

IMPROVING BEEF HERD REPRODUCTIVE EFFICIENCY

Putting Theory to Practice In a Small Angus Herd

by
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In an article published in the March ANGUS JOURNAL, Dan Fox of Cornell University, Ithaca, N. Y., outlined a management plan aimed at improving beef cow reproductive efficiency. This month he relates his experiences in applying the management plan to a typical small beef cow herd, owned and managed by him and his wife Carol Lynn.

Last month we discussed the principles of developing a management plan to improve reproductive efficiency. Can all of these factors be applied in the typical small beef herd? It is one thing to say; it is another to do!

We became determined in 1977 to fulfill a dream we have had for many years of establishing our own purebred Angus herd. Further, because of my position in beef cattle research and extension at Cornell University we were determined to see if all of the known technology could be used in a small, part-time beef herd with only family labor and limited funds and time available. So in the fall of 1977, Foxlair Farm began with 150 acres of marginal land and 33 bred Angus cows. We had no facilities or improvements at the start: only a poor barbed wire fence around the perimeter.

The following spring, the cows calved over a period of 100 days; that fall their calves had an average adjusted 205-day weight of 450 lb., but the actual weights of late calves were much lighter and they sold for considerably less (Table 1). Further, two of the three calves lost that year were born late in a remote pasture and died because

of inadequate observation.

As much as possible, we began building facilities and implementing the practices outlined last month. No new females were purchased. Since that time, we have reduced the calving season to 30-40 days and 205-day weights averaged 550 lb. in 1981,

an impact on fertility in the "real world."

One of our management errors, for example, was to feed better than 50% more protein than needed one winter. The next spring, herd birth weights averaged 98 lb! By comparing similar Angus cows bred to similar bulls at Cornell, we feel that 10-15

lb. of this was due to excess protein intake, which agrees closely with Montana studies cited in the March article. Increased birth weight did not cause any problems with our mature cows, and in fact may have improved weaning weights, but it was a disaster in heifers. Three of five calves were lost from heifers, because of the extreme difficulty we had in pulling the calves.

We also have learned that it is difficult to save late heifers for replacements, because they typically were smaller at calving even with equal 205-day weights. We also have found that virgin heifers fed to grow rapidly (but without fattening) can be bred to calve at two years of age in the same breeding season as the cows, because they will be cycling and will conceive earlier in the season than cows nursing calves. Then they are first to calve and have more time to get bred after having their first calf. We

while averaging over a 90% calf crop. About half of the original cows have been culled and we have had enough heifers meet our standards at weaning so that we will calve 38 purebred Angus this spring, compared with 33 in 1978. We will breed 55 females this summer, which includes 11 crossbreds. We have evaluated nearly all of the practices outlined in last month's article and have found that each does in fact have

Table 1: Effect of late calving on weaning weights.

	Number Head	Actual Weight Lb.	Adjusted Weaning Weight Lb.	Actual Value at Weaning \$/head
Calves weaned, born first 50 days of calving season	15 ^a	513	454	\$330
Calves weaned, born last 50 days of calving season	14 ^b	419	452	\$276

*^aEight steers and eight heifers.
^bSix steers and eight heifers. Actual weaning weights adjusted to seven steers and seven heifers.
Average price received = 70¢ for steers and 62¢ for heifers per pound.*

In 1977 Dan and Carol Lynn Fox established a purebred Angus herd at Foxlair Farm near King Ferry, N.Y. It was the realization of a long-time dream of both and in addition, Fox, who is head of beef cattle research and extension at Cornell University, was determined to see if all the known technology could be practically applied to a small, part-time beef operation where only family labor and limited funds were available. Five years later, the Fox's have the answer. Yes.

have had some heifers carrying their second calf, however, that did not get in adequate condition prior to calving, then were slow to cycle after having their second calf, so they got behind. We have had similar experiences with thin cows. Based on what we have learned, our reproductive management program now includes the following:

1. We try to get our cows in good flesh condition after weaning, before the onset of winter. It is easier and cheaper for us to do it then than during the winter or after calving; it makes it easier to maintain the cows during the winter and keeps us from getting caught with cows in unsatisfactory condition prior to calving.

2. We have two wintering groups with replacement heifers and thin cows fed separately from cows in good condition. Virgin heifers are fed to weigh 700-750 lb. by breeding time. Our basic ration (stored in a bunk silo) is sweet corn residue silage that is treated with anhydrous ammonia and minerals at harvest. We usually have 150-250 calves in our feedlot during the winter that get the best quality feed along with the replacement heifers. Mature cows in good condition receive the poorest quality feed, so none is wasted. We add ammonia and minerals to the feed prior to ensiling because they are excellent preservatives and to be sure all cattle are getting adequate amounts of protein and minerals.

3. Cows calve on clean sod near the house, between the end of March and the

first of May, when grazing begins. Earlier calving than this is difficult because of our weather conditions and increased labor requirements during cold weather. However, our calves average four weeks of age when good grazing begins so this calving time has worked well for us considering labor, weather conditions and optimizing forage use.

Cows are fed in late evening to increase the number of calves born during daylight hours when they can be observed easily and assistance can be obtained if needed. Heifers are calved in the barn near handling facilities so assistance can be given easily at birth. Calves are ear tagged, weighed, given oral scours vaccine and are injected with Bo-Se (selenium and vitamin E) and vitamins A & D.

Calves are closely observed and treated when needed for scours, which are a major problem in our area. We work closely with our local veterinarian in deciding which scours treatment procedures to use.

In 1980, nearly all of our calves required treatment. Last year, we implemented three practices to control scours; calving on clean sod, cow injection prior to calving to control E coli and the calf oral vaccine at birth to control rota and corona viruses. We only had to treat one or two calves for scours last spring.

4. Artificial insemination is a key part of our program. It allows us to use multiple sires, so we can better match an individual cow's line with a sire line estimated to give a good outcross. Further we can use sires from the Angus sire summary that have been outstanding in performance.

Cows are bred ~~A.I.~~ to synchronized heats, using either the one or two injection ~~ly~~ talyse system. We synchronize because we are involved in off-farm work and it is the only way for us to use A.I. Furthermore, a short calving season with calf births grouped allows intense management at calving. The off-farm work schedule can be kept flexible for those short periods of time, and we can be available if necessary during calving. One can stand to be short-changed on sleep if you know it won't last long! It also has been easier to schedule an A.I. technician to be present at the optimum time for breeding and he'll put you first on his priority list when he knows you will have a number of cows to breed when he arrives.

The system that has worked best for us is to hold the cows in drylot during the first synchronized heat, to facilitate heat checking and breeding. It also allows us to use K-Mar heat detectors because there are no trees, etc. for the cows to rub on and trip them.

The first synchronized heat is planned so the first breeding can be done over a weekend. Cows are carefully observed for standing heat at dawn, noon and dusk and are bred 8-12 hours after first showing standing heat. During peak breeding, we can schedule the A.I. technician to come at 6 a.m. and 6 p.m. knowing there will be cows to

breed. Without synchronization, it would be impossible to synchronize his schedule with ours so cows could be bred at the optimum time.

We have built good handling facilities, so cows can be sorted and handled quickly and easily to minimize stress (figure 1). The total time from the first heat until the last cow bred has been about 60 hours: then all cows bred are turned back to pasture, until about 17 days later when those not settled start returning to heat. The herd is then moved back to dry lot for heat detection and any necessary rebreeding. This second breeding period also peaks over a weekend, and lasts about four days. Thus, both periods of checking heat and breeding are accomplished over about six days, with four of them on the weekend.

At the end of the second period, a bull of a second breed purchased from our state performance tested sire sale is turned in. We put a chin ball marker on him, so we can predict birth dates. Thus the calves from the latest calving cows will be cross bred, because they invariably end up in the feedlot. The cleanup bull is removed about six weeks after the first cow was bred A.I. This breeding system has given us good results; 75-80% bred to the first A.I. service, and about 90% settled after two A.I. services.

5. Cows are pregnancy tested when the herd is worked in the fall (vaccination of calves, treatment for grubs and lice, worming). Open cows are culled unless it is determined they are open due to management errors or sire problems.

6. Replacement heifers are selected on the basis of adjusted 205-day weights, which must be over 500 lb. All other calves are placed in the feedlot, and an additional 100-150 feeder calves are purchased directly from other Angus breeders in New York.

Each breeder must work out his or her own system, depending on feed, labor and management skills available. However, we are convinced that most of the technology described in last month's ANGUS JOURNAL article can be used. Using it has improved economic returns, the value of our herd, and most importantly our personal satisfaction with our purebred Angus herd. The most satisfying part has been to see a black cow mothering a calf weighing about half as much as she does by weaning, using only grass. It is also fun to see the calves grow in the feedlot, finally ending up as choice beef that is easy to sell for a premium.

We have decided that a 1,200-1,300-lb. Angus cow is best for us, because that gives us a 1,200-lb. steer and 1,000-lb. heifer at low choice grade, with a carcass in the desirable weight range.

Having a part-time beef herd has been a lot of hard work and at times very frustrating. But there is no better way to get peace of mind after a hard day in the office than to climb in the pickup with my wife and go out and see the black cows and their calves grazing the beautiful green grass! **A**