



Ridin' Herd

► by **Rick Rasby**, beef specialist, University of Nebraska

Confinement systems can compete for managing of beef cows

The dynamics in the beef cattle industry remain volatile with wide swings in the price of grains and forages. The high prices of corn and forages of 2012 and 2013 were followed by lower grain and forage prices in 2014. Pasture prices were pushed up in recent years because pastures were converted to row crops, resulting in increased pasture rental rates. This trend in the Midwestern states has put pressure on the availability of pasture for cows.

This trend appears to be a major factor in the cattle industry for 2014, even with the continued decrease in the beef cow inventory. What options are there to build the nation's cow herd or add a beef cow-calf enterprise with limited pasture that will, no doubt, be expensive?

Drylot beef cow-calf enterprise

The University of Nebraska 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. We are in our third year of this experiment. Cows are limit-fed a diet of distillers' grains and crop residue (either ground cornstalks or wheat straw). The limit-fed rations meet the cows' nutrient requirements, but cows do not eat to their full capacity. The rations are about 19%

crude protein (CP) and 80% total digestible nutrients (TDN) on a dry-matter (DM) basis, 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 a problem, at least in our experiment. From a cow and calf performance perspective, 365-day drylotting posed 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 (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 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 distillers' grains plus ground residue combination is substituted for half of the pasture consumed daily.

Last year in an article written for "Ridin' Herd," our total confinement system was compared to spring- and summer-calving systems that we had extensive data to calculate our economic comparisons. The bottom line in that article was, based on

Table 1: Base prices for economic analysis

Grass, \$42/month/pair	\$1.40/day
Cornstalk grazing	\$0.50/day
Distillers' grains ¹ , \$108/ton	\$0.062/lb. DM
Hay, \$80/ton	\$0.44/lb. DM
Baled stalks/straw, \$50/ton ground	\$0.028/lb. DM
Labor/yardage ²	\$0.10/day
Mineral	\$10/year
Cow cost	\$250/year

¹Based on 86% of corn at \$3.50/bushel, 90% DM price.

²\$0.10/day for cows in conventional systems, \$0.20/day for cows supplemented on pasture and \$0.45/day for cows in feedlot.

Table 2: Annual cow costs, weaning weight, breakeven

	June calving	Spring calving	Spring calving ¹	Total confinement	Confinement stalks
Total, \$	734	695	706	755	711
Wean, lb.	557	500	502	486	580
Base \$	1.39	1.46	1.48	1.64	1.30

¹Half the spring pasture substituted with residue-distillers' grains combination.

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feed costs in 2013, total confinement was much more expensive, resulting in higher breakevens than the more traditional beef cow-calf systems that are based on grazed forage resource. Annual cow costs were about \$280 more per cow in the total confinement system than the most economical cow-calf system. The base breakeven for total confinement was \$77 per hundredweight (cwt.) greater than the lowest system breakeven.

The prices of the different feeds used in the current economic analysis are in Table 1. Compared to the feed costs used last year, all prices were changed to prices recorded in 2014 except grass costs. Grass cost remained the same in 2014 as it was in 2013. Yardage costs were added to each system as noted in the footnote at the bottom of the table.

Table 2 includes total annual cow costs, weight at weaning, and base breakeven for each of the systems. Different than last year, a cow-calf system was added that included a confinement and cornstalk-residue grazing system where pairs graze corn residue for about five months. Weaning weight is greater for the semi-confinement system, as calves grazed with their dam while on corn residue. Annual cow costs for the more traditional

spring- and summer-calving herds are similar and less than the total confinement system. Because of the price of distillers' grains and residue in 2014, the spring-calving system that includes feeding a ration of residue and distillers' is the least expensive system in our comparison.

The total confinement system is still the most expensive system, but the gap among systems closed a lot in 2014 compared to 2013. What is interesting is that the semi-confinement system that includes drylotting and grazing cornstalks is the least expensive system. As mentioned, weaning weights are greater for this group because they are older at weaning, but additional feed costs are included in the economic analysis of this system. Pairs grazing corn residue are being supplemented with a distillers'-based cube to meet the lactating cow's nutrient needs and, because the calf will eat some of the supplement, additional supplement was fed to make sure the cow's needs are met.

Researchers at the University of Nebraska are going to continue to investigate alternative cow-calf systems now centered on corn residue. When centering the cow-calf system on corn-residue grazing, alternatives will likely include a nontraditional calving

time — July/August — and include drylotting beef cows for a period of time in the spring and summer. 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. The recent drop in grain and forage prices appear to make it a competitive beef cow-calf system. When drylotting cows, consider limit-fed rations because limit-fed rations will usually be cheaper than full-fed rations. Remember, limit-fed rations meet all the cow's requirements but cows are not fed all that they can eat. Even when rations are limit-fed, include yardage in the costs. A semi-confinement system is competitive with other cow-calf systems.



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