Angus Advisor

► **SEPTEMBER** herd management tips

Guide to abbreviations and acronyms

To make the "Angus Advisor" more concise and consistent, we have used the following abbreviations or expressions:

$Values	dollar value indexes
ADG	average daily gain
AI	artificial insemination
AIMS	Angus Information Management Software
BCS	body condition score
BLV	bovine leukemia virus
BMP	best management practices
BQA	beef quality assurance
BRD	bovine respiratory disease
BRSV	bovine respiratory synctial virus
brucellosis	Bang's disease
BSE	bovine spongiform encephalopathy
BVD	bovine viral diarrhea
Ca	calcium
CHAPS	Cow Herd Analysis and Performance System
CP	crude protein
cwt.	hundredweight
DM	dry matter
EPD	expected progeny difference
ET	embryo transfer
FMD	foot-and-mouth disease
GnRH	gonadotropin-releasing hormone
IBR	infectious bovine rhinotracheitis
ID	identification
IM	intramuscular
in.	inch
lb.	pound
LCT	lower critical temperature
lepto	leptospirosis
Mg	magnesium
MiG	management-intensive grazing
MLV	modified-live virus
N	nitrogen
P	phosphorus
PI	persistent infection
PI_3	parainfluenza-3 virus
preg-check	pregnancy-check
Se	selenium
sq. ft.	square feet
SPA	Standardized Performance Analysis
TB	bovine tuberculosis
TDN	total digestible nutrients
THI	temperature-humidity index
trich	trichomoniasis
Zn	zinc

Mid-South Atlantic Region

*by **Kevin Shaffer**, West Virginia University, Kevin.Shaffer@mail.wvu.edu*

Because greater than 85% of the genetic improvement in a cow herd comes from the sire, effective and appropriate sire-selection decisions are imperative to the sustained profitability of the cow-calf enterprise. Although many selection tools exist, EPDs are the most accurate, effective and widely used selection tool available, so producers should educate themselves on the meaning of EPDs and how to interpret them.

EPDs are a prediction of relative genetic merit expressed as the expected difference in performance between one sire's progeny when compared to another by accounting for individual, progeny and ancestral performance. Although often perceived as absolutes, EPDs can and will vary.

When an animal is young and only limited information is available, EPDs assume that the individual received a random assortment of genes from the parents; however, as breeders report individual and progeny performance data, EPDs change. The extent to which EPDs can vary is dependent upon their associated accuracy, which is a measure of the reliability of the EPD and, in effect, represents the probability that the estimate is correct.

Within a given level of accuracy, there is a range within which the EPD will most likely stay, which is termed the possible change value (PCV). Possible change values are the standard deviation for the EPD at a given accuracy, meaning that around two-thirds of the time, the EPD will fall within +/- the PCV.

Consider that you are comparing two yearling bulls using birth weight (BW) EPD. Sire A has a BW EPD of 0.0, and Sire B has a BW EPD of +5.0. Because neither bull has any progeny records at this time, only each bull's individual performance and ancestral records contribute to the EPD and accuracy is relatively low (approx. 0.35). The accuracy value tells us that the current estimate or EPD has a 35% chance of being the true relative progeny performance value of these two bulls. Knowing that, we then find that the possible change value of BW EPD at this accuracy is ≈ 1.8, meaning that Sire A's true progeny performance value for BW would likely fall within ± 1.8 lb. of 0.0 and Sire B's true progeny performance value would likely fall within ± 1.8 lb. of 5.0 two-thirds of the time.

Because BW EPD is an indicator of a sire's ability to transmit BW to his progeny and is expressed in pounds, the expected average difference in progeny birth weights of Sire A and Sire B would be 5 lb., meaning that if Sire A's calves averaged 80 lb. at birth, Sire B's calves would be expected to average 85 lb. (This could just as easily be 67 lb. and 72 lb. or 93 lb. and 98 lb.). However, actual birth weights will typically range from 20 lb. above the average to 20 lb. below the sire group average. So even though we typically think of this example as a drastic difference in BW, Sire A will frequently sire calves that are heavier at birth than Sire B. In fact, given the standard deviation for BW, as many as 30% of Sire A's calves will be heavier at birth than the average calf from Sire B.

As I stated earlier, sire selection is the primary means by which you make genetic improvement. EPDs are an excellent means to assist you in identifying the correct bull; however, to make accurate and effective selection decisions, you must be able to identify bulls that will consistently provide you with a set of genes that are helpful, not just a "better" EPD. It is important to note that it is easy to create a "better" EPD at low accuracy, but much harder to have it stand up over time.

Breeders may attempt to create breed-leading EPDs and increase genetic change by selecting for extremes; stacking multiple generations of ET-generated females, especially from donors flushed as virgin heifers, and continually using unproven, low-accuracy sires with breed-leading EPDs. As a result, their product appears ahead of the curve and some of them are, albeit a small percentage, but the probability is that most aren't. In reality, they aren't ahead of the curve; they are only ahead of the proof, so take a deeper look the next time you are shopping for a bull to see just how much information is behind the bull.

Southern Great Plains

*by **David Lalman,** Oklahoma State University, david.lalman@okstate.edu*

Spring-calving herds

1. Purchase supplies needed to complete the herd health program and prepare for processing calves at weaning in September or October.
2. As the weaning date approaches, be sure to have facilities and equipment checked, repaired or updated as needed. This is a great time to have your scale certified. Spend some time with the torch and welder to make those little improvements to your working facility that you have been thinking about doing for years.
3. A well-planned and well-executed weaning management and nutrition program are major components in a successful weaning period. Fenceline weaning in a pasture is preferable to sudden, complete removal and pen confinement. If pasture weaning is not an option, consider keeping the calves in the pen next to the cows in the pasture. Once calves have stopped bawling, immediately move them out to a pasture.
4. Weaned calves can gain 1.5 lb.-2 lb. per day grazing good-quality pasture during late summer and early fall if a complementary supplement package is provided. In situations where good-quality pasture is not available, calves can be fed a growing ration in a drylot, generally resulting in very efficient feed conversion. Consult a nutrition expert for assistance with ration balancing and supplement packages.
5. Weaning is also an important time in the herd health program as it relates to the mature cows and replacement heifers. Potential management steps to be considered at this time include annual vaccinations, brucellosis vaccinations for replacements, pregnancy diagnosis, deworming and treatment for other parasites, retagging, culling decisions, and freeze-branding replacements.

Fall-calving herds

1. Calves should be individually identified and weighed within 24 hours of birth.
2. Identify herd sires to be used in the AI program and purchase semen.
3. Plan the herd health program to be administered at "branding" time. Research published by Oklahoma State University (OSU) veterinary scientists indicates that, in properly immunized cow herds, an MLV combination vaccine given at branding, followed by revaccination at weaning is as effective a vaccination

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Western Region

*by **Randy Perry,** California State University, Fresno, randyp@csufresno.edu*

Fall-calving herds

Main focus is the calving season.

1. Develop a list of potential AI sires. Focus on bulls that will produce high-quality herd replacements.
2. Supplies should be on hand, and proper equipment should be available to assist females with problems at calving. Be sure that personnel are properly trained in the most current procedures recommended for assisting females that are experiencing calving difficulties.
3. As calves are tagged and weighed at birth, their navel stumps should be dipped or sprayed with a mild iodine or betadine product.
4. If you are in a selenium-deficient area, calves should receive a selenium injection at birth.
5. Be sure that calves nurse within the first 6 hours after birth. A supply of frozen colostrum should be on hand and should be replaced at the start of each calving season. Do not freeze all of the product in one bag; rather, divide it into the proper amount that would be fed to a newborn calf (about ½ of a calf bottle) prior to freezing.
6. Monitor females for the incidence of retained placenta. If problems arise, treat them promptly with a prostaglandin injection (5 or 6 cc).
7. Be sure that cows are receiving adequate levels of calcium, phosphorus and trace minerals that are deficient in your area. The mineral products that include chelated minerals are more expensive but offer much better rates of absorption. Mineral boluses or injectable products can be used in addition to loose or block mineral products.
8. Monitor body condition score (BCS) of calving females. The target level of BCS at calving is 5.0 (scale = 1 to 9) for mature cows and 6.0 for 2-year-old heifers. Ideally, this level of body condition should be maintained during the breeding season. However, this is sometimes difficult to achieve, especially with cows that have extremely high levels of milk production.
9. Avoid getting cows overconditioned during the breeding season as reproductive performance starts to decline if cows are above a BCS of 6.5 to 7.0.
10. Be certain that both protein and energy requirements are being met. Supplements should be compared on a price per unit of either protein or energy depending on which nutrient is the most limiting in your situation. In general, if forage is available and is of poor quality, protein will be the most limiting nutrient. If the availability of forage is limited, energy most likely will be the most limiting nutrient.
11. Have treatment protocols and products on hand for both scours and pneumonia in suckling calves. If cows are calving on irrigated pastures, be prepared to have a higher incidence of scours in young calves. Have first and second treatment options for both conditions, and be sure that the protocols have been communicated to the appropriate personnel.

Spring-calving herds

Main focus is to prepare for weaning.

1. Cows should be pregnancy-checked at weaning time. Avoid holding over open cows even if they have been excellent producers as typically the problem will re-occur. As a general rule, each open cow that is maintained without raising a calf steals the profits from four cows that are raising calves.
2. In terms of protein and energy supplementation, usually spring-calving cows can perform adequately without supplementation at this time of year provided that forage is available.
3. Be sure that both weaned bull and heifer calves are being developed at adequate rates of gain so that differences in terms of genetic potential for growth can be exhibited. However, neither sex should be developed at extremely high rates as excessive fat deposition can hinder future reproductive performance and detrimentally impact foot and leg soundness. Our target levels of performance in developing bulls is an ADG of 3.0 lb. per head per day and for heifers is an ADG of 1.5 lb. per head per day.
4. Calves should be administered preweaning vaccinations for the respiratory disease complex at least two to three weeks prior to weaning.
5. After weaning, control internal and external parasites and heifer calves should be vaccinated for brucellosis, or Bang's disease.
6. Consider pasture weaning if you have the facilities to accommodate this management technique. Minimal electric fencing can be used quite successfully and pasture weaning usually results in significant reductions in the incidence and severity of respiratory disease associated with weaning.

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strategy as vaccine given preweaning (21 to 30 days) followed by revaccination at weaning.

4. Lactating fall-calving cows will likely lose some body condition during the calving and early lactation period. Ideally, your cattle genetics, forage management and supplementation program would result in limited weight and body condition loss during this critical period. In other words, when these components of your program are not "in sync," the cows will lose weight too rapidly, resulting in few cows cycling at the beginning of the breeding season and lower conception rates. Either that or you will have to spend a lot of money on the nutrition program to minimize this rapid weight loss.

General recommendations

1. Harvested forage should be tested for nutrient value. Forage testing and monitoring cow condition are the best tools to use in determining an appropriate nutrition program for fall and winter. A list of certified commercial laboratories is available at *www.foragetesting.org*.
2. Concentration of critical minerals in forage declines as forage matures and as leaf-to-stem ratio declines from grazing pressure. Minerals that are of particular concern in the predominant forage species found in the Southern Great Plains include phosphorus, copper, zinc and selenium. Specifically, over the past year, the Oklahoma Animal Disease Diagnostic Laboratory found a significant number of copper deficiencies in newborn calves. Vitamin A is also critical when animals consume mature and senescent forage. A balanced supply of vitamins, macrominerals and microminerals is an important component of the overall herd health program, which influences health of weaned calves, as well as reproductive success.
3. Late-summer applications of about 50 lb. per acre of nitrogen can produce high-quality Bermuda grass or fescue pasture from October through December. Pastures should be grazed, hayed or otherwise mowed before the fertilizer application is made. Forage production will be highly dependent on late-summer precipitation. AJ