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BEEF PRODUCTION IN LAKE COUNTY

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Lakeport - May 22, 1954

Problems in Lake county beef production are disclosed by a beef management study conducted by farm advisor Mose Lusk in 1953. Nine annual records were obtained--eight of them on cow herds and one on a feeder enterprise--but all showed a loss. In these management studies conducted by the Agricultural Extension Service, costs include interest on investment and the value of the operator's own labor so they reflect total cost of production. Average cost of production was 29.7 cents per pound for all beef produced. The price received per pound sold was 16.5 cents, but the average value of all, including cows retained in the herd, was only 14.25 cents per pound. Prices were too low to allow a profit, and cost of production was too high to offer much opportunity for future profit.

The climate in Lake county is such that considerable hay feeding in the winter time is necessary, and the year-around feed supply in these nine beef enterprises contained a high proportion of hay and irrigated pasture. All nine cooperators depended considerably on irrigated pasture. It was the high cost of feed that resulted in these high production costs. Table 1 shows the feed prices that were used in compiling these records, and the last column shows the percentage of all nutrients which were supplied by each of the four feed types. The amount of silage was neglible so was included in the hay.

To a considerable degree one type of feed may be substituted for another since they all contain nutrients--the digestible portion of the feed used for maintenance, growth, and production. We can compare the cost of "total digestible nutrients" (TDN) in the different feed types, as shown in the following table. Prices shown are those considered prevalent now in this area. Pasturage is measured in animal unit months (AUM), which is the amount of feed needed for good growth or production by one mature head of cattle, or the equivalent, for one month. It is further defined as containing appoximately 400 pounds of total digestible nutrients or feed equivalent to that in 0.4 of a ton of hay.

Table 1 - Feeds Used and Costs of Nutrients in Lake County Beef Management Study Records - 1953

Kind	Unit	Cost per unit	Lbs. TDN per unit	Cost 100 lbs. TDN	Per cent of all feed used
Range	AUM	2.50	400	.63	30
Irrigated Pasture	AUM	4.00	400	1.00	36
Hay (including silage)	ton	26.84	1,000	2.68	31
Concentrates	cwt.	3.27	75	4.36	4
All feeds reported used - 9 records				1.52	100

Profitable beef production requires observance of the following basic principles:

(1) Economical feed production--high yields per acre of grazing on range and irrigated pasture and good tonnage of hay grown at reasonably low cost.

(2) The right kind and stage of livestock production to fit the kinds and costs of the feed on that farm or ranch.

(3) The right number of stock to fit the quantity of feed available.

(4) Proper management and nutrition of stock to get efficient production, economical gains, high calf crop, good weaning weights, etc.

In fitting the kind and number of stock to the feed supply, it will be helpful to think of four stages in producing the steer for slaughter. A type of beef production would then be the stage or combination of stages that would be the most suitable for marketing the feed produced on the farm. Table 2 presents a summary of four stages as they might be considered in Lake county farming, although it is likely that the fourth stage--the feedlot-- would not fit here.

Table 2 - Four Stages in Beef Production

	Time Period	Age of Animal	Wt. Out	Lbs. TDN per lb.	Main feed suitable
1. Cow herd to weaner calf	Year	8-9 mo.	450	13.5-16	Range
2. Calf to yearling feeder	11 mo.	20 mo.	750	7-9	Range and Irri. past.
3. Yearling feeder to slaughter "good"	4 mo.	24 mo.	960	8-9	Irri. past. and conc.
4. Feed to slaughter "choice"	2 mo. up	26 mo.	1080	10	Grain and hay

Nine Beef Records, Lake County, 1953
Stage 1 mainly - 4 records - selling calves
Stage 1, 2, & part of 3 - 4 records - long yearlings pasture fat
Stage 2 & 3 - 1 record - buy feeders, sell later

The first stage of production of the weaner calf requires a large amount of feed to carry the breeding herd the year around in order to get weaned calves. The four Lake county beef records in 1953 that sold weaner calves were rather efficient in that they required about 13½ pounds of TDN for every pound of animal produced, including the cow beef as well as the calves. Feed costs, however, were rather high so there would appear to be no profit opportunity in this stage alone. With the cost of nutrients at the average of $1.52 per 100 pounds of TDN, feed costs alone would be 20.5 cents per pound of live animal produced. Since feed cost was only 72% of the total cost, this would indicate a total cost of 28.5 cents per pound, which was considerably above the price brought by stocker calves last fall.

The second stage in the life of a steer is his growth from a 450-pound calf to a 700-or 750-pound yearling feeder through another grass season or period of about ten to twelve months. This is the most economical and profitable stage in beef production, requiring only about 7 pounds of TDN per pound of gain. It is a stage well adapted to our good grass ranges in western California, but buying stocker

calves or small yearlings each fall and selling them the following summer is a bit speculative. This stage can also stand the cost of irrigated pasture, which is higher than natural range; and in low-cost irrigated pasture under excellent management, total cost for the entire period, including some winter feed, can be as low as 14 cents per pound of gain.

The third stage as considered here is frequently combined with stage 2 or stage 4. It would be taking the yearling feeder from grass in early summer for further gain on irrigated pasture and by supplementing with grain carry the animal to a slaughter grade of "good." This stage will probably require about 8 or 9 pounds of TDN per pound of gain; but since the value of the feeder per pound is increased, usually about 2 cents, higher cost feeds such as irrigated pasture and grain can be used profitably. Most of the 1953 records did not carry animals to this degree of finish, although they were almost to this grade on irrigated pasture alone, without the grain.

The fourth stage—the feedlot finishing of animals to grade of "choice"—can come after stage 2 or after stage 3. It is shown in Table 2 as a short time in the feedlot following stage 3. Since more fat is being produced in this stage, it takes at least 9 or 10 pound of TDN to produce a pound of gain. This is the highest cost period in the production of a slaughter steer. Since it carries the animal, however, to a slaughter grade of "choice" and increases its value per pound, there is a profit opportunity for the skilled buyer and feeder of cattle who has a convenient, mechanized feedlot and an economical source of feeds.

Now, with four main types of feed and four stages of beef production, the organization of a profitable beef business proceeds with selecting the right kind and stage of production to fit the feed supply. It could be that beef are not suited to the farm at all and dairying or some other type of production would be more profitable. Speciality crops or cash fruit and field crops will usually be more profitable than the growing of feed crops to use in beef production. Beef is produced all over the country under very low-cost conditions, and the California farmer with high-value irrigated land and water will be under a handicap in competing with beef produced under lower costs elsewhere. We will, however, limit our discussion to beef cattle.

Livestock farming is a method of gathering and converting grass and other feeds into higher value products for human consumption. Beef cattle find their place primarily in gathering range grass; and an 850-pound steer is the product of feed equivalent to that in 10 tons of hay; yet his selling price is usually considerably below the value of 10 tons of baled hay. It should be helpful to stockmen to think of themselves primarily as growers of feed and then as users of livestock to harvest and bale this feed for market. If you think of your feed as a hay field, you would plant good seed for maximum production, control weeds and production, and perhaps fertilize for heavier yields. You would put your forage harvesters in when the crop is ready to harvest and put in just enough harvesters to do the job—not too many. Livestock are self-fueled, self-propelled, fully automatic forage harvesters, but they need to be managed well to be on hand to convert the feed to meat, wool, etc., at the right time.

Here are some vital stages in planning for profitable beef production:

(1) List the land resources and what each field can produce with greatest profit, whether it be fruit, cash crops, grain, hay, irrigated pasture, or range.

(2) List the feed that can be produced, including crop residues, hay, grain, AUM of pasture on the range and in the irrigated pasture.

(3) Select the kind of stock most apt to be most profitable in utilizing that feed--whether dairy cattle, beef cattle, sheep, or hogs.

(4) Select the stage of production most profitable for that kind and cost of feed. It is, of course, permissible to buy certain feeds needed to round out the forage produced on the farm.

(5) Obtain the right numbers of the selected kind and stage of livestock and try and fit them to the feed cycle throughout the year by judicious buying and selling.

Assuming that beef cattle have been chosen, we give the following brief example of suitable beef enterprise to fit an assumed feed production.

Example - What stages of beef production are best adapted to a Lake county farm with the following feed supply:

1. Range for about 40 animal units through grass season--ending June--160 AUM January-May.
2. 30 acres irrigated pasture--ending October or November--240 AUM - May-October, plus hay below.
3. Hay about 40 tons made from above irrigated pasture in May - 100 AUM in form of hay.

A - Purchased Feeders - Stages 2 and 3 probably best.
Buy 60 stocker calves each fall and supplement with a little hay and perhaps concentrates on the range, moving to irrigated pasture in May to June. Buy barley and supplement on pasture and sell September-October. Fits feed cycle better than cow herd since feed requirement low or absent in October-November. Also, more pounds of beef from feed used and higher value slaughter beef.

B - Second choice - Cow herd.
Stages 1, 2, and 3 selling long yearling steers and surplus heifers at slaughter grade "good" after some grain feeding on irrigated pasture. Less speculative than A above, and under present price conditions, less profitable. A bull and 22 cows plus replacement heifers, calves, and yearlings could be carried on this amount of feed. Pounds of live animal produced would be lower than with steers. (A 28-cow herd selling weaners would be less profitable with still low pounds of production.)

In conclusion we would say that there are profit opportunities in beef production on some Lake county ranches where the kind and number of animals fit the feed supple and where this feed is not too high in cost for use in beef production.