Ridin' Herd

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Total confinement of beef cows is expensive

The dynamics in the beef-cattle industry remain volatile, with wide swings in the price of grains and forages. The high price of corn in 2012 and 2013 led to non-cropland being converted to cropland. Nebraska appeared to lead the nation, with about 55,000 acres converted from non-cropland to cropland.

This trend in the Midwestern states has put pressure on the availability of pasture for cows, and the price of harvested forages continues to be high. This trend appears to be a major factor in the cattle industry for 2014, even with the continued decrease in the beef cow inventory. High prices in forages are partly due to the widespread drought that caused harvested forage inventory to be low, in addition to hay acres being converted to crop acres. What options are there to build the nation's cow herd or to add a beef cow-calf enterprise with limited pasture that will no doubt be expensive?

Drylot beef cow-calf enterprise

The University of Nebraska (NU) is currently engaged in investigating alternative options to traditional cow-calf enterprises. The research is supported by the Ken and Caroline Eng Foundation. The premise is to research cow-calf enterprises that center around the large number of corn acres that are available in many Midwestern states. In addition, because of the low feeder-calf inventory (the lowest since the 1950s), there is excess bunk space in the feedlot industry. An alternative cow-calf enterprise could be built using the extra bunk space in the feedlot industry.

In the Nebraska experiment, composite June/July-calving cows were drylotted for 365 days. Cows were limit-fed a diet of distillers' grains and crop residue (either ground cornstalks or wheat straw). The limit-fed rations met the cows' nutrient requirements, but cows did not need to eat to their full capacity. The rations were 19% crude protein (CP) and 80% total digestible nutrients (TDN), but level of dry-matter intake (DMI) varied depending on stage of production.

A supplement was fed that contained an ionophore. While eating these rations, cows maintained weight and body condition when they were gestating or lactating. In addition, calf health was not compromised when calving in a drylot, and scours and respiratory disease were not problems. From a cow- and calf-performance perspective, 365-day drylotting posed very few problems that would not have been common in a more traditional range/pasture cow-calf enterprise.

At the university there are extensive data sets on spring-calving and early-summer-calving (June-calving) systems to compare to the confinement system. In these systems, records were kept on days grazing vegetative and dormant pasture; days grazing corn residue; and days fed distillers' grains, hay, baled residues and supplements.

The prices used for the comparison are described in Table 1. A different yardage was assessed for cows when they were in the drylot, grazing stalks or pasture, or fed supplement while on pasture. The "cow cost" row in Table 1 represents all other costs in an annual cow budget and includes replacement costs.

In Table 2, the confinement system is compared to three other cow-calf management systems. The June-calving herd is a Sandhills system that is basically pasture and protein supplement and essentially no hay. The spring-calving herd is a Southeast Nebraska research herd where cows graze pasture in the spring, summer and fall, then go to cornstalks followed by hay feeding during calving before grazing spring pasture. The other spring-calving herd is like the one described above except during the spring/summer/early fall, a combination of distillers' grains and ground residue is substituted for half of the pasture consumed daily.

Annual cow costs for the more traditional spring- and June-calving herds are similar. The "alternative" spring-calving herd (distillers'/ground forage combination fed while grazing pasture) had slightly higher annual cow costs. Annual cost for the total confinement system is about $265 greater than the three other systems used as a comparison in this analysis.

Actual weaning weights varied some for each system and ranged from 471 pounds (lb.) for the spring-calving herd to 557 lb. for the June-calving herd. Breakeven price was lowest for the June-calving system, with the confinement system having the highest breakeven. The spring-calving herd had the lowest annual cow costs ($730 per cow annually), but the breakeven in this system was not lower than the June-calving herd because the spring system had the lowest weaning weight. Annual cow costs in the spring-calving systems were competitive despite the lowest weaning weight because cows grazed corn residue in the winter.

NU researchers are going to continue

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Table 1: Base prices for economic analysis

Grass, $42 per month per pair	$1.40 per day
Cornstalk grazing	$0.50 per day
Distillers' grains[1], $170 per ton	$0.098 per lb. DM
Hay, $115 per ton	$0.064 per lb. DM
Baled stalks/straw, $90 per ton ground	$0.050 per lb. DM
Labor/yardage[2]	$0.10 per day
Mineral	$10 per year
Cow cost	$250 per year

[1]Based on 107.5% of corn at $4.30 per bushel, 90% DM price.

[2]$0.10 per day for cows in conventional systems; $0.20 for cows supplemented on pasture and $0.45 per day for cows in feedlot.

Table 2: Annual cow costs, weaning weight, breakeven

	June calving	Spring calving	Spring calving[1]	Confinement
Total, $	747	730	777	1,014
Wean, lb.	557	471	509	480
Base breakeven, $	1.34	1.55	1.53	2.11

[1]Half of the spring pasture substituted with residue-distillers' grains combinations.

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to investigate alternative cow-calf systems centered around crop residues. This will likely include a nontraditional calving time (July/August) and a combination of drylotting cows and grazing corn residue. Nebraska, like many states in the Midwest, has access to an underused resource, crop residues.

Final thoughts

Drylotting beef cows can and should be used as a drought-mitigation strategy. Push the pencil to determine the most economical feeding programs that can be used. When drylotting cows as a drought-mitigation strategy, consider limit-fed rations that contain distillers' grains or corn, especially if forage prices remain high, because limit-fed rations will be usually cheaper than full-fed rations. Remember, limit-fed rations meet all the cows' requirements, but cows are not fed all that they can eat. Total, 365-day cow-calf confinement systems are expensive compared to more traditional cow-calf systems that use pasture. Even when rations are limit-fed, the daily expense, or yardage, of having cows in a drylot adds to the annual cow costs.

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