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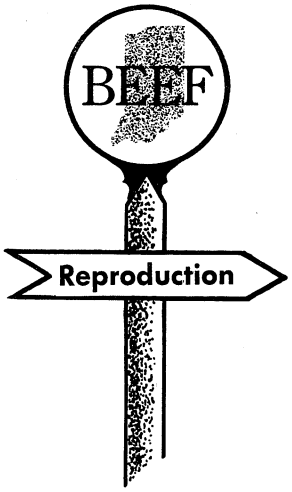


Improving Calving Percent in Beef Herds

Lowell L. Wilson, Animal Sciences Department

Of all the beef cattle traits such as quality grade, weaning weight, color, birth weight, no trait affects cow herd profits more than calving percent. Calving percent is the percent of cows on the farm during the breeding season that raise calves to weaning age. If a cow doesn't raise a normal, healthy calf to weaning all of the management and feed costs invested in that cow are lost.

If a cattleman sells weaned calves for an average of $120.00 per head, and has a 100% calf crop, each cow in his herd grosses $120.00. Another farmer may sell his calves for the same average price, but obtain a 70% calf crop. Then the herd averages only $84.00 gross returns per cow. This is a difference in gross profit of $36.00 per cow or $1080.00 for a 30-cow herd. Some of the factors affecting calving percent are discussed in this publication.

Nutritional Factors

Required levels of energy, protein, vitamins, minerals, and water must be available to a breeding herd for acceptable production and high calving percent. Table 1 presents the approximate daily requirement for animals in breeding herd.

The nutrient requirements for a 1000 lb. cow nursing a calf are much greater than for a 1000 lb. pregnant cow which is not nursing a calf. A cow producing milk for a calf needs 64% more total protein, 75% more digestible protein, 87% more TDN, 136% more calcium, 97% more phosphorus, and 133% more vitamin A than a pregnant, non-milking cow.

It is especially important to meet the nutrient requirements of cows during the breeding season which is usually from 2 to 3 months after calving. Cows, and particularly heifers, should be gaining weight during the breeding season. About 80 percent of the commercial breeders in Indiana calve in late winter or spring. This is a good practice since pasture conditions are usually the best in the spring when winter-calving cows are rebred.

The exact feed intake of beef cows on pasture is not usually known. If pastures are well-fertilized, grazed rotationally in an acceptable stage of maturity, but not overgrazed, nutritional needs are usually satisfied with the possible exception of first-calf heifers or young bulls. Under some conditions, these should receive additional energy, protein and vitamin A.

Other nutritional considerations are:

1. Energy

Overfeeding bulls, cows or heifers may cause temporary or permanent sterility. Cattle used for breeding purposes, either purchased or home-raised, should be matured and maintained in a manner that will not promote excessive finish.

Table 1. Daily Nutrient Requirements of Breeding Animals[a/]

Animal	To gain	Total Protein	Digestible Protein	Total Digestible Nutrients--TDN	Calcium	Phosphorus	Vitamin A (I.U.)
pound	pounds/day	pounds	pounds	pounds	pounds	pounds	
700 lb. pregnant heifer	1.5	1.5	0.9	10.0	0.033	0.030	20,000
1000 lb. pregnant mature cow	.4	1.4	0.8	9.0	0.028	0.026	18,000
1000 lb. cow nursing calf (3 to 4 mo. after calving)	0.0	2.3	1.4	16.8	0.066	0.050	42,000
1600 lb. mature bull	0.0 or maintenance	2.4	1.4	14.1	0.038	0.036	38,000

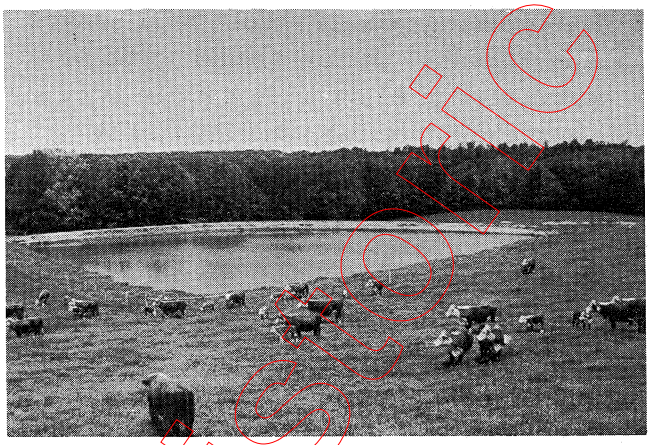
a/ Nutrient Requirements of Beef Cattle, National Research Council, 1963 revised edition.

2. Protein and vitamin A

Supplements are needed when corn or sorghum silages, all-grass hay or silage (cut at ordinary stages or maturity), or straws are fed pregnant and/or milking cows. A good natural source of protein and vitamin A (carotene) is four to eight pounds of good-quality alfalfa hay. Intramuscular injection of three to five million I. U. of vitamin A is inexpensive and is effective for three to four months.

3. Minerals

Every beef animal should have free access to two separate mineral boxes. One should contain a mixture of two parts of steamed bone meal or dicalcium phosphate and one part of trace-mineralized salt and the other loose trace-mineralized salt. Commercially prepared supplements should contain at least eight percent phosphorus and should be compared as to price and analysis before they are purchased. The mineral boxes should be protected from the weather and be convenient for the cattle.



Farm ponds provide routine and emergency water for many Indiana beef herds. Note that the cattle are fenced from the pond.

4. Water

It should always be available from a clean, fresh source. If suitable sites are available, farm ponds are excellent for routine and emergency water sources. The cattle should not be permitted near the pond but drink their water from a tank or outlet of the pond. It is better if a farm pond accumulates water from the home farm rather than one or more neighbors farms. Although streams are convenient and inexpensive sources of water, they can also be a source of a variety of diseases.

Breeding and Management Program

1. Facilities

Providing and using expensive barns and housing for a beef cow herd usually results in high costs per cow without increasing production. When cows are confined in a barn, the chances of diseases spreading in a herd are increased.

Calving in muddy lots predisposes cases of calf scours which are very difficult to cure.

The best place for a cow herd is on clean, well-sodded pasture with a small wooded lot or hills for shelter. Shades should be provided when necessary.

An essential part of a beef cow or feeder operation is a well-planned, workable corral system for routine and special handling of the cattle. For specific plans consult Midwestern Beef Equipment Plans (MWPS-6) which is available from your county agent.

2. New Additions to the Herd

Bringing new breeding animals or feeder cattle to a farm is an easy way to introduce diseases which can drastically reduce calving percent and production. Here are some guidelines.

(a) Isolate all new animals for at least 30 days. Purchased feeder cattle should never come in contact with breeding herds.

(b) Test all new additions for brucellosis and leptospirosis.

(c) Purchase from herds which are free from vibriosis, trichomoniasis, tuberculosis or other serious diseases, use good sanitation practices, and have a high calving percentage.

(d) Use a veterinarian to help plan an

isolation, observation, and treatment program for all new additions.

(e) Purchase pregnancy-tested bred heifers and cows with a written safe-in-calf guarantee.

(f) Buy a bull which is a guaranteed breeder and has been semen-tested prior to sale.

3. Replacement Heifers

Considering aspects of herd health and production, the best source of replacement heifers is usually the owner's own herd. If replacements are purchased, pay particular attention to the guidelines listed previously.

Heifers should be at least 15 months of age and weigh between 600 and 700 pounds (depending on breed) when bred. Breeding heifers smaller and younger may contribute to calving difficulty, stunted mature size, and decreased production and longevity.

Heifers should be grown out on high-roughage, low-concentrate rations, and they should not be fattened! After breeding, first-calf heifers should be given preferential treatment and kept separate from the remainder of the cow herd.

4. Caring for the Herd Bull

A new herd bull should be purchased in breeding condition. Fatness and over-condition can not only cover up conformation defects in bulls but can also contribute to sterility and breeding problems. If a fitted bull is purchased, gradually reduce the concentrate level and increase the roughage content of the ration. Fleshy, fitted bulls should go through a de-conditioning period of two or three months before the breeding season. Other considerations concerning the herd bull are listed below.

(a) A bull three years or older can usually breed 30-35 cows in a pasture-breeding system. A two year-old bull should not be pasture-mated to more than 20 cows.

(b) If a corral-breeding system is used a mature bull can be used on 60-75 cows.

(c) The breeder should not use more bulls than is necessary to breed his cows.

(d) A bull should be with the breeding herd no longer than 2 1/2 months per year.

(e) When not with the cow herd, the bull should be fed only enough to maintain breeding condition and kept in a separate lot large enough to allow ample exercise.

(f) Breeding pastures and the bull lot should be cleared of downed fences, old machinery, and other objects that could injure the bull's reproductive organs or feet.

(g) An annual semen test and physical examination will help to detect a sterile bull prior to the breeding season.

5. Time of Calving

The best time of calving is determined by the weather, facilities, method of winter feeding, labor availability, and markets of the individual producer. Regardless of the time of calving, the producer should calve at one particular season of the year and not the year around. In Southern Indiana most producers prefer January-March calving.

6. Breeding Season

The breeding season should be no longer than 2 1/2 months. A cow should settle in two heat cycles of 21 days each if she is in good reproductive health, and the bull is healthy and fertile. Any cow that doesn't settle should be examined by a veterinarian and possibly culled.

Each cow in the herd should have a "rest" period of at least 60 days between calving and rebreeding. This "rest" period is necessary so that the reproductive organs of the cow can return to a normal, non-pregnant condition. The milk production system also needs a rest. Therefore, calves should be weaned no later than 8 1/2 months of age.

The cow herd and bull should be observed closely at least once daily during the breeding season. A good practice is to record the number of each cow bred during the first part of the breeding season and then note

weather or not these same cows show heat 18 to 23 days later. If possible, each bull used should be observed in the act of breeding.

After the breeding season, the breeder should watch for abortions or cows returning to heat.

Cows that abort should be isolated from the rest of the cow herd immediately. A veterinarian should be consulted immediately as to the cause of abortion. Any aborted fetuses and accompanying materials should be examined by a veterinarian and then buried or burned.

7. Artificail Insemination

This can be used for herd improvement and also may be used to control such reproductive diseases as trichomoniasis and vibriosis. The chance of spreading such disease is lessened with artificial insemination.

8. Culling and Pregnancy Testing

Cows with records of breeding or calving problems should be culled. Each cow should be identified by neck chains, hot brands or other methods, so that accurate production and breeding records can be kept.

Cows can be pregnancy tested accurately by an experienced veterinarian 45 days after the breeding season. Open cows should be culled. There is no profit in feeding an open cow for a year.

9. Calving

The gestation period of beef cattle normally varies from 278 to 285 days. During the calving season, the breeder should observe the cow herd closely at least three times daily.

If the cow has been in true labor for more than two hours or if labor is unusually severe, professional assistance should be given. Occasionally, a minor malposition (a front foot bent back) may be easily corrected. However, if the calf is severely malpositioned, or too large for normal delivery, a veterinarian should be consulted. To avoid infection, the vulva and surrounding area, the arms of the operator and all instruments should be thoroughly cleaned and disinfected.

If the placenta is not completely expelled within 48 hours after birth (called retained placenta), it should be removed by a veterinarian. Removing placental membranes too early or incorrectly may allow infection to enter the blood stream or cause infertility.

10. New Calf

If the new calf is found immediately after birth, the calf's mouth should be cleared of mucus or other materials which might interfer with breathing. If the calf is standing and the cow has milk and allows nursing, leave the cow and calf alone for the first day.

The new calf should suckle within two hours after birth. If the cow does not stay with her calf it may be advisable to place the cow and calf in a separate corral. When the cow and calf are left alone for a few hours, the cow may own the calf and allow suckling. As a last resort, the cow may be roped and nursed by hand so the calf receives the colostrum milk.

If the cow is not able to raise her calf for any reason, the breeder may be justified in using a dairy nurse cow to raise the orphans. Orphan calves or those from poor milking cows may sometimes be transferred to cows that have lost their own calves.

Small calves occasionally drown in streams or during floods. These losses can be prevented by keeping the calving herd away from streams during or soon after calving. Calves may also drown in water tanks that are unprotected.

Calves should be dehorned, castrated, and eartagged before two weeks of age.

11. Close Pre-Weaning Observation

This extra caution can save many calves. Spotting initial infections of calf scours, prompt diagnosis and treatment are necessary. The herd should be observed and treated when the infestations of internal or external parasites are noted.

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