Dual Spring and Fall Calving Herds: Some Lessons Learned

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A few years ago, my colleagues at Texas A&M University-Kingsville participated in a long-term research project conducted on the famous King Ranch (KR) that involved a comparison of two different grazing systems on forage response and cattle performance. Briefly, one system represented the traditional practice of continuous grazing in the same pastures, year after year, which served as the basis for comparison to a Merrill-type grazing method. The Merrill grazing method consisted of four large pastures. In any one year, one pasture was stocked with Fall-calving cows, a second pasture with Spring-calving cows, and a third pasture with stockers (one or even several groups of stockers may be run in one year, largely depending on rainfall). At the beginning of each year, and assuming a typical rainfall year of about 26 inches, stocking rate was calculated so as to leave approximately one-half of the residual forage base by the end of the year. A fourth, idle pasture was without cattle grazing activity to allow for rest and forage seed banks recovery. For the next year, cattle were rotated, and so on every year. By the end of year four, all four pastures had each been rested for one year. Bear in mind that KR consists of over 825,000 acres. Cattle are rounded up only once or twice a year. Sources of water are few and far between. It is the position of KR management that it is not practical to implement an MIG-style grazing method.

During the KR study, and based on reviewing the literature, we learned of several apparent advantages of the Merrill method. As a buffer against severe drought (such as in 2009), stockers can be

sold to free-up a large pasture(s) that can be grazed by cows. This avoids costly destocking of cows and rebuilding of the herd. Another buffer effect is realized when one cow group may be raising calves during an unfavorable season (e.g., a dry spring), while the other cow group instead may be raising calves under more favorable conditions in another season. The same can be said about market prices because calves and cull cows can be sold at two times rather than only once a year. This advantage was attractive since I (the first author of this article) sell weaned calves mostly as breeding stock. It would avoid having to inform a prospective client that "I just sold the last one - you will have to wait until next year"! Also, bulls can be used for breeding at two times of the year rather than only one time. KR claims that there is also more efficient use of labor that is spread out over the year, rather than being concentrated at calving time only once a year.

In addition, KR will typically "roll-over" a non-pregnant but healthy cow to the other breeding group, losing only 6 months rather than an entire year. A specific notch is made to one ear. If the same scenario occurs again later, and this notch is noted, she is immediately sold. The rationale is that she will likely rebreed and may even remain productive for several more years. KR figures that it costs between $800 and $900 to develop a replacement heifer. Further, following a severe drought, the economic decision may be made to delay breeding heifers by six months by placing them in either the Spring or Fall breeding herd. Overall, key words that epitomize the Merrill method as practiced at KR are *buffer* and *flexibility*, two essentials for adverse environments. Of course, every grazing method has its own unique set of advantages and disadvantages. However, successful grazing management systems are characterized by having the flexibility to respond to changes in rainfall patterns, vegetation responses, and markets.

Actually, this short article has little to nothing to do with either the King Ranch or the Merrill method. In fact, the aforementioned study is still underway. However, because of the apparent

advantages mentioned above, in 2007 the decision was made to split my own cow-calf enterprise into Spring and Fall calving herds. I wish to share with SGF readers the results of three years of data collection, as well as personal observations. But first, I refer the reader to previous SGF issues (May-July, 2007) that describe in good detail the adverse south Texas environment, and my grazing and cattle management practices that were adopted to fit the demands of this environment.

In the Fall herd, calves were mostly born in October since bulls had been turned out previously after the first of the year. The first freeze usually occurred by late October to early November. By late November to early December, cows were provided with an energy-protein supplement of whole cottonseeds to maintain adequate body condition throughout the winter. The feeding level mostly depended on forage quality. It should be stated that hay has not been fed in over 9 years. In all three years, it was observed that providing an adequate level of supplements for the Fall herd was indeed a major challenge. This was especially the case for 2 year-old heifers with young calves. Even when feeding 10 pounds of whole cottonseeds per head (providing about 2 pounds of fat and 2 pounds of protein; cost of cottonseeds being about $300 per ton), it was observed that some heifers still lost precious body fat reserves, even flesh condition. Notwithstanding this, heifers had to be soon rebred! Any cattleman knows all too well that this is the “make or break” point of a potentially good cow. If the heifer fails to rebreed it is, more oft than not, the fault of management.

In contrast, my Spring cow herd was exposed to bulls in the mid-summer (late July through August), including some artificial inseminations. Calves were mostly born in May, allowing cows to usually have a full month of grazing lush, green pastures before calving. Except during the extreme drought of 2009, it was not necessary to provide supplements (other than minerals) to the Spring herd. Of relevance, one key to summer breeding is good bull fertility. My Senepol-Tuli-Red Angus (Star) composite bulls were fertility tested in summers by local veterinarians.

Later, when calves were weaned in Fall (usually after a good rain rather than the calendar age of the calves), it was not necessary to provide energy-protein supplements to cows when there was adequate rainfall in the winter. Cows thrived on winter greens, mainly forbs or weeds, as well as on residual green grass nestled at the base of tall and thick forage swards – the result of planned pasture stockpiling. In fact, cows even gained body condition to a minimum 6 score without supplements during such wet winters. For example, in the Fall of 2009 when calves were weaned, cows had an average BCS of 5.5. By the end of February of 2010, and again without energy-protein supplements, average BCS increased to 6.8 (range of 6.0 to 7.5).

For winter grazing, one common alternate practice is to sow rye grass or winter oats. However, in south Texas dry winters are not uncommon, whereby seed fails to germinate. A more sustainable and economically less risky approach again is to stockpile forage.

In terms of calf production, birth and weaning weights were also compared between Spring and Fall herds involving records on a total of 70 calves. Prior to conducting statistical analyses, weaning weights were pre-adjusted to a 205 age constant, as well as for age of dam, and to a steer basis. The analyses utilized contemporary group and pedigree data, such that effects due to genetics versus environmental were separated.

Results revealed that there were no major differences in birth weights between herds. Interestingly, and despite having to supplement the Fall calving herd, average weaning weights were consistently lower by 51, 123, and 47 pounds compared to the Spring calving herd for 2007, 2008, and 2009, respectively (see figure). These numerical differences are solely of an environmental nature. In 2008, the large 123 pound difference is best explained by a more favorable spring relative to a less favorable fall compared to other years.

One reason for the lighter weights of Fall calves was the seemingly higher nutrient requirements for both cows and calves needed to simply to stay warm during winter. Of course, another reason was the lower forage quality. As testimony, the photo shows one group of Fall-born calves showing rough hair coats and less-than-optimal body development. Other negative considerations include the additional labor required to feed the Fall herd during winter. It is better to take a well-deserved vacation! A table is provided that show merits and demerits of Fall versus Spring calving.

Unfortunately, only one enterprise budget was maintained during these years, so it was not possible to calculate precise feed and labor costs or returns per cow or per acre. Also, cows were often moved to pastures previously grazed by the other cow herd. However, a reasonable calculation was that feed cost per cow was at least $100 higher for Fall compared to Spring herds. In short, for the Fall herd operation, it cost more to produce less! In conclusion, the simple lesson learned is it pays to work with Nature!

Figure 1. Average weaning weights of Spring- compared to Fall-born calves.

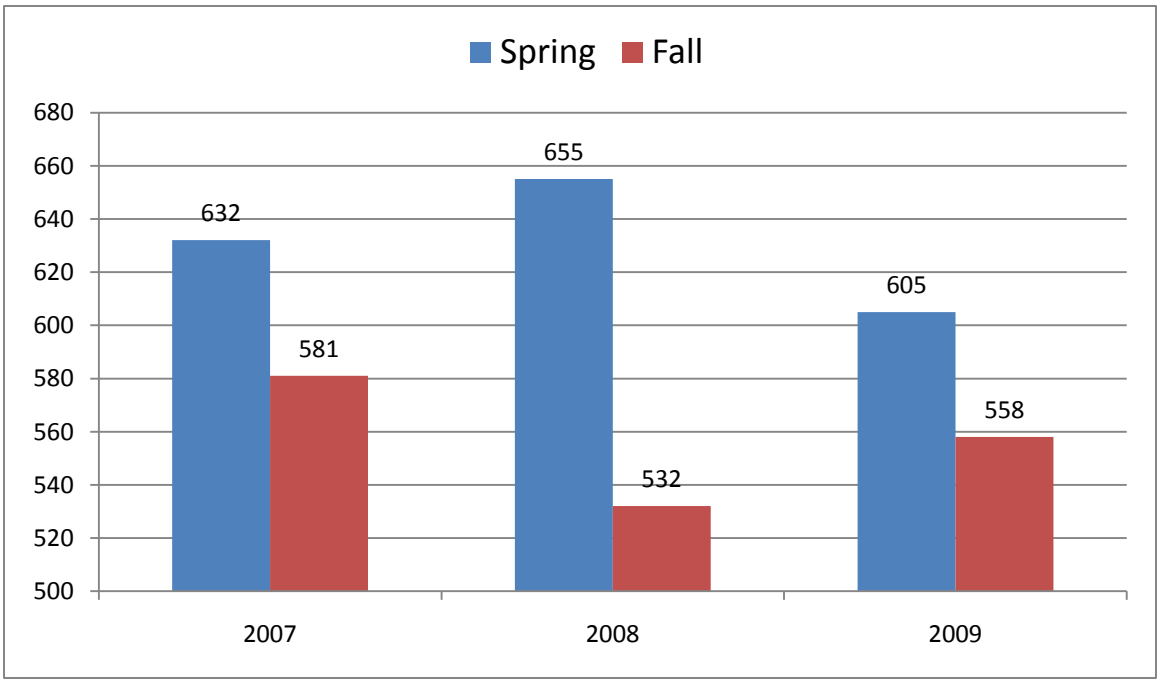

Table 1. A glance at Fall compared to Spring calving herds.

	Fall	Spring
Feed costs/cow	>	<
Labor	>	<
Climate	<	>
Forage quality	<	>
Cow BCS	<	>
Calf WW	<	>