replaced less the 2 that died would leave 8 to be sold either as fat cows or "canners."

TABLE 4.—*Percentage change in sale weight compared to 375-pound and 700-pound bases.*

Calves		Yearlings	
Weight per head	Percent	Weight per head	Percent
300	80	500	71.4
325	86.7	525	75
350	93.3	550	78.6
375	100	575	82.1
400	106.7	600	85.7
425	113.3	625	89.3
450	120	650	92.9
475	126.7	675	96.4
		700	100
		725	103.6
		750	107.1
		775	110.7
		800	114.3

Note: All tables dealing with production or sales have been prepared on the basis of calves weighing 375 pounds, and yearlings weighing 700 pounds. Percentages given in this table should be used to multiply the figure in other tables where weights other than 375 pounds and 700 pounds are concerned. For instance, in table 7 it is shown that when calves are sold at 375 pounds 14,625 pounds will be sold from 100 breeding cows when there is a 50-percent calf crop, 2-percent death loss, and 10-percent of the cows are replaced. If calves are sold at 400 pounds, the 14,625 should be multiplied by 106.7 as shown in this table to get the number of pounds sold.

TABLE 5.—*Possible number of calves available for sale from 100 breeding cows.*

Calf crop	Percentage of cows replaced	(a) Calves available, based on fall count of calf crops*			(b) Calves available, based on spring count of calf crop*		
		Death loss 2%	5%	10%	Death loss 2%	5%	10%
50	10	40	39	39	39	36	34
	13	37	36	36	36	34	31
	17	33	32	31	32	30	26
55	10	45	44	44	44	41	38
	13	42	41	41	41	38	36
	17	38	37	36	37	34	30
60	10	50	49	49	49	46	43
	13	47	46	46	46	43	40
	17	43	42	41	42	39	35
65	10	55	54	54	54	51	48
	13	52	51	51	51	48	44
	17	48	47	46	47	44	40
70	10	60	59	59	59	56	52
	13	57	56	56	56	52	49
	17	53	52	51	52	48	44
75	10	65	64	64	64	60	56
	13	62	61	61	60	57	54
	17	58	57	56	56	53	50
80	10	70	69	69	68	65	61
	13	67	66	66	65	62	58
	17	63	62	61	61	58	53
85	10	75	74	74	73	70	66
	13	72	71	71	70	67	62
	17	68	67	66	66	63	58
90	10	80	79	79	78	74	70
	13	77	76	76	75	72	67
	17	73	72	71	71	68	62
95	10	85	84	84	83	79	74
	13	82	81	81	80	76	72
	17	78	77	76	76	72	66

*The difference between (a) and (b) is due to the time when the calf crop percentage is calculated. With a fall count, no death loss of calves will be recorded; with a spring count, one season's death loss will be taken into account. In each case the number available for sale is the nearest "whole number" after deducting the number of heifers kept back for replacements as shown in table 2.

TABLE 6.—*Possible number of yearlings available for sale from 100 breeding cows.*

Calf crop	Percentage of cows replaced	(a) Yearlings available, based on fall count of calf crop*			(b) Yearlings available, based on spring count of calf crop*		
		Death loss			Death loss		
		2%	5%	10%	2%	5%	10%
50	10	39	36	34	38	34	30
	13	36	34	31	35	31	26
	17	32	30	26	31	27	22
55	10	44	41	38	43	39	34
	13	41	38	36	40	36	31
	17	37	34	30	36	32	26
60	10	49	46	43	48	43	38
	13	46	43	40	45	40	35
	17	42	39	35	41	36	30
65	10	54	51	48	52	48	42
	13	51	48	44	49	45	39
	17	47	44	40	45	41	34
70	10	59	56	52	57	52	46
	13	56	52	49	54	49	43
	17	52	48	44	50	45	38
75	10	64	60	56	62	57	50
	13	60	57	54	59	54	47
	17	56	53	48	55	50	42
80	10	68	65	61	67	61	54
	13	65	62	58	64	58	51
	17	61	58	53	60	54	46
85	10	73	70	66	72	66	58
	13	70	67	62	69	63	55
	17	66	63	58	65	59	50
90	10	78	74	70	76	70	62
	13	75	72	67	73	67	59
	17	71	68	62	69	63	54
95	10	83	79	74	81	75	66
	13	80	76	72	78	72	63
	17	76	72	66	74	68	58

*The difference between (a) and (b) is due to the time when the calf crop percentage is calculated. With a fall count, yearlings will have only one death loss before sale; with a spring count, two death losses will have been deducted before yearlings are sold. In each case the number available for sale is the nearest "whole number" after deducting the number of heifers kept back for replacements.

TABLE 7.—*Pounds of calf sales and total sales from 100 breeding cows.*

Calf crop	Percentage of cows replaced	Pounds calves sold in fall at 375 pounds per head*			Total pounds sales—calves plus cows		
		Death loss 2%	5%	10%	Death loss 2%	5%	10%
50	10	14,625	13,500	12,750	22,625	18,500	12,750
	13	13,500	12,750	11,625	24,500	20,750	14,625
	17	12,000	11,250	9,750	27,000	23,250	16,750
55	10	16,500	15,375	14,250	24,500	20,375	14,250
	13	15,375	14,250	13,500	26,375	22,250	16,500
	17	13,875	12,750	11,250	28,875	24,750	18,250
60	10	18,375	17,250	16,125	26,375	22,250	16,125
	13	17,250	16,125	15,000	28,250	24,125	18,000
	17	15,750	14,625	13,125	30,750	26,625	20,125
65	10	20,250	19,125	18,000	28,250	24,125	18,000
	13	19,125	18,000	16,500	30,125	26,000	19,500
	17	17,625	16,500	15,000	32,625	28,500	22,000
70	10	22,125	21,000	19,500	30,125	26,000	19,500
	13	21,000	19,500	18,375	32,000	27,500	21,375
	17	19,500	18,000	16,500	34,500	30,000	23,500
75	10	24,000	22,500	21,000	32,000	27,500	21,000
	13	22,500	21,375	20,250	33,500	29,375	23,250
	17	21,000	19,875	18,750	36,000	31,875	25,750
80	10	25,500	24,375	22,875	33,500	29,375	22,875
	13	24,375	23,250	21,750	35,375	31,250	24,750
	17	22,875	21,750	19,875	37,875	33,750	26,875
85	10	27,375	26,250	24,750	35,375	31,250	24,750
	13	26,250	25,125	23,250	37,250	33,125	26,250
	17	24,750	23,625	21,750	39,750	35,625	28,750
90	10	29,250	27,750	26,250	37,250	32,750	26,250
	13	28,125	27,000	25,125	39,125	35,000	28,125
	17	26,625	25,500	23,250	41,625	37,500	30,250
95	10	31,125	29,625	27,750	39,125	34,625	27,750
	13	30,000	28,500	27,000	41,000	36,500	30,000
	17	28,500	27,000	24,750	43,500	39,000	31,750

*The pounds of calf sales in this table are based upon the numbers of calves available for sale as shown in table 5(b) where the calf crop was based upon a spring count of calves. To avoid confusion, no table has been prepared based upon table 5(a). Cows sold at 1,000 pounds each.

TABLE 8.—*Pounds yearlings and total sales from 100 breeding cows.*

Calf crop	Percentage of cows replaced	Pounds yearlings sold at 700 pounds per head*			Total pounds sales—yearlings plus cows*		
		Death loss			Death loss		
		2%	5%	10%	2%	5%	10%
50	10	26,600	23,800	21,000	34,600	28,800	21,000
	13	24,500	21,700	18,200	35,500	29,700	21,200
	17	21,700	18,900	15,400	36,700	30,900	22,400
55	10	30,100	27,300	23,800	38,100	32,300	23,800
	13	28,000	25,200	21,700	39,000	33,200	24,700
	17	25,200	22,400	18,200	40,200	34,400	25,200
60	10	33,600	30,100	26,600	41,600	35,100	26,600
	13	31,500	28,000	24,500	42,500	36,000	27,500
	17	28,700	25,200	21,000	43,700	37,200	28,000
65	10	36,400	33,600	29,400	44,400	38,600	29,400
	13	34,300	31,500	27,300	45,300	39,500	30,300
	17	31,500	28,700	23,800	46,500	40,700	30,800
70	10	39,900	36,400	32,200	47,900	41,400	32,200
	13	37,800	34,300	30,100	48,800	42,300	33,100
	17	35,000	31,500	26,600	50,000	43,500	33,600
75	10	43,400	39,900	35,000	51,400	44,900	35,000
	13	41,300	37,800	32,900	52,300	45,800	35,900
	17	38,500	35,000	29,400	53,500	47,000	36,400
80	10	46,900	42,700	37,800	54,900	47,700	37,800
	13	44,800	40,600	35,700	55,800	48,600	38,700
	17	42,000	37,800	32,200	57,000	49,800	39,200
85	10	50,400	46,200	40,600	58,400	51,200	40,600
	13	48,300	44,100	38,500	59,300	52,100	41,500
	17	45,500	41,300	35,000	60,500	53,300	42,000
90	10	53,200	49,000	43,400	61,200	54,000	43,400
	13	51,100	46,900	41,300	62,100	54,900	44,300
	17	48,300	44,100	37,800	63,300	56,100	44,800
95	10	56,700	52,500	46,200	64,700	57,500	46,200
	13	54,600	50,400	44,100	65,600	58,400	47,100
	17	51,800	47,600	40,600	66,800	59,600	47,600

*The pounds of yearling sales in this table are based upon the number of yearlings available for sale as shown in table 6(b) where the calf crop was based upon a spring count of calves. To avoid confusion, no table has been prepared upon table 6(a). Cows sold at 1,000 pounds each.

TABLE 9.—*Size of herd, yearling basis, to maintain 100 breeding cows when heifers enter herd to calve at 3 years of age.*

Calf crop	Percentage of cows replaced	Total herd* Death loss 2%	5%	10%	Number cows	Number bulls	Number heifers kept for replacement Death loss 2%	5%	10%	Short yearlings end of year Death loss 2%	5%	10%
50	10	163	163	160	100	4	10	11	11	49	48	45
	13	166	166	163			13	14	14			
	17	170	170	168			17	18	19			
55	10	168	167	165	100	4	10	11	11	54	52	50
	13	171	170	168			13	14	14			
	17	175	174	173			17	18	19			
60	10	173	172	169	100	4	10	11	11	59	57	54
	13	176	175	172			13	14	14			
	17	180	179	177			17	18	19			
65	10	178	177	173	100	4	10	11	11	64	62	58
	13	181	180	176			13	14	14			
	17	185	184	181			17	18	19			
70	10	183	181	178	100	4	10	11	11	69	66	63
	13	186	184	181			13	14	14			
	17	190	188	186			17	18	19			
75	10	188	186	183	100	4	10	11	11	74	71	68
	13	191	189	186			13	14	14			
	17	195	193	191			17	18	19			
80	10	192	191	187	100	4	10	11	11	78	76	72
	13	195	194	190			13	14	14			
	17	199	198	195			17	18	19			
85	10	197	196	191	100	4	10	11	11	83	81	76
	13	200	199	194			13	14	14			
	17	204	203	199			17	18	19			
90	10	202	201	196	100	4	10	11	11	88	86	81
	13	205	204	199			13	14	14			
	17	209	208	204			17	18	19			
95	10	207	205	201	100	4	10	11	11	93	90	86
	13	210	208	204			13	14	14			
	17	214	212	209			17	18	19			

*Based upon the number of short yearlings at the end of the year resulting from a spring calf-crop count and the number of replacement heifers held over as shown in table 2.

TABLE 10.—*Size of herd, yearling basis, to maintain 100 breeding cows when heifers enter herd to calve at 2 years of age.*

Calf crop	Total herd* Death loss 2%	5%	10%	Number cows	Number bulls	Short yearlings end of year Death loss 2%	5%	10%
50	153	152	149	100	4	49	48	45
55	158	156	154	100	4	54	52	50
60	163	161	158	100	4	59	57	54
65	168	166	162	100	4	64	62	58
70	173	170	167	100	4	69	66	63
75	178	175	172	100	4	74	71	68
80	182	180	176	100	4	78	76	72
85	187	185	180	100	4	83	81	76
90	192	190	185	100	4	88	86	81
95	197	194	190	100	4	93	90	86

*The number of all cattle in this case is not affected by replacement percentage since all short yearlings are held over, of which it is assumed the required number will be bred and placed in the herd at the end of the next season before yearlings are sold.

TABLE 11.—*Size of herd, calf basis, to maintain 100 breeding cows when heifers are bred to calve at 3 years of age.*

	Percentage of cows replaced	Total herd* Death loss 2%	5%	10%	Number heifers kept for replacement Death loss 2%	5%	10%
All calf crops	10	124	126	126	20	22	22
	13	130	132	132	26	28	28
	17	138	140	142	34	36	38

*Since all surplus calves are sold, the herd is the same size regardless of size of calf crop, and the only variation is due to the number of short yearlings plus long yearling heifers saved to allow for differences in death loss and replacement. As stated in connection with table 2, the number of heifers saved each year as calves is assumed to be the same, regardless of whether they face 2 or 1 season's death loss, because of the necessity for dealing in whole numbers which makes uniform calculation of death loss impossible.

TABLE 12.—*Size of herd, calf basis, to maintain 100 breeding cows when heifers are bred to calve at 2 years of age.*

	Percentage of cows replaced	Total herd* Death loss 2%	5%	10%	Number heifers kept for replacement Death loss 2%	5%	10%
All calf crops	10	114	115	115	10	11	11
	13	117	118	118	13	14	14
	17	121	122	123	17	18	19

*See note, table 11.

TABLE 13.—*Pounds of calf and cow sales per head based upon heifers entering herd at 3 years of age.*

Calf crop	Percentage of cows replaced	Pounds calf sales			Pounds cow sales			Total pounds calf and cow sales per head in the herd		
Death loss		2%	5%	10%	2%	5%	10%	2%	5%	10%
50	10	118	107	101	64	40	..	182	147	101
	13	103	96	88	85	61	23	188	157	111
	17	87	80	69	109	86	49	196	166	118
55	10	134	122	113	64	40	...	198	162	113
	13	118	107	102	85	61	23	203	168	125
	17	100	91	79	109	86	49	209	177	128
60	10	149	137	128	64	40	...	213	177	128
	13	132	122	113	85	61	23	217	183	136
	17	114	104	93	109	86	49	223	190	142
65	10	164	151	143	64	40	...	228	191	143
	13	147	136	125	85	61	23	232	197	148
	17	127	118	106	109	86	49	236	204	155
70	10	179	166	155	64	40	...	243	206	155
	13	161	147	139	85	61	23	246	208	162
	17	141	128	116	109	86	49	250	214	165
75	10	194	178	167	64	40	...	258	218	167
	13	173	161	153	85	61	23	258	222	176
	17	152	142	132	109	86	49	261	228	181
80	10	206	193	182	64	40	...	270	233	182
	13	187	176	164	85	61	23	272	237	187
	17	165	155	140	109	86	49	274	241	189
85	10	221	208	196	64	40	...	285	248	196
	13	201	190	176	85	61	23	286	251	199
	17	179	168	153	109	86	49	288	254	202
90	10	236	220	208	64	40	...	300	260	208
	13	216	204	190	85	61	23	301	265	213
	17	193	182	164	109	86	49	302	268	213
95	10	252	235	220	64	40	...	316	275	220
	13	230	215	204	84	61	23	315	276	227
	17	206	192	175	109	86	49	315	278	224

Note: This table is based upon the production from 100 cows in the breeding herd as shown in table 7 and the corresponding size of herd as shown in table 11.

TABLE 14.—*Pounds of calf and cow sales per head based upon heifers entering herd at 2 years of age.*

Calf crop	Percentage of cows replaced	Pounds calf sales			Pounds cow sales			Total pounds calf and cow sales per head in the herd		
Death loss		2%	5%	10%	2%	5%	10%	2%	5%	10%
50	10	128	118	111	70	43	...	198	161	111
	13	115	108	99	94	68	25	209	176	124
	17	99	92	79	124	98	57	223	190	136
55	10	145	134	124	70	43	...	215	177	124
	13	131	120	115	94	68	25	225	188	140
	17	115	105	91	124	98	57	239	203	148
60	10	161	150	140	70	43	...	231	193	140
	13	147	136	127	94	68	25	241	204	152
	17	130	120	107	124	98	57	254	218	164
65	10	178	167	156	70	43	...	248	210	156
	13	163	152	140	94	68	25	257	220	165
	17	146	135	122	124	98	57	270	234	179
70	10	194	183	170	70	43	...	264	226	170
	13	180	165	156	94	68	25	274	233	181
	17	161	148	134	124	98	57	285	246	191
75	10	211	196	183	70	43	...	281	239	183
	13	192	181	172	94	68	25	286	249	197
	17	174	163	152	124	98	57	298	261	209
80	10	224	212	199	70	43	...	294	255	199
	13	208	197	185	94	68	25	302	265	210
	17	189	179	161	124	98	57	313	277	218
85	10	240	227	215	70	43	...	310	272	215
	13	224	213	197	94	68	25	318	281	222
	17	204	194	177	124	98	57	328	292	234
90	10	257	242	228	70	43	...	327	285	228
	13	240	229	213	94	68	25	334	297	238
	17	220	209	189	124	98	57	344	307	246
95	10	273	258	241	70	43	...	343	301	241
	13	256	241	229	94	68	25	350	309	254
	17	236	222	201	124	98	57	360	320	258

Note: This table is based upon the production from 100 cows in the breeding herd as shown in table 7 and the corresponding size of herd as shown in table 12.

TABLE 15.—*Pounds of yearling and cow sales per head based upon heifers entering herd at 3 years of age.*

Calf crop	Percentage of cows replaced	Pounds yearling sales			Pounds cow sales			Total pounds yearling and cow sales per head in the herd		
Death loss		2%	5%	10%	2%	5%	10%	2%	5%	10%
50	10	163	146	131	49	31	...	212	177	131
	13	148	131	111	66	48	19	214	179	130
	17	128	111	91	88	71	42	216	182	133
55	10	179	163	144	48	30	...	227	193	144
	13	164	148	129	64	47	18	228	195	147
	17	144	129	105	86	69	41	230	198	146
60	10	194	175	157	46	29	...	240	204	157
	13	179	160	142	62	46	18	241	206	160
	17	159	141	118	84	67	40	243	208	158
65	10	204	190	170	45	28	...	249	218	170
	13	190	175	155	60	44	17	250	219	172
	17	170	156	131	81	65	39	251	221	170
70	10	218	201	181	44	28	...	262	229	181
	13	203	186	166	59	44	17	262	230	183
	17	184	167	143	79	64	38	263	231	181
75	10	231	214	191	42	27	...	273	241	191
	13	216	200	177	58	42	16	274	242	193
	17	197	181	154	77	62	37	274	243	191
80	10	244	224	202	42	26	...	286	250	202
	13	230	209	188	56	41	15	286	250	203
	17	211	191	165	75	61	36	286	252	201
85	10	256	236	212	40	26	...	296	262	212
	13	242	222	198	54	40	16	296	262	214
	17	223	203	176	73	59	35	296	262	211
90	10	263	244	221	40	25	...	303	269	221
	13	249	230	207	54	39	15	303	269	222
	17	231	212	185	72	58	34	303	270	219
95	10	274	256	230	38	24	...	312	280	230
	13	260	243	216	52	38	14	312	281	230
	17	242	225	194	70	56	33	312	281	227

Note: This table is based upon the production from 100 cows in the breeding herd as shown in table 8 and the corresponding size of herd as shown in table 9.

TABLE 16.—*Pounds of yearling and cow sales per head based upon heifers entering herd at 2 years of age.*

Calf crop	Percentage of cows replaced	Pounds yearling sales			Pounds cow sales			Total pounds yearling and cow sales per head in the herd		
Death loss		2%	5%	10%	2%	5%	10%	2%	5%	10%
50	10	174	161	141	52	33	...	226	194	141
	13	160	147	131	72	53	21	232	200	152
	17	142	129	113	98	79	47	240	208	160
55	10	190	179	159	51	33	...	241	212	159
	13	177	166	145	70	51	20	247	217	165
	17	159	148	127	95	77	46	254	225	173
60	10	206	191	173	49	31	...	255	222	173
	13	193	178	159	68	50	19	261	228	178
	17	176	161	142	92	74	44	268	235	186
65	10	217	207	186	47	30	...	264	237	186
	13	204	194	173	66	48	18	270	242	191
	17	188	177	156	89	72	43	277	249	199
70	10	231	218	197	46	30	...	277	248	197
	13	218	206	184	64	47	18	282	253	202
	17	202	189	168	87	71	42	289	260	210
75	10	244	232	208	45	28	...	289	260	208
	13	232	220	195	62	46	18	294	266	213
	17	216	204	179	84	69	41	300	273	220
80	10	258	241	219	44	28	...	302	269	219
	13	246	229	207	60	45	17	306	274	224
	17	231	214	191	82	66	40	313	280	231
85	10	270	254	229	42	26	...	312	280	229
	13	258	242	218	59	43	16	317	285	234
	17	243	227	202	81	65	39	324	292	241
90	10	277	262	238	42	26	...	319	288	238
	13	266	251	227	57	42	16	323	293	243
	17	252	236	212	78	63	38	330	299	250
95	10	288	274	247	40	26	...	328	300	247
	13	277	263	236	56	42	16	333	305	252
	17	263	249	221	76	62	37	339	311	258

Note: This table is based upon the production from 100 cows in the breeding herd when heifers are bred to calve at 2 years of age and the corresponding size of herd as shown in table 10.

TABLE 17.—*Value of calf and cow sales per head based upon heifers entering herd at 3 years of age.*

Calf crop	Percentage of cows replaced	Value calf sales @ 6 cents			Value cow sales @ 4 cents			Total value calf and cow sales per head in the herd		
Death loss		2%	5%	10%	2%	5%	10%	2%	5%	10%
50	10	$7.08	$6.42	$6.06	$2.56	$1.60	....	$9.64	$8.02	$6.06
	13	6.18	5.76	5.28	3.40	2.44	$ .92	9.58	8.20	6.20
	17	5.22	4.80	4.14	4.36	3.44	1.96	9.58	8.24	6.10
55	10	8.04	7.32	6.78	2.56	1.60	....	10.60	8.92	6.78
	13	7.08	6.42	6.12	3.40	2.44	.92	10.48	8.86	7.04
	17	6.00	5.46	4.74	4.36	3.44	1.96	10.36	8.90	6.70
60	10	8.94	8.22	7.68	2.56	1.60	....	11.50	9.82	7.68
	13	7.92	7.32	6.78	3.40	2.44	.92	11.32	9.76	7.70
	17	6.84	6.24	5.58	4.36	3.44	1.96	11.20	9.68	7.54
65	10	9.84	9.06	8.58	2.56	1.60	....	12.40	10.66	8.58
	13	8.82	8.16	7.50	3.40	2.44	.92	12.22	10.60	8.42
	17	7.62	7.08	6.36	4.36	3.44	1.96	11.98	10.52	8.32
70	10	10.74	9.96	9.30	2.56	1.60	....	13.30	11.56	9.30
	13	9.66	8.82	8.34	3.40	2.44	.92	13.06	11.26	9.26
	17	8.46	7.68	6.96	4.36	3.44	1.96	12.82	11.12	8.92
75	10	11.64	10.68	10.02	2.56	1.60	....	14.20	12.28	10.02
	13	10.38	9.66	9.18	3.40	2.44	.92	13.78	12.10	10.10
	17	9.12	8.52	7.92	4.36	3.44	1.96	13.48	11.96	9.88
80	10	12.36	11.58	10.92	2.56	1.60	....	14.92	13.18	10.92
	13	11.22	10.56	9.84	3.40	2.44	.92	14.62	13.00	10.76
	17	9.90	9.30	8.40	4.36	3.44	1.96	14.26	12.74	10.36
85	10	13.26	12.48	11.76	2.56	1.60	....	15.82	14.08	11.76
	13	12.06	11.40	10.56	3.40	2.44	.92	15.46	13.84	11.48
	17	10.74	10.08	9.18	4.36	3.44	1.96	15.10	13.52	11.14
90	10	14.16	13.20	12.48	2.56	1.60	....	16.72	14.80	12.48
	13	12.96	12.24	11.40	3.40	2.44	.92	16.36	14.68	12.32
	17	11.58	10.92	9.84	4.36	3.44	1.96	15.94	14.36	11.80
95	10	15.12	14.10	13.20	2.56	1.60	....	17.68	15.70	13.20
	13	13.80	12.90	12.24	3.40	2.44	.92	17.20	15.34	13.16
	17	12.36	11.52	10.50	4.36	3.44	1.96	16.72	14.96	12.46

Note: These values are based upon the pounds per head of cattle on hand the first of the year as shown in table 13.

TABLE 18.—*Value of calf and cow sales per head based upon heifers entering herd at 2 years of age.*

Calf crop	Percentage of cows replaced	Value calf sales @ 6 cents			Value cow sales @ 4 cents			Total value calf and cow sales per head in the herd		
Death loss		2%	5%	10%	2%	5%	10%	2%	5%	10%
50	10	$7.68	$7.08	$6.66	$2.80	$1.72	....	$10.48	$8.80	$6.66
	13	6.90	6.48	5.94	3.76	2.72	$1.00	10.66	9.20	6.94
	17	5.94	5.52	4.74	4.96	3.92	2.28	10.90	9.44	7.02
55	10	8.70	8.04	7.44	2.80	1.72	....	11.50	9.76	7.44
	13	7.86	7.20	6.90	3.76	2.72	1.00	11.62	9.92	7.90
	17	6.90	6.30	5.46	4.96	3.92	2.28	11.86	10.22	7.74
60	10	9.66	9.00	8.40	2.80	1.72	....	12.46	10.72	8.40
	13	8.82	8.16	7.62	3.76	2.72	1.00	12.58	10.88	8.62
	17	7.80	7.20	6.42	4.96	3.92	2.28	12.76	11.12	8.70
65	10	10.68	10.02	9.36	2.80	1.72	....	13.48	11.74	9.36
	13	9.78	9.12	8.40	3.76	2.72	1.00	13.54	11.84	9.40
	17	8.76	8.10	7.32	4.96	3.92	2.28	13.72	12.02	9.60
70	10	11.64	10.98	10.20	2.80	1.72	....	14.44	12.70	10.20
	13	10.80	9.90	9.36	3.76	2.72	1.00	14.56	12.62	10.36
	17	9.66	8.88	8.04	4.96	3.92	2.28	14.62	12.80	10.32
75	10	12.66	11.76	10.98	2.80	1.72	....	15.46	13.48	10.98
	13	11.52	10.86	10.32	3.76	2.72	1.00	15.28	13.58	11.32
	17	10.44	9.78	9.12	4.96	3.92	2.28	15.40	13.70	11.40
80	10	13.44	12.72	11.94	2.80	1.72	....	16.24	14.44	11.94
	13	12.48	11.82	11.10	3.76	2.72	1.00	16.24	14.54	12.10
	17	11.34	10.74	9.66	4.96	3.92	2.28	16.30	14.66	11.94
85	10	14.40	13.62	12.90	2.80	1.72	....	17.20	15.34	12.90
	13	13.44	12.78	11.82	3.76	2.72	1.00	17.20	15.50	12.82
	17	12.24	11.64	10.62	4.96	3.92	2.28	17.20	15.56	12.90
90	10	15.42	14.52	13.68	2.80	1.72	....	18.22	16.24	13.68
	13	14.40	13.74	12.78	3.76	2.72	1.00	18.16	16.46	13.78
	17	13.20	12.54	11.34	4.96	3.92	2.28	18.16	16.46	13.62
95	10	16.38	15.48	14.46	2.80	1.72	....	19.18	17.20	14.46
	13	15.36	14.46	13.74	3.76	2.72	1.00	19.12	17.18	14.74
	17	14.16	13.32	12.06	4.96	3.92	2.28	19.12	17.24	14.34

Note: These values are based upon the pounds per head of cattle on hand the first of the year as shown in table 14.

TABLE 19.—*Value of yearling and cow sales per head based upon heifers entering herd at 3 years of age.*

Calf crop	Percentage of cows replaced	Value of yearling sales @ 6 cents			Value cow sales @ 4 cents			Total value yearling and cow sales per head in the herd		
Death loss		2%	5%	10%	2%	5%	10%	2%	5%	10%
50	10	$9.78	$8.76	$7.86	$1.96	$1.24	....	$11.74	$10.00	$7.86
	13	8.88	7.86	6.66	2.64	1.92	$ .76	11.52	9.78	7.42
	17	7.68	6.66	5.46	3.52	2.84	1.68	11.20	9.50	7.14
55	10	10.74	9.78	8.64	1.92	1.20	....	12.66	10.98	8.64
	13	9.84	8.88	7.74	2.56	1.88	.72	12.40	10.76	8.46
	17	8.64	7.74	6.30	3.44	2.76	1.64	12.08	10.50	7.94
60	10	11.64	10.50	9.42	1.84	1.16	....	13.48	11.66	9.42
	13	10.74	9.60	8.52	2.48	1.84	.72	13.22	11.44	9.24
	17	9.54	8.46	7.08	3.36	2.68	1.60	12.90	11.14	8.68
65	10	12.24	11.40	10.20	1.80	1.12	....	14.04	12.52	10.20
	13	11.40	10.50	9.30	2.40	1.76	.68	13.80	12.26	9.98
	17	10.20	9.36	7.86	3.24	2.60	1.56	13.44	11.96	9.42
70	10	13.08	12.06	10.86	1.76	1.12	....	14.84	13.18	10.86
	13	12.18	11.16	9.96	2.36	1.76	.68	14.54	12.92	10.64
	17	11.04	10.02	8.58	3.16	2.56	1.52	14.20	12.58	10.10
75	10	13.86	12.84	11.46	1.68	1.08	....	15.54	13.92	11.46
	13	12.96	12.00	10.62	2.32	1.68	.64	15.28	13.68	11.26
	17	11.82	10.86	9.24	3.08	2.48	1.48	14.90	13.34	10.72
80	10	14.64	13.44	12.12	1.68	1.04	....	16.32	14.48	12.12
	13	13.80	12.54	11.28	2.24	1.64	.60	16.04	14.18	11.88
	17	12.66	11.46	9.90	3.00	2.44	1.44	15.66	13.90	11.34
85	10	15.36	14.16	12.72	1.60	1.04	....	16.96	15.20	12.72
	13	14.52	13.32	11.88	2.16	1.60	.64	16.68	14.92	12.52
	17	13.38	12.18	10.56	2.92	2.36	1.40	16.30	14.54	11.96
90	10	15.78	14.64	13.26	1.60	1.00	....	17.38	15.64	13.26
	13	14.94	13.80	12.42	2.16	1.56	.60	17.10	15.36	13.02
	17	13.86	12.72	11.10	2.88	2.32	1.36	16.74	15.04	12.46
95	10	16.44	15.36	13.80	1.52	.96	....	17.96	16.32	13.80
	13	15.60	14.58	12.96	2.08	1.52	.56	17.68	16.10	13.52
	17	14.52	13.50	11.64	2.80	2.24	1.32	17.32	15.74	12.96

Note: These values are based upon the pounds per head of cattle on hand the first of the year as shown in table 15.

TABLE 20.—*Value of yearling and cow sales per head based upon heifers entering herd at 2 years of age.*

Calf crop	Percentage of cows replaced	Value of yearling sales @ 6 cents			Value cow sales @ 4 cents			Total value yearling and cow sales per head in the herd		
Death loss		2%	5%	10%	2%	5%	10%	2%	5%	10%
50	10	$10.44	$9.66	$8.46	$2.08	$1.32	....	$12.52	$10.98	$8.46
	13	9.60	8.82	7.86	2.88	2.12	$ .84	12.48	10.94	8.70
	17	8.52	7.74	6.78	3.92	3.16	1.88	12.44	10.90	8.66
55	10	11.40	10.74	9.54	2.04	1.32	....	13.44	12.06	9.54
	13	10.62	9.96	8.70	2.80	2.04	.80	13.42	12.00	9.50
	17	9.54	8.88	7.62	3.80	3.08	1.84	13.34	11.96	9.46
60	10	12.36	11.46	10.38	1.96	1.24	....	14.32	12.70	10.38
	13	11.58	10.68	9.54	2.72	2.00	.76	14.30	12.68	10.30
	17	10.56	9.66	8.52	3.68	2.96	1.76	14.24	12.62	10.28
65	10	13.02	12.42	11.16	1.88	1.20	....	14.90	13.62	11.16
	13	12.24	11.64	10.38	2.64	1.92	.72	14.88	13.56	11.10
	17	11.28	10.62	9.36	3.56	2.88	1.72	14.84	13.50	11.08
70	10	13.86	13.08	11.82	1.84	1.20	....	15.70	14.28	11.82
	13	13.08	12.36	11.04	2.56	1.88	.72	15.64	14.24	11.76
	17	12.12	11.34	10.08	3.48	2.84	1.68	15.60	14.18	11.76
75	10	14.64	13.92	12.48	1.80	1.12	....	16.44	15.04	12.48
	13	13.92	13.20	11.70	2.48	1.84	.72	16.40	15.04	12.42
	17	12.96	12.24	10.74	3.36	2.76	1.64	16.32	15.00	12.38
80	10	15.48	14.46	13.14	1.76	1.12	....	17.24	15.58	13.14
	13	14.76	13.74	12.42	2.40	1.80	.68	17.16	15.54	13.10
	17	13.86	12.84	11.46	3.28	2.64	1.60	17.14	15.48	13.06
85	10	16.20	15.24	13.74	1.68	1.04	....	17.88	16.28	13.74
	13	15.48	14.52	13.08	2.36	1.72	.64	17.84	16.24	13.72
	17	14.58	13.62	12.12	3.24	2.60	1.56	17.82	16.22	13.68
90	10	16.62	15.72	14.28	1.68	1.04	....	18.30	16.76	14.28
	13	15.96	15.06	13.62	2.28	1.68	.64	18.24	16.74	14.26
	17	15.12	14.16	12.72	3.12	2.52	1.52	18.24	16.68	14.24
95	10	17.28	16.44	14.82	1.60	1.04	....	18.88	17.48	14.82
	13	16.62	15.78	14.16	2.24	1.68	.64	18.86	17.46	14.80
	17	15.78	14.94	13.26	3.04	2.48	1.48	18.82	17.42	14.74

Note: These values are based upon the pounds per head of cattle on hand the first of the year as shown in table 16.

TABLE 21.—*Total value of calf and cow sales from 100 breeding cows.*

Calf crop	Percentage of cows replaced	Value of calves sold @ 6 cents per pound			Value of old cows sold @ 4 cents per pound			Value of calves plus cows		
Death loss		2%	5%	10%	2%	5%	10%	2%	5%	10%
50	10	$ 878	$ 810	$ 765	$ 320	$ 200	....	$1,198	$1,010	$ 765
	13	810	765	698	440	320	$ 120	1,250	1,085	818
	17	720	675	585	600	480	280	1,320	1.155	865
55	10	990	922	855	320	200	....	1,310	1,122	855
	13	922	855	810	440	320	120	1,362	1,175	930
	17	832	765	675	600	480	280	1,432	1,245	955
60	10	1,102	1,035	968	320	200	....	1,422	1,235	968
	13	1,035	968	900	440	320	120	1,475	1,288	1,020
	17	945	878	788	600	480	280	1,545	1,358	1,068
65	10	1,215	1,148	1,080	320	200	....	1,535	1,348	1,080
	13	1,148	1,080	990	440	320	120	1,588	1,400	1,110
	17	1,058	990	900	600	480	280	1,658	1,470	1,180
70	10	1,328	1,260	1,170	320	200	....	1,648	1,460	1,170
	13	1,260	1,170	1,102	440	320	120	1,700	1,490	1,222
	17	1,170	1,080	990	600	480	280	1,770	1,560	1,270
75	10	1,440	1,350	1,260	320	200	....	1,760	1,550	1,260
	13	1,350	1,282	1,215	440	320	120	1,790	1,602	1,335
	17	1,260	1,192	1,125	600	480	280	1,860	1,672	1,405
80	10	1,530	1,462	1,372	320	200	....	1,850	1,662	1,372
	13	1,462	1,395	1,305	440	320	120	1,902	1,715	1,425
	17	1,372	1,305	1,192	600	480	280	1,972	1,785	1,472
85	10	1,642	1,575	1,485	320	200	....	1,962	1,775	1,485
	13	1,575	1,508	1,395	440	320	120	2,015	1,828	1,515
	17	1,485	1,418	1,305	600	480	280	2,085	1,898	1,585
90	10	1,755	1,665	1,575	320	200	....	2,075	1,865	1,575
	13	1,688	1,620	1,508	440	320	120	2,128	1,940	1,628
	17	1,598	1,530	1,395	600	480	280	2,198	2,010	1,675
95	10	1,868	1,778	1,665	320	200	....	2,188	1,978	1,665
	13	1,800	1,710	1,620	440	320	120	2,240	2,030	1,740
	17	1,710	1,620	1,485	600	480	280	2,310	2,100	1,765

Note: These values are based upon weights of calf and cow sales shown in table 7 with calves uniformly at 375 pounds each and 6 cents per pound, and cows uniformly at 1,000 pounds each and 4 cents per pound. These sales would result from the size of herd shown in either table 11 or 12.

TABLE 22.—*Total value of yearling and cow sales from 100 breeding cows.*

Calf crop	Percentage of cows replaced	Value of yearlings sold @ 6 cents per pound			Value of old cows sold @ 4 cents per pound			Value of yearlings plus cows		
Death loss		2%	5%	10%	2%	5%	10%	2%	5%	10%
50	10	$1,596	$1,428	$1,260	$ 320	$ 200	....	$1,916	$1,628	$1,260
	13	1,470	1,302	1,092	440	320	$ 120	1,910	1,622	1,212
	17	1,302	1,134	924	600	480	280	1,902	1,614	1,204
55	10	1,806	1,638	1,428	320	200	....	2,126	1,838	1,428
	13	1,680	1,512	1,302	440	320	120	2,120	1,832	1,422
	17	1,512	1,344	1,092	600	480	280	2,112	1,824	1,372
60	10	2,016	1,806	1,596	320	200	....	2,336	2,006	1,596
	13	1,890	1,680	1,470	440	320	120	2,330	2,000	1,590
	17	1,722	1,512	1,260	600	480	280	2,322	1,992	1,540
65	10	2,184	2,016	1,764	320	200	....	2,504	2,216	1,764
	13	2,058	1,890	1,638	440	320	120	2,498	2,210	1,758
	17	1,890	1,722	1,428	600	480	280	2,490	2,202	1,708
70	10	2,394	2,184	1,932	320	200	....	2,714	2,384	1,932
	13	2,268	2,058	1,806	440	320	120	2,708	2,378	1,926
	17	2,100	1,890	1,596	600	480	280	2,700	2,370	1,876
75	10	2,604	2,394	2,100	320	200	....	2,924	2,594	2,100
	13	2,478	2,268	1,974	440	320	120	2,918	2,588	2,094
	17	2,310	2,100	1,764	600	480	280	2,910	2,580	2,044
80	10	2,814	2,562	2,268	320	200	....	3,134	2,762	2,268
	13	2,688	2,436	2,142	440	320	120	3,128	2,756	2,262
	17	2,520	2,268	1,932	600	480	280	3,120	2,748	2,212
85	10	3,024	2,772	2,436	320	200	....	3,344	2,972	2,436
	13	2,898	2,646	2,310	440	320	120	3,338	2,966	2,430
	17	2,730	2,478	2,100	600	480	280	3,330	2,958	2,380
90	10	3,192	2,940	2,604	320	200	....	3,512	3,140	2,604
	13	3,066	2,814	2,478	440	320	120	3,506	3,134	2,598
	17	2,898	2,646	2,268	600	480	280	3,498	3,126	2,548
95	10	3,402	3,150	2,772	320	200	....	3,722	3,350	2,772
	13	3,276	3,024	2,646	440	320	120	3,716	3,344	2,766
	17	3,108	2,856	2,436	600	480	280	3,708	3,336	2,716

Note: These values are based upon weights of yearling and cow sales shown in table 8 with yearlings uniformly at 700 pounds and 6 cents per pound, and cows uniformly at 1,000 pounds and 4 cents per pound. This table of values should not be compared directly with those in table 21 without considering the size of herd as shown in tables 9, 10, 11, and 12. The sales of yearlings shown in this table are assumed to be identical for an established herd with the size of herd shown in either table 9 or 10.

TABLE 23.—*Effect of sale price upon income from cow sales.*

Weight (pounds)	Value of total cow sales with price @ cents: 2	2½	3	3½	4	4½	5	5½	6
1,000	$ 20	$ 25	$ 30	$ 35	$ 40	$ 45	$ 50	$ 55	$ 60
2,000	40	50	60	70	80	90	100	110	120
3,000	60	75	90	105	120	135	150	165	180
4,000	80	100	120	140	160	180	200	220	240
5,000	100	125	150	175	200	225	250	275	300
6,000	120	150	180	210	240	270	300	330	360
7,000	140	175	210	245	280	315	350	385	420
8,000	160	200	240	280	320	360	400	440	480
9,000	180	225	270	315	360	405	450	495	540
10,000	200	250	300	350	400	450	500	550	600

Note: The 4-cent column is the only one used in tables 21 and 22. The other prices are for comparative purposes.

TABLE 24.—*Sale prices of young cattle expressed as a percentage of the 6-cent price.*

Price (cents per pound)	Percent	Price (cents per pound)	Percent	Price (cents per pound)	Percent
4	66.67	6	100.	8	133.33
4¼	70.83	6¼	104.17	8¼	137.50
4½	75.	6½	108.33	8½	141.67
4¾	79.17	6¾	112.50	8¾	145.83
5	83.33	7	116.67	9	150.
5¼	87.50	7¼	120.83	9¼	154.17
5½	91.67	7½	125.	9½	158.33
5¾	95.83	7¾	129.17	9¾	162.50
				10	166.67

Note: This table can be used in connection with table 21 or 22 to aid in studying the effect that price has upon possible income. The calf or yearling sale values in tables 21 and 22 would be only 83.33 percent as large if the sale price was 5 cents, while they would increase to 125 percent the values shown if the sale price was 7½ cents.

TABLE 25.—*Cost per hundredweight beef produced when yearly cost per head first year varies from $10 to $30 and when yearly production per head first of year varies from 125 to 500 pounds.*

Pounds produced per head	Yearly cost per head										
	$10	$11	$12	$13	$14	$15	$16	$17	$18	$19	$20
125	8.00	8.80	9.60	10.40	11.20	12.00	12.80	13.60	14.40	15.20	16.00
150	6.67	7.34	8.00	8.67	9.34	10.00	10.67	11.34	12.01	12.67	13.33
175	5.71	6.28	6.85	7.42	7.99	8.57	9.14	9.71	10.28	10.85	11.43
200	5.00	5.50	6.00	6.50	7.00	7.50	8.00	8.50	9.00	9.50	10.00
225	4.44	4.88	5.33	5.77	6.22	6.67	7.10	7.55	7.99	8.44	8.89
250	4.00	4.40	4.80	5.20	5.60	6.00	6.40	6.80	7.20	7.60	8.00
275	3.64	4.00	4.37	4.73	5.10	5.45	5.82	6.19	6.55	6.92	7.27
300	3.33	3.66	4.00	4.33	4.66	5.00	5.33	5.66	5.99	6.33	6.67
325	3.08	3.39	3.70	4.00	4.31	4.62	4.93	5.24	5.54	5.85	6.15
350	2.86	3.15	3.43	3.72	4.00	4.29	4.58	4.86	5.15	5.43	5.71
375	2.67	2.94	3.20	3.47	3.74	4.00	4.27	4.54	4.81	5.07	5.33
400	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00
425	2.35	2.58	2.82	3.06	3.29	3.53	3.76	4.00	4.23	4.46	4.71
450	2.22	2.44	2.66	2.89	3.11	3.33	3.55	3.77	4.00	4.22	4.44
475	2.11	2.32	2.53	2.74	2.95	3.16	3.38	3.59	3.80	4.01	4.21
500	2.00	2.20	2.40	2.60	2.80	3.00	3.20	3.40	3.60	3.80	4.00

TABLE 25.—(*Continued*).

Pounds produced per head	Yearly cost per head									
	$21	$22	$23	$24	$25	$26	$27	$28	$29	$30
125	16.80	17.60	18.40	19.20	20.00	20.80	21.60	22.40	23.20	24.00
150	14.01	14.67	15.34	16.01	16.67	17.34	18.01	18.68	19.34	20.00
175	11.99	12.56	13.13	13.70	14.29	14.85	15.42	15.99	16.56	17.14
200	10.50	11.00	11.50	12.00	12.50	13.00	13.50	14.00	14.50	15.00
225	9.32	9.77	10.21	10.66	11.11	11.54	11.99	12.43	12.88	13.33
250	8.40	8.80	9.20	9.60	10.00	10.40	10.80	11.20	11.60	12.00
275	7.64	8.01	8.37	8.74	9.09	9.46	9.83	10.19	10.56	10.91
300	6.99	7.33	7.66	7.99	8.33	8.66	8.99	9.32	9.66	10.00
325	6.47	6.78	7.08	7.39	7.69	8.01	8.32	8.62	8.93	9.23
350	6.01	6.29	6.58	6.86	7.14	7.44	7.72	8.01	8.29	8.57
375	5.61	5.87	6.14	6.41	6.67	6.94	7.21	7.48	7.74	8.00
400	5.25	5.50	5.75	6.00	6.25	6.50	6.75	7.00	7.25	7.50
425	4.94	5.17	5.40	5.64	5.88	6.11	6.34	6.58	6.82	7.06
450	4.66	4.88	5.11	5.33	5.56	5.77	5.99	6.22	6.44	6.67
475	4.43	4.64	4.85	5.06	5.26	5.49	5.70	5.91	6.12	6.32
500	4.20	4.40	4.60	4.80	5.00	5.20	5.40	5.60	5.80	6.00

Note: As shown in tables 13 to 16 the number of pounds of beef produced varies widely because of many influences. It is sometimes difficult to determine exactly what are the annual costs of operation. This table has been prepared to show for selected production figures and for arbitrary yearly costs per head what the average sale price of all sales should be to cover these costs. The table can be used in another way: If production is about 200 pounds of beef per head the first of the year and the market price is 6 cents, then the ranch costs must be kept down to $12 per head in order to break even. However, a change in methods of handling cattle which increased the production per head from 200 up to 275 pounds would make it possible to incur ranch expenses of nearly $17 per head and break even.

Notes

Notes

Bulletin Service

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