

planning beef production

ON IRRIGATED PASTURES IN CALIFORNIA

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Beef cattle feeders on irrigated pasture near Gilroy.

600,000 acres or more of irrigated pasture in California show this is an important crop. More such pasture will come on irrigated land not needed for, or suited to, higher value crops.

Irrigated pasture furnishes feed cheaper than harvested crops, such as hay and silage.

Range resources are limited and fully used, so increased meat production must be on farms. Great demand for and high prices of, range cattle ranches are turning attention to beef production on irrigated pastures.

This circular based on management studies and feeding tests by the Agricultural Extension Service is to help those interested in producing beef on irrigated pasture.

A contribution to grasslands' agriculture

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PLANNING BEEF PRODUCTION ON IRRIGATED PASTURE IN CALIFORNIA

Irrigated pasture is an important crop in California. It is now estimated at over 600,000 acres and is increasing. It is a good means of utilizing land not needed for high-value crops and shallow soils not well adapted to them. It is a means of supplementing our limited natural range resources by furnishing feed at costs lower than those of harvested crops. With current high beef prices, and high demand and high prices for range cattle ranches, the investment required per animal unit is very high--approaching that for beef production on irrigated pasture.

With range resources already fully utilized, increased meat production will have to be on farms. This accounts for the recent interest in the combination of beef cattle and irrigated pasture in California. It is a relatively new type of farming and we have much to learn. However, with records in management studies and field trials, we have information which should be helpful to those interested in beef production on irrigated pasture. There are other profitable ways of using irrigated pasture,-- dairy cattle, sheep, and hogs. This circular is concerned with beef production although the principles of planning this enterprise would be useful with other types and combinations.

The profitable use of irrigated pasture in beef production depends on a well-balanced combination of a productive, economical pasture with a suitable, well-managed beef enterprise. It must be recognized that much beef is produced in many parts of the country on ranges and natural pastures where the cost of feed is considerably below that in irrigated pastures in the valleys of California. Irrigated pasture as a feed for beef cattle can compete in economy of production only where high production is obtained at reasonable cost.

Ordinarily, in planning an irrigated pasture and beef combination one will start with the pasture -- a definite acreage of known or fairly well estimated productive capacity. This pasture may be the only source of feed on the particular farm, or there may be other crops which furnish hay, silage, grain, stubble or other feeds at times during the year. A balance between the farm-grown forage and the forage needed by the beef enterprise is desirable, although the purchase of some hay will usually be needed to supplement irrigated pasture where this is the only crop.

Before beginning a plan for the use of irrigated pasture it is essential to become familiar with the animal unit month as a measure or unit for estimating the quantity of pasturage available and the quantity needed by the livestock. Livestock of all ages and kinds can be converted to animal units. An animal unit is one mature head of cattle or its equivalent in feed requirement for normal growth and production.

In figuring animal units in the beef enterprise a calf nursing its mother the first two months need not be counted. As the calf begins to eat a little pasturage at about two months of age, it should be counted as 0.1 of an animal unit and this increased up to .5 by the time the calf is weaned at 7 or 8 months of age with a weight of around 400 pounds or more.

The increase in feed requirement is gradual, but for the period between weaning and two years of age a beef yearling will average around 0.75 of an animal unit. At about 2 years of age and thereafter a beef animal is counted a full animal unit insofar as forage is concerned. The illustrations in tables 2, 4 and 6 show the animal units per head each month as used in calculating the forage requirements of the animals in those examples.

Irrigated pasture yields may best be estimated or measured in animal unit months of feed. An animal unit month is the quantity of forage ordinarily needed or taken in one month by an animal unit of livestock. It may further be defined as furnishing 400 pounds of Total Digestible Nutrients -- abbreviated TDN. Total digestible nutrients are the digestible proteins, carbohydrates and fats contained in feeds and used by animals for maintenance, growth and production. An animal unit month furnishes the same quantity of TDN as 800 lbs. or 0.4 of a ton of hay. Pasture shortages may be readily converted to tons of hay needed by multiplying the shortage in animal unit months by 0.4. Surpluses may be cut for hay.

Yields per acre of irrigated pasture vary considerably in the different months and from year to year in any given pasture. Total yields for the year also vary widely from farm to farm with differences in soil, cultural care, and grazing management. The average yield of all irrigated pastures in an area or in the state is not known. Several hundred irrigated pasture records compiled in management studies conducted by the Agricultural Extension Service show that pasturage obtained may vary from a low of 5 animal unit months per acre for the season to as high as 30. A good yield with good care in an area with long, cold winters may be as low as 8 animal unit months per acre, while in southern California as much as 18 may be readily obtained.

Generally, an acre of irrigated pasture, in areas where this crop is important, will produce from one to two animal unit months of feed per acre each month during the summer and from nothing up to 1 animal unit month of feed monthly during the winter, depending on location, climate, and kind of weather in a particular winter. A good yield expectancy in the major irrigated valleys--San Joaquin, Sacramento, Salinas, and Russian River--will probably be around 12 animal unit months per acre. Yields as high as 20 have been recorded. This would usually be distributed over the months as shown in schedule B on the next page. In planning, it is important to use conservative yield estimates for the particular pasture involved.

The records where beef cattle have been weighed "in" and "out" of an irrigated pasture and where the pounds of beef produced per acre have been computed are few. Most of these show from 300 to 500 pounds produced per acre for the season. We have seen figures as high as 800. On the other hand, a pasture can be overstocked and poorly managed to the point where animals are merely maintained and there is no net gain in weight. A pasture properly stocked and yielding around 12 animal unit months of pasturage per acre should produce around 500 pounds of gain on young feeder animals.

Before undertaking beef production on irrigated pasture, it is also well to make a budget or estimate of inputs and costs for the pasture involved. One might find that cost of feed in that pasture might be almost as high as the cost of purchased hay. As a guide to such a cost estimate, a sample set of inputs and costs is shown on the next page. It is based upon many records over the years and is fairly typical of conditions where this crop is prevalent. It is not an actual average. By changing yield, hours, prices, etc. to fit a particular farm a budget of estimated costs should not be difficult to prepare.

The type of beef enterprise most profitable for use on an irrigated pasture may vary with changing prices and other conditions. Market beef may be considered as produced in three stages. First is the production of the weaner calf from a breeding herd. Carrying the cows, bulls, and replacement heifers for a year to produce weaner calves of around 400 pounds or more requires about 16 pounds or more of total digestible nutrients TDN per pound of weaner calf produced. This is usually done with low-cost natural range.

SAMPLE IRRIGATED PASTURE PRODUCTION AND COSTS

At the right are 3 sample yields by months. "A" is typical of the southern part of the San Joaquin Valley and other locations where there is some feed available in the winter. "B" is a more usual schedule for good conditions farther north and for most irrigated pasture locations. "C" is typical of locations with colder or wetter winters. These are all good yields and exceed many where care and management are not of the best.

Yield - Animal Unit

Months per Acre

Mo.	A	B	C
Jan.	0.3	0.1	0.0
Feb.	0.5	0.2	0.0
Mar.	1.0	0.5	0.4
Apr.	1.5	1.4	1.1
May	1.8	1.7	1.5
June	1.7	1.7	1.6
July	1.6	1.6	1.5
Aug.	1.5	1.5	1.3
Sept.	1.5	1.3	1.2
Oct.	1.4	1.2	1.0
Nov.	0.8	0.6	0.3
Dec.	0.4	0.2	0.1
Total	14.0	12.0	10.0

Below is a sample schedule of inputs and costs per acre with costs per animal unit month based on schedule B, or 12 animal unit months per acre. Quantities and prices should be changed to those more applicable in making estimates for a particular farm. Overhead and other costs are based upon an 80-acre farm unit and might be higher per acre on smaller farms, or lower on larger ones. Irrigation is assumed from an owned well, with resulting high depreciation and interest, which would not apply where water is from an irrigation district.

Table 1- Sample Inputs and Costs with a 12 Animal Unit Month Yield

	Hours or Quantity Per Acre	Average Price	Costs			
			Per Acre	Per A. U.Mo.		
Man labor: Applying manure & fertilizer	2 hrs.	\$.90	\$1.80			
Dragging, mowing, fence work & miscel.	2 "	.90	1.80			
Irrigation (by flooding from ditches)	7 "	.90	6.30			
Tractor use, all operations	3 "	1.50	4.50			
Total labor and field power	11 m. 3 tr.		\$14.40	\$1.20		
Power to pump 54 acre inches of water per acre, 100' lift, 700 g.p.m., 30 hp motor	4.5 Ac. ft. 770 kw.hr.	- \$1.22	\$ 9.40			
Manure	2 yds.	1.00	2.00			
Commercial fertilizer as needed	200 lbs.	4.00	8.00			
Miscel., seed, weed control, fence, repairs, etc.			2.00			
Total material cost			\$21.40	\$1.78		
General expense, office, 'phone, etc.			1.80	.15		
County taxes \$80 value at 6% rate			4.80	.40		
Total cash costs			\$42.40	\$3.53		
	<u>Original Cost</u>	<u>Average</u>	<u>5%</u>	<u>Depreciation</u>		
	<u>Total</u>	<u>Per A.</u>	<u>Value</u>	<u>Interest</u>		
	80 A.	Dollars per acre				
Stand, 10 yr. life	\$ 2000	25.00	12.50	.63	2.50	
General building for eqt.	800	10.00	5.00	.25	.25	
Irrigation well & pump	4000	50.00	25.00	1.25	2.50	
Ditches & border boxes	800	10.00	5.00	.25	2.00	
Fencing	1600	20.00	10.00	.50	1.00	
Misc. equipment	1200	15.00	7.50	.37	1.50	
Land	24000	300.00	300.00	15.00	-	
Total investment	\$34400	430.00	365.00			
Total depreciation				9.75	9.75	.81
Subtotal, cash costs and depreciation					52.15	4.34
Total interest on investment			18.25		18.25	1.52
TOTAL ALL COSTS					\$70.40	\$5.86

The above sample costs with a 12 animal unit month production resulted in a cost of \$5.86 per animal unit month. This yield and cost are equivalent to 4.8 tons of hay at \$14.65 per ton. With same per acre costs, a 14 animal unit month yield would have resulted in a cost per animal unit month of \$5.03.

The second stage is the rapid growth of this calf to the yearling stage ready to finish for market. This stage can be accomplished readily with forage and requires only about 8 pounds of TDN to produce a pound of gain. Ordinarily, this is the most profitable stage for use of irrigated pasture with these young animals making up to 1 1/2 pounds of gain per day. With a good pasture carrying around two animals per acre for the best pasture season, total gains of from 450 to 600 pounds per acre are attainable.

The third stage in good beef production is the finishing for market, which may be done in the feed lot or can be done by supplemental feeding of concentrates and some hay while animals are on irrigated pasture. At this stage about 9 to 11 pounds of TDN are required to produce a pound of gain, but the higher value of beef animals finished to the grade of "Good" or "Choice" will usually more than pay for the higher cost feeds required.

There are many types of beef production that can be suited to irrigated pasture. Ordinarily, the second stage--the period of maximum gains on a minimum of feed--will be most profitable. This will require the purchase of feeders each year and their sale for market or dry lot feeding at the end of the pasture season. Part of the pasture can be used for weaner calves from a breeding herd. However, this may be at a cost above the usual fall purchase price when range producers market feeder cattle. The purchase of yearling feeders for finishing is also feasible. They usually require a shorter period and concentrates than weaner calves, so do not usually offer as good a profit opportunity, as the calves.

Another type--somewhat opportunistic--is the purchase of cows and calves from range herds to finish for market. The supply of such animals, is not large or dependable. The breeder selling purebred bulls and heifer calves, with the higher prices received for registered stock can well utilize considerable irrigated pasture.

Irrigated pasture may be a bit expensive for the year-around feeding of a cow herd for ordinary beef production. It can be, however, a valuable supplement to natural range which, in California, is of high quality in the valleys and foothills only in the spring. The cattleman with natural range for the spring, irrigated pasture for summer and fall, and cheap roughage for the winter can secure high production at a low average feed cost.

Example 1

To illustrate the planning of a beef enterprise we present four examples with a comparison in table 8. We assume 80 acres of irrigated pasture as the only feed grown on the farm. At 12 animal unit months of pasturage per acre this will furnish 960 animal unit months of pasturage for the year. For our first trial we will use weaner calves purchased in the fall and sold after 11 1/2 months. For the period they will average 0.7 of an animal unit. This times 11.5 months gives us about 8 animal unit months of feed requirement per head. Divided into 960, it gives us 120 head as suited to the 80 acres.

Since it will ordinarily pay to feed such animals for market, we will plan to supplement them with concentrates increasing the amount toward the end of the pasture season in order to sell them as "good" slaughter animals. There are usually a few death losses, so we assume 2 head will die. As weaner calves come to market there is a certain proportion of heifers, so we assume 25 heifers are included. These will be sold a little earlier in August and September at 800 lbs. The steers will be sold in October at 910 lbs. We start with out 120 weaner calves the first of November, when they are ordinarily available in greatest number and at the best price. Table 2 on the next page shows the calculation of animal units on hand at the start of each month and the pasturage available as figured from schedule B on the previous page.

EXAMPLE 1 - Weaner Calves, Supplements

Table 2. Use of 80 A. Irrigated Pasture with 120 Weaner Calves
Purchased at 400 lbs. November 1 and Sold the following
August to October

	No. head	lst of month	Average weight	lst of month	Gain per head	per day	An. units per head	Total stock	Pasture available	Shortage or surplus	Months	Hay made, tons	Hay fed, tons	Concentrates fed	
														Per head day	Total pounds
Nov.	120		400#		1.0#	.45		54	48	- 6		3		1#	3,500
Dec.	119		430		1.1	.50		59	16	-43		18		1	3,700
Jan.	119		465		1.2	.55		65	8	-57		23		1	3,700
Feb.	119		502		1.3	.60		71	16	-55		22		1	3,400
Mar.	119		540		1.3	.65		77	40	-37		15		1	3,700
Apr.	119		580		1.5	.70		83	112	29		3		0	-
May	118		625		1.5	.75		89	136	47		11	3	0	-
June	118		670		1.5	.80		94	136	42		18	3	2	7,000
July	118		715		1.6	.85		100	128	28		17	3	4	15,000
Aug.	118		765		1.8	.90		106	120	14		10	3	8	30,000
Sept.	106		820		2.0	.95		101	104	3		3		12	40,000
Oct.	94		880		2.0	1.00		47	96	49		2		15	20,000
Total	1340				1.4	.71		946	960	14		56	101	-	130,000

Weaner calves purchased in the fall would get some pasture during the winter and enough hay and perhaps a pound of concentrates daily so that they will continue to grow and gain a pound to a pound and a quarter a day. Some hay would be available and consumed during the entire year to improve nutrition and prevent bloat. Supplemental feeding to finish for slaughter would begin in June and the last of the animals would be marketed about the middle of October to allow for an accumulation of feed in the pasture for the next year's batch arriving in November. The net gain shown below of 56,740 total pounds may be considered as 15,356 pounds from the purchased hay and concentrates and 41,384 pounds from the 80 acres of pasture - 517 pounds per acre.

Table 3. Sample Inputs and Costs, Supplemented Weaner Enterprise

	No. head	Aver. wt.	Total wt. or quantity	Assumed price	Total value	Per head sold	Per cwt. gain
Sales: Slaughter heifers	24	800#	19,200#	29¢	\$5,568		
Slaughter steers	94	910	85,540	30¢	25,662		
Total sales	118	888	104,740	29.8	31,230	\$264.66	\$55.04
Less-feeders purchased	120	400	48,000	32¢	15,360	130.17	27.07
Gain and stock income	-2		56,740	28¢	15,870	134.49	27.97
Expenses:							
Hay purchased			45 T.	\$20	\$ 900	7.63	1.59
Harvesting pasture hay			56 T.	6	336	2.85	.59
Concentrates purchased			65 T.	70	4,550	38.56	8.02
Salt & minerals					50	.42	.08
Pasture - total costs table 1.			80 A.	\$70.40	5,632	47.73	9.93
Total feed cost					\$11,468	\$97.19	\$20.21
Labor, caring for cattle, 4 hrs. daily			1400 hr.	\$.90	1,260	10.67	2.23
Misc. taxes, ins. vet., car expense, etc.					520	4.41	.91
Depreciation on beef lots & feeding facilities					120	1.02	.21
Interest on investment, cattle & equipment					900	7.63	1.59
Total all costs					\$14,268	\$120.92	\$25.15
Management income					1,602	13.57	2.82
Net farm income, includes all labor & interest, beef & pasture					6,014	50.97	10.60

In the preceding example and sample inputs and costs in table 3 we allowed for a little surplus feed and waste. Notice that the spring and summer surplus of pasturage was made into 56 tons of hay and an additional 45 tons of hay purchased from off the farm along with 65 tons of concentrates. Buying and selling prices for the stock and other costs are assumed as shown. Pasture costs are as shown in table 1. These assumed prices seemed fairly typical in 1950. Under the conditions and prices assumed this combination would have been fairly profitable. It is important not to assume similar good earnings for any future time or place but rather to refigure the entire example to fit the particular time and farm.

Example 2

Our second example differs from the first in that the same number of weaner calves are obtained but are fed no concentrates either during the winter or to finish for market. Gains of a pound a day up to a pound and a half in May and June are assumed. This rate of gain of unsupplemented animals has been shown in several feeding trials conducted by the Agricultural Extension Service. But the death losses and hay made and purchased are the same. Animals were sold at the same time but at 100 pounds less weight per head and as feeders at 2 cents a pound less. Income was \$5,300 less and costs were about \$5,000 less, so management income was about \$300 less. To save space and time we omit the details but include the summary in table 8 for comparison.

Example 3

Our third trial is based upon the purchase of 98 yearling steers on November 1 and their sale on the following September 30 after finishing with the supplemental feeding of concentrates. It is shown in detail on the next page in tables 4 and 5. These yearlings averaged about .9 of an animal unit for the 11 months. The 97 average (with 2 death losses) for 11 months came to about 962 animal unit months -- a good fit for the pasture. This enabled cutting 59 tons of hay from the pasture and required the purchase of an additional 43 tons of hay and 60 tons of concentrates, as shown in table 5. At the prices and costs assumed, this example shows a loss or minus management income, although there is still a fair net farm income if interest and labor are not considered as costs. Yearling feeders, as handed in this example, are not likely to be as profitable as weaner calves on irrigated pasture.

Example 4

In recent years of high beef prices weaner calves have been in great demand and higher in price per pound than animals finished for market. This makes their purchase for feeding somewhat speculative and requires a considerable outlay which could cause a severe loss if the market fell before they were sold. Hence, there has been considerable interest in running a breeding herd on irrigated pasture to produce one's own weaner calves for further growth and finishing for market. Based on past conditions and the prices and management assumed in these illustrations this would not be as profitable as buying weaner calves or yearlings. Conditions change, however, and the time may come when it may be profitable or necessary to keep a breeding herd to utilize irrigated pasture. Hence, we present for our fourth example the breeding herd with all animals finished for market and no feeders purchased.

Example No. 4 with the breeding herd of 44 cows and 2 bulls has been adjusted to best fit the same 80 acres as shown in the preceding three examples. It contains all three stages--the production of weaner calves, their development to yearlings, and their finishing for market. It is assumed that one of the two bulls will be sold

Example 3. Yearling Steers, Supplemented

Table 4. Use of 80 A. Irrigated Pasture for Yearling Steers

	No. head	Aver. wt. 1st of month	Aver. daily gain	An. Units per head	Total stock	Pasture		Short-age or surplus	Hay made tons	Hay fed tons	Concentrates Fed	
						Animal	Unit				Months	Per head day
Nov.	98	650#	1.0#	.70	69	48	-21			3*		
Dec.	97	680	1.1	.75	73	16	-57			6*		
Jan.	97	715	1.1	.80	78	8	-70			28		
Feb.	97	750	1.1	.85	82	16	-66			27		
Mar.	97	785	1.1	.90	87	40	-47			19		
Apr.	97	820	1.3	.95	92	112	20			3		
May	97	860	1.5	1.00	97	136	39	8	3			
June	96	905	1.6	1.00	96	136	40	15	3	4#	12,000	
July	96	955	1.7	1.00	96	128	32	16	3	8	24,000	
Aug.	96	1010	1.9	1.00	96	120	24	12	3	12	36,000	
Sept.	96	1070	2.0	1.00	96	104	8	8	4	16	48,000	
Oct.	0	1130	-			96	96		0			
	1064			.90	962	960	-2	59	102	-	120,000	

*Pasturage not used in October would be available in November and December so only a nominal quantity of hay would be required. In this example yearling steers were assumed to be purchased about the first of November at about 2¢ a pound below the cost of weaner calves in the 2 preceding examples. Some hay is fed during the entire year and concentrate feeding to finish for market is started in June and increased until steers are gaining 2 lbs. a day in Aug. and Sept. Steers are sold at assumed price of 30¢ a pound at end of Sept., thus leaving a month to prepare for the next batch. It takes more feed to maintain a yearling and put on gain than with weaner calves, so this example at the prices assumed is less profitable. The 43,820 pounds of gain may be considered as 11,000 pounds from purchased hay and concentrates and 32,820 pounds from pasture - 410 pounds per acre.

Table 5. Sample Inputs and Costs Yearling Feeder Enterprise

	No. head	Aver. wt. #	Total wt. or quantity #	Assumed price	Total value or cost	Per head sold	Per cwt. gain
Sales: Slaughter steers	96	1130	108,480	30¢	\$32,544	\$339.00	
Less: Feeders bought	98	650	63,700	30¢	19,111	199.07	
Gain & stock income	-2		44,780	30¢	\$13,433	\$139.93	\$30.00
Expenses:							
Hay purchased			43 T.	\$20	\$ 860	\$ 8.95	\$ 1.92
Hay harvested from pasture			59 T.	6	354	3.69	.79
Concentrates purchased			60 T.	70	4,200	43.75	9.38
Salt and minerals					50	.52	.11
Pasture, costs from table 1			80 A.	70.40	5,632	58.67	12.58
Total feed cost					\$11,096	\$115.58	\$24.78
Labor, caring for cattle			1300	.90	1,170	12.18	2.61
Miscel., taxes, ins., vet., car exp., etc.					520	5.42	1.16
Depreciation beef facilities					120	1.25	.28
Interest on investment					1,050	10.95	2.34
Total cost beef enterprise & pasture					\$13,956	\$145.38	\$31.17
Management income					-523	-5.45	-1.17
Farm income, includes all labor & interest					\$ 3,949	\$ 41.14	\$ 8.82

and replaced by a younger bull annually and that 1 cow will die and 7 be sold annually to be replaced by 8 heifers which will calve as 2-year olds and annually thereafter. Breeding is seasonal for calving in November and December. A calf crop of 90% is assumed and higher efficiency of production and gains than are usual for range herds, since irrigated pasture plus the supplemental feeding should produce better results. Details are shown in tables 6 and 7.

Notice that the maintenance of the breeding herd results in considerably less net total production in pounds of beef than the preceding examples and also that a considerable proportion is cow beef of lower value. Although the investment plus total current outlay is about the same as the first and third examples, as shown in table 8, the annual expense is considerably less and the risk of a market drop between purchase and selling time is eliminated. Net farm income at the prices assumed is almost as great as for the yearlings in example 3.

Example 4. Breeding Herd

Table 6. Use of 80 A. Irrigated Pasture with Breeding Herd Year Around

	Bulls	Cows	Calves			Yearlings			Total stock	Pasture available	Short-age or surplus	Hay made	Hay fed	Concentrates	
			No. hd.	Av. wt.	A.U. per hd.	No. hd.	Av. wt.	A.U. per hd.						Hd.	Total
			Animal	Unit	Months	tons	tons	da.						lbs.	
Jan.	2	44	21	80	-	39	635	.70	73	8	-65		27	2	2,400
Feb.	2	44	32	100	.10	39	672	.75	78	16	-62		25	2	2,400
Mar.	2	43	40	130	.20	39	705	.80	84	40	-44		17	2	2,400
Apr.	2	43	40	180	.25	39	740	.85	88	112	24		3		slaughter
May	2	43	39	240	.30	39	785	.90	92	136	44	9	3		stock only
June	1	43	39	305	.35	38	830	1.00	96	136	40	17	3	2	2,000
July	1	40	39	370	.40	38	880	1.00	95	128	33	16	3	4	3,800
Aug.	1	40	39	430	.45	38	930	1.00	97	120	23	13	3	8	7,600
Sept.	1	40	39	480	.50	27	990	1.00	88	104	16	8	3	12	7,100
Oct.	1	36	39	520	.55	8	830	1.00	67	96	29		3		0
Nov.	2	36	39	560	.60	8	880	1.00	69	48	-21		3	1	1,200
Dec.	2	36	39	600	.65	8	920	1.00	71	16	-55		22	2	2,400
Tot.	19								998	960	-38	63	115		31,300

A breeding herd can do very well on irrigated pasture with a 90% calf crop and rapid gains of calves and young stock to greater weights. In the above example it may be seen that such a herd with a fairly even number of animal unit months during the year does not fit the pasturage available through the year as well as the previous examples with feeder animals. Even with the high production assumed, the pounds produced were only 37,600. Only 31,400 pounds can be attributed to pasture - 392 pounds per acre, and a considerable proportion is cow beef of lower value, so this example shows the lowest profit opportunity of any of the 4 examples.

Table 7. Sample Inputs and Costs Breeding Herd

	No. head	Aver. wt.	Total weight or quantity	Assumed Price	Total value or	Per head raised	Per cwt. produced
Sales: Slaughter heifers	11	850	9,350	29¢	\$ 2,711		
Slaughter steers	19	1,050	19,950	30¢	5,985		
Bull	1	1,200	1,200	26¢	312		
Cows	7	1,100	7,700	25¢	1,925		
Total sales	38		38,200		10,933		
Less bull bought	1	600	600		300		
Net stock income	37		37,600		10,633	\$287.38	\$28.28
Expenses:							
Hay purchased			52 T.	\$20	1,040	28.10	2.76
Hay harvesting from pasture			63	6	378	10.22	1.01
Concentrates purchased			16	70	1,120	30.27	2.98
Salt & minerals					50	1.35	.13
Pasture, total costs table 1					5,632	152.22	14.98
Total feed costs					8,220	222.16	21.86
Labor caring for cattle			1800 hrs.	90¢	1,620	43.78	4.31
Miscel. taxes, vet., car, etc.					600	16.22	1.59
Depreciation beef facilities					200	5.41	.54
Int. on investment					1,050	28.38	2.79
Total cost					11,690	315.95	31.09
Management income					-1,057	-28.57	-2.81
Farm income incl. all labor & interest beef & pasture					3,865	104.46	10.28

