Management Influences on Break-Even Price/Pound of Slaughter Kids

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Introduction

The paramount obstacle to increasing goat numbers is enterprise profitability. Accordingly, it is the purpose of this presentation to describe the three essential factors affecting the profitability of meat goat enterprises.

There are a number of traditional ways to undertake partial or complete business enterprise analyses, but, for goat producers, we have found that calculations to determine their break-even price/lb (BEP) of slaughter kids provide valuable information about both production and economic returns. Obviously, the difference between the BEP/lb and the selling price/lb is the margin of profit/lb and per kid. In the aggregate, these margins constitute enterprise profitability. Three crucial figures are needed to calculate BEP.

First, we need to calculate the percent kid crop weaned (not just born). To do this, we divide the total number of kids weaned (both sexes) by the number of does exposed (not the number of does actually kidding). For example, if 100 does were exposed and they together weaned 150 kids, the % kid crop weaned would be 150. (In the real world, nearly all of the does would cycle and most would conceive and perhaps 90 or so would kid and produce X number of kids, Y of whom would survive until weaning time).

Secondly, we need to determine the average cost/exposed doe of "maintaining" her for one year. Such costs must be *all-inclusive* (her feed, any creep-feed, all health costs, breeding fee, "overhead", depreciation of assets, land use fee, etc.) In this reckoning, each doe may be viewed as a profit-center, but *all* does generate *all* the income and they bear *all* the costs.

Thirdly, to accurately determine BEP/lb of kids sold at weaning time (or shortly thereafter), we must know their selling weights (in actual practice, their 'shrunk' weights after hauling to market).

Calculation of Break-Even Price Per Pound of Slaughter Goats

The interrelated influence of these three factors/figures on break-even cost/lb of slaughter kids are shown in Table l. To illustrate usage of this table, first select an average selling weight, say, 65 lbs; then select a weaning rate of, say, 150% (1.50 kid/doe/year); then select a doe maintenance cost (*including an estimated $15/doe for marketing costs—hauling and commission)*, say, $85/year. Follow the 150 % kid crop weaned column downward to the 65 lb *shrunk* selling weight section; then, to the left, locate the annual doe-cost line for $85; the intersection of this line/column duo shows a figure of $.87.

This is the break-even price/lb (BEP), that is, if you sold at this price/lb, you would neither lose nor make money on this doe. If you sold for a higher price/lb than $.87, for example, $1.57, you would make a profit of $.70/lb (1.57 - .87) or on this doe $68.25 (.70 x 65 x 1.5).

To illustrate the positive influence of increasing percent-kidding-rate on BEP (for a 65 lb goat from a doe whose maintenance cost was $85), note the decline in BEP prices/lb as the kidding rate increases from 100 % ($1.31) to 200% ($.66). As the BEP falls across improved kidding rates, profit per doe rises sharply. To illustrate, at 100% kidding rate and a sales price of $1.57/lb, the profit/lb of kid is $.26 (1.57-.1.31); consequently, the 1.5 kids weighing 65 lbs/head would generate a doe profit of $25.36 (.26 x 65 x 1.5). At 200% kidding rate, however, the profit is $.91/lb (1.57 - .66), and the profit on the two goat litter would be $118.30 (.91 x 65 x 2.0).

To illustrate the positive influence of decreasing the annual doe maintenance cost on BEP (65 lb kid), examine the decrease in BEP prices/lb as the doe-cost decreases from $85 ($1.31) to $50/yr ($.77) *at a 100%* kidding rate; at 200% rate, the figures are $.66 and $.39, respectively. As shown above, a doe producing 1.5 65 lb kids nets $68.25 if her maintenance cost is $85/year. If her maintenance cost were only $50/year, however, her profit would be $103.35 (1.57 - .51 x 65 x 1.5). The increase in profit/doe of $35.00 (103.35 – 68.25) is, of course, exactly equal to the savings in maintenance cost/head of $35.00 (85 -50).

To illustrate the positive influence of increasing the selling weight of weanlings, let us examine the results using, arbitrarily, $85 doe cost/year and a 150% kidding rate. At 50 lbs sale weight, the BEP is $1.13; at 65 lbs it is $.87, and 80 lbs it is $.71. Assuming the same $1.57 cents/lb selling price used above, the profit margins are, per lb, $.22, .70, and .86, respectively, for these sale weights. In this example, a doe selling 1.5 50 lb kids would yield a profit of $16.50 (50 x .22 x 1.5), while 65 lb kids would yield a profit of $68.25 (65 x .70 x 1.5); 80 lb kids would yield a profit of $103.20 (80 x .86 x 1.5).

Cautionary notes: first, the foregoing paragraph assumes the same selling price/lb across all three weights. This is *not realistic* because, historically, San Angelo and New Holland prices demonstrate distinct, *adverse* responses to increasing sale weights.

Secondly, most commercial does can not wean litters of kids averaging 60 lbs or more in 4 months or so unless the she and/or kids receive supplemental feed. In BEP calculations, the cost of this added feed must be included as part of the doe maintenance cost; any feed given to kids post-weaning is also treated this way (to do otherwise, would lead to separate post-weaning cost-benefit calculations).

Discussion points

The foregoing computations describe the economic consequences of reproductive efficiency (number of kids/weaned per doe exposed and their collective weaning (selling) weight) and management efficiency (reducing the aggregate cost of maintaining a doe for one year). It is self-evident that reducing the break-even selling price/lb for market kids is the paramount consideration in managing a commercial slaughter goat herd.

The relative importance to enterprise profitability of the three factors (% kid crop weaned, doe maintenance cost/year, and litter weight) will vary somewhat among herds and venues, but, in any case, all are crucial to enterprise profitability. Remember, slaughter goat production (profitability) is, essentially, a numbers game.

For instance, within a given herd size/venue, the number of kids weaned/sold per/year is more important than individual, or even litter, weaning weights. Also, note that the "quality" of the kids sold (their live selection grade) is of lesser importance than numbers or weight.

In the foregoing prose, I used 100 and 200 percent kid crop rates for illustration; are these figures representative? Well, yes and no…many TX goat owners of extensive-type operations (3-5 acres/doe with somewhat erratic nutrition levels, limited environmental protection, and subject to 15%-plus annual kid loss to predators/diseases) would likely consider a 100% weaned kid crop/per exposed breeding-age doe acceptable; in drought times, 75% or less may be experienced. The better operators, with good rainfall, would be pleased to achieve 125%, while 150% would be an exceptional expectation, at least for many of them.

Can producers in areas of higher rainfall, more forage/acre, longer growing seasons, warmer winters, etc. expect higher kid crop percentages? Yes, more kids will likely be born and more will likely survive to weaning/sale time (but only if parasite and other problems can be controlled). The typically small herds in southeastern states (30-100 does) can, with decent goats and adequate management, usually achieve 150%. With superior forage and parasite management, many could achieve 175%, occasionally even more. Producers in more northern areas should match such figures. (Note: all these percentages are from mixed-age herds—abnormal numbers of first-timers and old-timers within a given herd will surely lower such figures).

Is a 200% kid crop/per exposed doe achievable? Not too likely....not with once/year kidding…for every doe that did not breed, another doe would have to wean quadruplets or two does would have to wean triplets. Not to say 200% couldn't be done, but it would require an unusual confluence of genetically superior does and above-average management.

Of course, if an owner decided to undertake an accelerated kidding program (three kid crops in 24 months), he could easily reach a 200% crop/year (by averaging only a 133% kid crop across the three kidding times). If he averaged a 150% rate in such a program, he would achieve a 225% kid crop on an annual basis. Striving for even higher rates might, one imagines, require a bit of considerable faith-based optimism by the striver, possibly even some divine intervention.

Table 1 provides annual doe-maintenance cost figures from $50 to $90. Are these realistic? I think so, but a lot of west TX ranchers would argue that they couldn't stay in business if it cost *them* $50/year to "run" a doe. For example, at a kidding rate of 100% and a weaning weight of 50 lbs and using the $50/head figure, the BEP/lb is $1.00. If the kid sold for $1.50/lb, it would generate a profit/doe of $25 (1.50 –1.00 x 50). After paying a marketing charge of, say, $5/head, the return to labor/management would $20/doe.

(In such a situation, one would need to own/manage about 1,500 does, and have an employed (off-farm) and frugal spouse, as well as unusually undemanding children who could/would work goats on about 5,000 acres to generate $30,000/year. Alternatively, the ranch might be leased to 20 hunters at $1500/gun to generate the same $30,000, so…).

Contrarily, an $85/doe/year maintenance cost (including marketing charges) for corn-belt/northeastern producers does not seem particularly onerous to me (as compared to TX), even given the shorter grazing seasons, higher production inputs/costs associated with a doe herd of 100-200 head. To illustrate, at this cost and with a kidding rate of 1.5 and selling 65 lb kids, the BEP is $.87. Selling at $1.57lb, the profit/doe is $68.25 (1.57 - .87 cents/lb x 65 lb x 1.5). In this same circumstance, just

getting an extra ¼ kid/year (1.75% kidding rate), would raise the profit/doe to $93.28 (1.57 -.75 x 65 x 1.75), while twins would yield $118.30 (1.57 - .66 x 65 x 2.0).

Possibilities for reducing enterprise BEP for improved enterprise profitability

There are but two ways to reduce BEP. The first is to improve reproductive efficiency of the doe herd via increasing the percentage kid crop weaned and the litter size/weight sold. Proper nutrition, good health status, and adequate general management of the does and bucks are necessary, but insufficient, conditions to do this. Improving the genetic quality of the breeding herd offers further opportunity…better mamas do indeed produce lower BEPs.

The second, and most rapid, way to lower BEP is to reduce the cost of doe maintenance. This reduction may take many forms. For instance, while some of the line items listed under FARM EXPENSES in your IRS Form-1040/Schedule F must necessarily be prorated across all does, others offer prospective saving opportunities. Logically, those items that are the largest, recurring outlays offer the best opportunity for making substantial reductions. (See other information in this Section).

But first, I offer a cautionary tale of two does…of the same 'breed', similar in age and phenotypic characteristics, both of whom kidded at 14 months of age in late winter '03; each completed of 5 lactations.

Doe A averaged 180 % kid crop weaned/sold; these 9 kids averaged 73 lbs at weaning and all sold as Selection 1 at $1.85/lb each (shrunk wt). Thus, doe A generated sales of $1,102.50 (9 hd x 70 lb x $1.75), less $5/hd commission each on 9 kids, = $1,057.50 gross income. During this 5 yr time span, the *average* annual maintenance cost for the herd was $80/hd; however, doe A was de-wormed only twice yearly, had no other health costs, and her feet were only trimmed twice yearly for an estimated savings of $4/hd (5% below average) for a 'real' maintenance charge of $76/yr. This being the case, doe A cost $380 (76 x 5) over the five lactations. Consequently, does A netted $677.50 (1,057.50 – 380.00) for an average of $135.50/year.

In contrast, doe B averaged 160% kid crop weaned/sold; her 8 kids averaged 67 lbs at weaning (4 sold as Selection 1 and 4 sold as Selection 2) for an *average* of $1.70/lb each (shrunk wt….about 8% less than doe A kids). Thus, doe B generated sales of $884.00 (8 x 65 x 1.70) less $5/hd commission each on 8 kids = $ 844.00 gross income. During this time, doe B averaged $84/yr maintenance cost (5% over the average $80/hd cost) and, as a consequence, cost $420 for the five lactations. Thus, doe B netted only $424 (844 – 420) or $84.80/yr.

With approximately 10% more kids, 8% more kid value/lb, and about 10% lower maintenance cost, doe A netted $50.70/yr (135.50 – 84.80) more than doe B, or about 59% more/year (50.70/84.80 x 100).

The moral of this tale is…10% better 'performance' led to nearly 60% more profit/head. Think about this when you are pricing breeding stock…*more can indeed be less*—at least in certain circumstances. Buying cheaper, 'untested/unproven' foundation stock can be dangerous to your economic health. Depending on phenotype to predict genotype is likewise dangerous; no scale, no record, no go….

Table 1. Break-even Selling Price per Pound for Kid Goats with Different Kid Crops Weaned, Doe Maintenance Costs, and Kid Selling Weights

Annual Doe Cost, $ per head	Breakeven Price, $/lb. (rounded to nearest penny)					
	Kid Crop Weaned					
	100%	125%	150%	175%	200%	225%
	Selling weight: 50 lb. per head					
50	1.00	0.80	0.67	0.57	0.50	0.44
55	1.10	0.88	0.73	0.63	0.55	0.49
60	1.20	0.96	0.80	0.69	0.60	0.53
65	1.30	1.04	0.87	0.74	0.65	0.58
70	1.40	1.12	0.93	0.80	0.70	0.62
75	1.50	1.20	1.00	0.86	0.75	0.67
80	1.60	1.28	1.07	0.91	0.80	0.71
85	1.70	1.36	1.13	0.97	0.85	0.76
90	1.80	1.44	1.20	1.03	0.90	0.80
	Selling weight 65 lb. per head					
50	0.77	0.62	0.51	0.44	0.39	0.34
55	0.85	0.68	0.57	0.49	0.43	0.38
60	0.92	0.74	0.61	0.53	0.46	0.41
65	1.00	0.80	0.67	0.57	0.50	0.44
70	1.08	0.86	0.72	0.62	0.54	0.48
75	1.15	0.92	0.77	0.66	0.58	0.51
80	1.23	0.98	0.82	0.70	0.62	0.55
85	1.31	1.05	0.87	0.75	0.66	0.58
90	1.38	1.10	0.92	0.79	0.69	0.61
	Selling weight 80 lb. per head					
50	0.63	0.50	0.42	0.36	0.32	0.25
55	0.69	0.55	0.46	0.39	0.35	0.31
60	0.75	0.60	0.50	0.43	0.38	0.33
65	0.81	0.65	0.54	0.46	0.41	0.36
70	0.88	0.70	0.59	0.50	0.44	0.39
75	0.94	0.75	0.63	0.54	0.47	0.42
80	1.00	0.80	0.67	0.57	0.50	0.44
85	1.06	0.85	0.71	0.61	0.53	0.47
90	1.13	0.90	0.75	0.65	0.57	0.52

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