

A Good Calf Crop Makes Dollars & Sense

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Calves are the major product and source of income for many Arizona cattle ranchers. Therefore, ranchers must strive to (1) sell their calves at highest possible prices, (2) keep costs at a minimum, and (3) produce a "good" calf crop.

Because of the large number of U.S. cow-calf operations, and because each operation accounts for an infinitely small proportion of total production, an individual rancher has a negligible influence on the general price level for calves. That is, whether the price level for calves is \$35-40 or \$20-25 per cwt. is not determined by whether or not a particular rancher produces calves. Thus, ranchers have to accept the general price level as given, and then attempt to sell on the high side of the price range.

In regard to operating costs, ranchers face a similar price disadvantage when buying supplies. They usually have to pay the "asking price" for feed, veterinary services, and similar production items. Again, the reason for this is that the amount purchased by one rancher is such a small proportion of the total purchased by all ranchers that one individual has no measurable effect on the general price level for these items.

Since the individual rancher has relatively little influence on prices received for calves, and prices paid for production items, it becomes imperative that he manage his ranch and cow herd so as to produce a "good" calf crop.

What is a "Good" Calf Crop?

Some ranchers talk about their calf crop simply in terms of numbers produced, with no reference to selling weights or the number of cows in the herd. Others measure their calf crop in terms of average weight of calves, with no mention of number of calves or cows.

Many ranchers use "percent calf crop" to measure the product of their

cow herd. This is the number of calves sold, expressed as a percentage of the number of breeding-age cows in the herd at the beginning of the production season. Very often, however, these ranchers do not include calf weight in their measurement.

Considered separately, the number of calves produced, average selling weight, and percent calf crop are only partial measurements or *indicators* of total calf crop. Each of these *indicators* of calf production may *suggest* certain management decisions, but do *not* confirm them.


For example, a rancher who produces 80 head of calves averaging 400 pounds may be satisfied with the weight of calves sold. After all, many Arizona calves are sold at weights of 300-350 pounds. And, assuming there were 100 potential calf-producing cows in this herd, the rancher had an 80% calf crop. An 80% calf crop is near the average for Arizona, and therefore, this rancher may also be satisfied with this *indicator* of calf crop.

But, to repeat, neither an 80 percent calf crop nor the average weight of calves, considered alone, are actual measures of the production of this rancher's 100-head cow herd. Some more calculations are needed. Eighty, 400-pound calves yield 32,000 pounds of live calves — the total production from the 100-head cow herd. Thus, this is an average production of only 320 pounds of live calf per cow (32,000 pounds ÷ 100 cows = 320 pounds).

The latter figure, the "average pounds of calf produced per cow", is determined by both percent calf crop and selling weight (see Table 1). And, this figure is much more meaningful than average weight of calves sold, or

percentage calf crop, as a basis for measuring calf production. Why? Because the total cost of maintaining *all* cows in the herd must be paid from the total dollar returns from calves sold.

If a rancher can determine his cost for cow maintenance on a per head basis, and the pounds of live calf produced per cow, he can compute the "cost per pound of live calf produced" by dividing cow cost by pounds of calf per cow.


This cost per-pound figure is very basic and necessary for making ranch management decisions. Why? Because this figure is also the break-even price. If the price per pound received is greater than this figure, you make a profit. If the price received is less, you suffer a loss! 

Cow Maintenance Costs

For some ranchers, cow maintenance costs include (1) operating expenses for feed, seasonal labor, veterinary services and similar items; (2) bull and heifer replacement costs; and (3) taxes, insurance and similar overhead items. Other ranchers may include returns on their investment and a payment for management as cost items. Thus, in addition to differences in selling weights of calves and percentage calf crops, cow costs will differ greatly from ranch to ranch, and vary from year to year.

Because of these differences, it is impossible to make any general statements relative to what it should cost to produce a pound of live calf in Arizona. There is no "pat answer" to this question. Ranchers must calculate this figure for their own operations.

Cost per Pound of Calf Sold

Assume your cow maintenance cost is \$118 per cow, you have a 71 percent calf crop, and that the average selling weight of calves is 416 pounds. Regardless of the number of cows in your herd, you compute "cost per pound" 

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Table 1. Average Pounds of Calf Sold per Cow, by Percent Calf Crop and Selling Weight of Calves.

Percent Calf Crop	Average Selling Weight (Pounds)				
	300	350	400	450	500
	(Average lbs. of calf per cow)				
100	300	350	400	450	500
90	270	315	360	405	450
80	240	280	320	360	400
70	210	245	280	315	350
60	180	210	240	270	300
50	150	175	200	225	250

of calf sold" as follows:

Step 1 — compute pounds of calf sold per cow in herd by multiplying average selling weight of 416 pounds by 71 percent — this is roughly 295 pounds.

Step 2 — divide cow maintenance cost by pounds of calf sold per cow in herd — \$118 divided by 295 pounds — your cost per pound of calf sold is 40 cents.

This means that if you are to break-even on this calf crop, you must sell the calves for 40 cents a pound. Any prices less than this means red ink!

Because of the big differences in cow costs, percent calf crops, and average selling weights, it is impractical to repeat the calculations above which would cover every combination of conditions in the state. However, Table 2 summarizes the "cost per pound of calf sold" for 150 combinations of cow costs, percent calf crops, and selling weights. Two examples illustrate the economic importance of increasing the pounds of calf sold per cow.

Example 1 — Assume cow maintenance cost is \$130 per head, and 80 percent of the cows produce calves with an average selling weight of 350 pounds. The cost per pound of calf produced is 46.43 cents.

If through improved husbandry and management practices the rancher can increase his calf crop to 90 percent, with calves averaging 350 pounds, the average cost per pound of calf produced will be reduced to 41.26 cents. Obviously, this reduction in cost of more than 5 cents per pound can have a very favorable effect on profits.

Example 2 — Assume that the rancher in example 1, now getting calves from 90% of his cows, is also able to increase average selling weight of calves from 350 to 400 pounds. This

increases the "pounds of calf produced per cow in the herd" from 315 to 360 pounds. And, the real payoff is a reduction in cost per pound of calf produced from 41.26 cents to 36.11 cents, or about 5 cents per pound.

If in the above examples cow maintenance cost had been \$90 rather than \$130, the reductions in "cost per pound of calf produced" would be less, but

Table 2. Cost per Pound of Calf Produced by Maintenance Cost per Cow, Percent Calf Crop and Selling Weight of Calves.

Cow Cost, and Percent Calf Crop	Average Selling Weight (Pounds)				
	300	350	400	450	500
	(Costs, cents per pound)				
\$70 Cow Cost					
100% Calf Crop	23.33	20.00	17.50	15.56	14.00
90	25.93	22.22	19.44	17.28	15.56
80	29.16	25.00	21.87	19.44	17.50
70	33.33	28.57	25.00	22.22	20.00
60	38.88	33.33	29.16	25.93	23.33
50	46.67	40.00	35.00	31.11	28.00
\$90 Cow Cost					
100% calf crop	30.00	25.71	22.50	20.00	18.00
90	33.33	28.57	25.00	22.23	20.00
80	37.50	32.14	28.12	25.00	22.50
70	42.85	36.73	32.14	28.57	25.71
60	50.00	42.85	37.50	33.33	30.00
50	60.00	51.43	45.00	40.00	36.00
\$110 Cow Cost					
100% calf crop	36.67	31.43	27.50	24.44	22.00
90	40.74	34.92	30.56	27.16	24.44
80	45.83	39.29	34.38	30.56	27.50
70	52.38	44.90	39.29	34.92	31.43
60	61.11	52.38	45.83	40.74	36.67
50	73.33	62.86	55.00	48.88	44.00
\$130 Cow Cost					
100% calf crop	43.33	37.14	32.50	28.88	26.00
90	48.14	41.26	36.11	32.10	28.88
80	54.16	46.43	40.62	36.11	32.50
70	61.90	53.06	46.43	41.26	37.14
60	72.22	61.90	54.16	48.14	43.33
50	86.66	74.28	65.00	57.77	52.00
\$150 Cow Cost					
100% calf crop	50.00	42.86	37.50	33.33	30.00
90	55.55	47.62	41.66	37.04	33.33
80	62.50	53.57	46.87	41.66	37.50
70	71.42	61.22	53.57	47.62	42.86
60	83.33	71.42	62.50	55.55	50.00
50	100.00	85.71	75.00	66.66	60.00

would still have an appreciable effect on profits.

Conclusions:

With today's price-cost relationships, if a rancher is to make a profit he must sell a heavy calf each year from almost every cow in his herd. All of his efforts to increase grazing capacity, improve animal quality, and do a top-notch job of marketing may be wasted by a low production of "live calf per cow in the herd."

You ranchers, therefore, should determine and consider those husbandry and management practices which will economically increase the "pounds of live calf produced and sold per cow." In contrast to your negligible influence on prices received and prices paid, your accomplishments toward "more pounds of calf sold per cow," can have an appreciable effect on dollar profits.