

Sort Your Steers, Optimize Your Returns

University of Nebraska researchers document advantages of sorting steers into separate feeding systems based on weight.

by Ed Haag

If there is a single word that translates into maximum profit at time of sale, it is consistency. On the other hand, in today's grid pricing system, straying from the norm in weight or carcass quality can be the precursor to some serious financial consequences.

"Unfortunately most ranches do have a variation in their steer cattle," says Terry Klopfenstein, University of Nebraska–Lincoln (UNL) animal scientist. "Calves are born at different times in the spring, and when they are all weaned in the fall there is bound to be some variation."

In today's market this variation can stand in the way of a rancher maximizing his return on his calf crop, especially if all his steers, regardless of weight, are subjected to the same feeding system, Klopfenstein says.

In looking at three popular feeding systems — spring calf fed, summer yearling fed and fall yearling fed — each system has its specific limitations as it applies to a group of steers with a wide range of weights.

"The biggest challenge with calf feds is that we tend to get them too fat," Klopfenstein says. "This increases the risk of yield grade (YG) 4 carcasses."

He adds that on the other hand, with fall yearlings the tendency is for some of the heavier animals to get too big, thus falling into

the discounted overweight carcass category [heavier than 950 pounds (lb.)] at harvest.

It makes sense to sort

For Klopfenstein and his colleagues at UNL, one of the simplest ways to reduce the risk of being penalized at harvest is to sort steers into size categories at weaning and assign each group to the feeding system to which it is best-suited.

"We need to match cattle up with the most appropriate system," he says. "The big cattle need to be calf feds, and the little cattle need to be kept back as fall yearlings."

In that way a rancher is not wasting valuable nutritional resources on large cattle that could be cycled into the feedlot sooner than the rest of his steers. This also reduces the risk of producing oversize cattle that are discounted at harvest, Klopfenstein says.

The smaller animals that require additional grazing time to develop before entering the feedlot will be able to do so.

Klopfenstein adds that sorting and selling animals off as they reach their ideal feedlot entry weight staggers the sale of calves over the entire year. This, in turn, allows the rancher to avoid the inevitable drop in calf price associated with the fall market glut.

"Because of supply and demand, the fall is

the worst market of the year," he says. "That is well-documented."

He notes, even with those animals the rancher does sell in October, the three-system sorting strategy helps insulate him from the seemingly inevitable discounts associated with the fall.

"Interestingly, the statistics show us that if your calves weigh about 650 pounds and [are] ready to go into the feedlot as calf feds, they are not discounted nearly as much in October," he says. "This is because they can make a May market, which has traditionally been a good market for fat cattle."

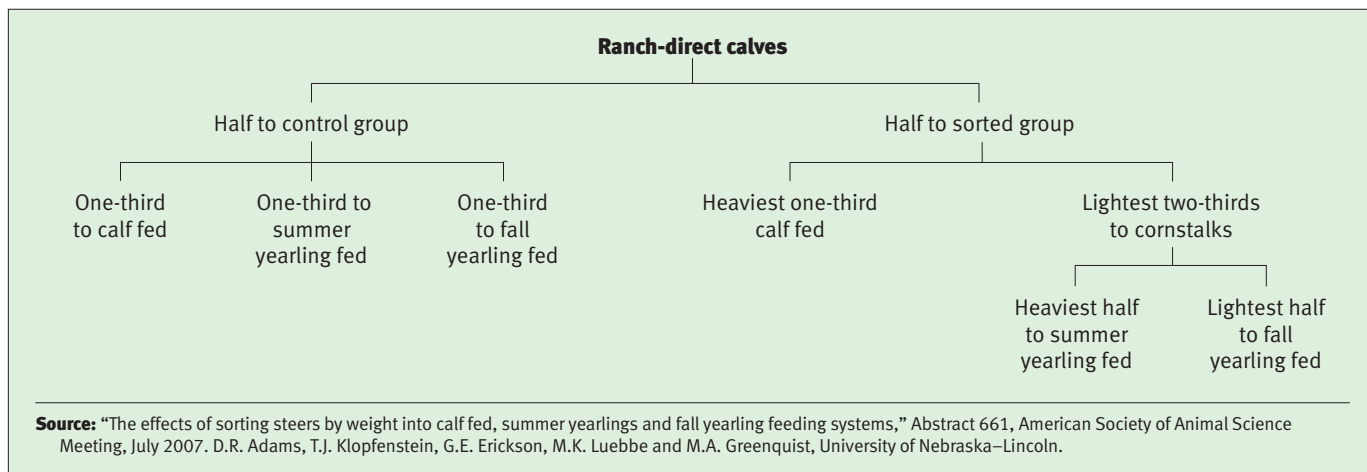
Other advantages to sorting

For Klopfenstein there are other reasons to sort steer calves into weight-related lots and sell them off incrementally. He points out that in addition to allowing a rancher to benefit from improved markets, extending the time frame during which steers are marketed also offers the kind of financial flexibility that is often required of a modern business operation.

"For example, there may be a tax issue with some calf producers," he says. "It might make sense to hold cattle over January to get them in the next fiscal year."

Ron Torell, University of Nevada Cooperative Extension livestock specialist,

Fig. 1: Design of the study



Source: "The effects of sorting steers by weight into calf fed, summer yearlings and fall yearling feeding systems," Abstract 661, American Society of Animal Science Meeting, July 2007. D.R. Adams, T.J. Klopfenstein, G.E. Erickson, M.K. Luebbe and M.A. Greenquist, University of Nebraska–Lincoln.

agrees that sorting steers into three weight groups can open a range of opportunities not available to producers who sell all their steer calves in one lot. He cites, as an example, one very lucrative market that exists in Nevada for the animals that are sorted into the lightest group.

“These lightweight calves have some compensatory gain on them, because they have been held back on the summer ranges in North Nevada,” Torell says, adding that these animals are less than 500 lb. “That means they have the frame but not a lot of flesh, so when they hit green grass they just explode.”

He points out that these light cattle are perfect candidates for what beef producers in the Southwest refer to as the double-season grazing program.

“Usually they are shipped to California and put on winter grass where they can put on a fast 250 pounds and then, at the end of April, they are back to grass in Oregon, Washington or Nevada,” he says. “By the end of August they are off grass at 800 to 900 pounds and into the feedlot to be slaughtered at the top of the fat-cattle market in December.”

Torell adds that because of demand, steer calves in the light category often bring higher prices per animal than the mid-range animals (550-lb. average) that are too heavy to work in the double-season grazing scenario.

In spite of these well-known advantages, the majority of steer calves in Nebraska are still sold right off the ranch in October, Klopfenstein says. He speculates that one reason selling off an entire calf crop in the fall continues to be the dominant strategy among beef producers in his state is that, until very recently, calf producers did not necessarily have the resources required to take their steers to the next phase in their development.

“To make this work you have to have a fairly low-cost backgrounding system,” he says. “For beef producers in Nebraska today, this means cornstalks and ethanol byproducts.”

Klopfenstein cites as an example a rancher who weans 300 steer calves in October. “In that situation it would make sense to go ahead and either market or retain ownership in the feedlot of the heaviest 100 head,” he says. “Then the rancher would background the remaining 200 head on cornstalks and ethanol byproducts until the spring, when he would sell the next heaviest 100 head. The remaining steers, which were his lightest, he would put out on grass until the fall when they would be ready for the feedlot.”

Testing the premise

While there was considerable anecdotal evidence that supported the view that

sorting steers by weight at weaning does improve feedlot performance and carcass characteristics, researchers at UNL embarked on a study to scientifically evaluate the premise.

“To start with, we bought 288 newly

weaned steers in the fall from two different ranches,” Klopfenstein explains. “Even though they were acquired from operations that were similar, within those groups there were variations in the weights of individual cattle.”

The objective of the study, he says, was to take the weight and size variation normally found in large groups of steer calves and take advantage of those differences by sorting the animals by weight to improve feedlot performance and carcass characteristics.

The weight of the steer calves received averaged 591 lb., with the smallest weighing 374 lb. and the largest 870 lb.

All the cattle were assigned randomly into sorted or unsorted groups of 144 animals each.

The unsorted group was then assigned randomly to one of three feeding regimens: calf fed, summer yearling fed or fall yearling fed. The calf feds from the unsorted group immediately entered the feedlot, where

they were fed from November to May. The summer and fall yearlings from that group grazed cornstalks together through the winter until spring and then grazed cool-season grass until May. The yearlings fed during summer entered the feedlot in May and were fed until

October. The yearlings fed during the fall grazed pasture until September when they entered the feedlot and were fed until January.

In the sorted group, the heaviest one-third were fed as calf feds with treatment identical to the unsorted calf-fed group. Like the remaining unsorted cattle, the remaining sorted steer calves were wintered on cornstalks and ethanol byproducts followed by spring grazing on grass into May, when the heaviest one-half of those animals entered the feedlot. The steers left,

represented by 48 of the lightest animals, were grazing on grass through the summer. In October they entered the feedlot as fall yearlings and remained there until January. Both the sorted and unsorted groups were treated as one group during grazing.

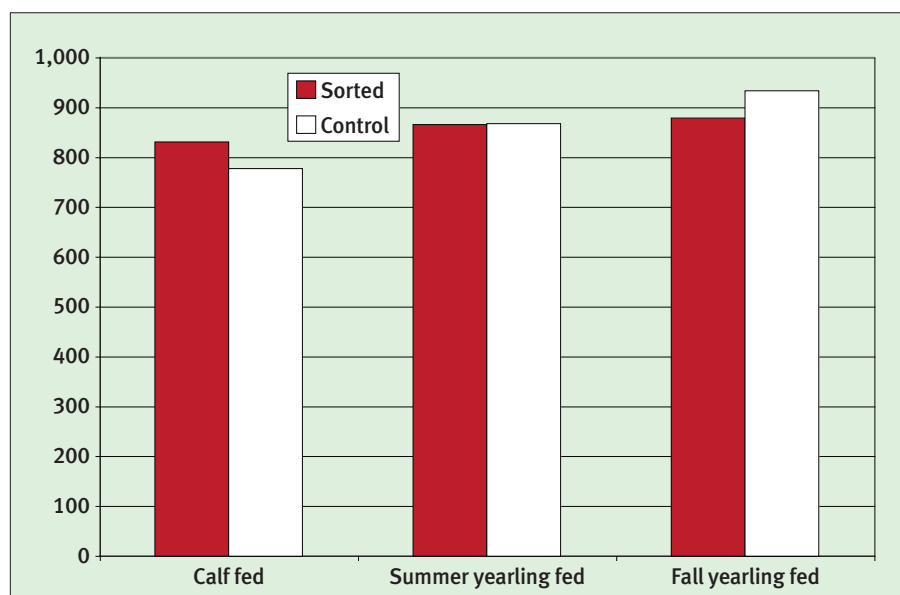
All steers, at the time of harvest, were measured for hot carcass weight (HCW), ribeye area and 12th-rib back fat. Quality grades were collected at the plant, and each animal’s USDA Yield Grade was calculated and recorded. Final body weight

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— Terry Klopfenstein

Fig. 2: Hot carcass weight, lb.



Sort * Feeding period interaction $P < 0.0001$.

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was calculated by dividing the HCW by an average dressing percentage of 63%. The final body weight was used to determine feedlot performance.

Results informative

While there was no difference between sorted and unsorted cattle in HCW, dry-matter intake (DMI), average daily gain (ADG), gain efficiency, fat thickness, marbling, and number of cattle with YG 4

and higher, sorting by weight did reduce variability in groups that were sorted when compared with the unsorted control groups. For instance, sorting decreased the level of variation in initial feedlot body weight (BW) and HCW. The researchers also observed that all values fell to within three standard deviations of the mean.

For Klopfenstein and his colleagues involved in the study, this reduced variability reflected positively when the data pertaining

to sorted and unsorted was compared. Sorting increased the average initial weights of calf feds by 91 lb. and reduced the average initial feedlot weights of the fall yearlings by 64 lb.

In addition, sorting reduced the standard deviation by 38 lb. in summer yearlings and 51 lb. in fall yearlings when the steers were sorted.

This decrease in the weight variability in the sorted groups was positively reflected in

a reduction in the percentage of carcasses heavier than 950 lb. and 1,000 lb. in the yearling-fed categories. For example, the percentage of fall yearling-fed cattle with carcasses heavier than 950 lb. was 42% in the unsorted group, while it was 11% in the sorted group. The percentage of those animals with carcasses heavier than 1,000 lb. was 23% in the unsorted cattle and 2% in the sorted cattle.

Similarly, the percentage of unsorted

summer yearling-fed cattle with carcasses heavier than 950 lb. was 19%, while animals producing carcasses heavier than that weight in the sorted group was 4%.

In all groups combined, 21% of the carcasses of the unsorted cattle were heavier than 950 lb., while the percentage of overweight carcasses in the sorted category was 7%.

“In this study we were successful in confirming that sorting cattle into feeding

periods decreases variation in HCW and the number of overweight carcasses,” Klopfenstein says, adding that it was accomplished without negatively affecting performance or carcass characteristics. “The results of this study illustrate that we need to match cattle of a particular weight up to the appropriate system if we hope to optimize our returns at slaughter.”

