Angus Advisor

► **MAY** 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

Southern Great Plains

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

Spring-calving herds

- For most producers in the Southern Great Plains, May is "branding" time in spring-calving herds. Your veterinarian should be consulted regarding the appropriate animal health strategies to administer at this time. Typical protocols will include branding, fly tagging, castrating bulls not intended for breeding purposes, vaccinating with a seven-way clostridial bacterin, and occasionally with an IBR and PI_3 product. Be sure to replace missing animal ID tags in both calves and cows.
- Recent research published by Oklahoma State University (OSU) veterinary scientists indicates that, in properly immunized cow herds, a modified-live respiratory viral combination vaccine given at branding, followed by revaccination at weaning, is as effective a vaccination strategy as vaccine given preweaning (21-30 days) followed by revaccination at weaning. Previously, it was thought that maternal antibodies reduced the effectiveness of a respiratory viral vaccine given at branding time (30-90 days of age). This vaccination protocol is becoming a very popular strategy as animal handling and labor are minimized, because calves are traditionally handled at branding and weaning. Additional respiratory viral vaccine revaccination or booster vaccination will be dependent on future production channels — feedlot, replacement heifer, performance testing trials, etc.
- May is a good time to deworm cattle as part of a strategic deworming program because the animals have had ample time grazing spring forage to carry a significant parasite load.
- Breeding soundness exams should be performed on bulls before they are turned out with cows. The appropriate bull-to-cow ratio will depend on many factors, including age of the bull, size of the pasture, and the number of cows or heifers serviced to AI. A conservative rule of thumb is to expose the same number of cows or heifers according to a young bull's age in months. For example, a 14-month-old bull might be exposed to 14 females, while a 2-year-old bull might be exposed to 20-25 cows.

Fall-calving herds

- Purebred breeders in the Southern Great Plains wean fall-born calves between April and July. If the calves will be handled (constrained in a squeeze chute) in the spring and weaned during summer, take advantage of the May "calf working" event by administering a vaccination and possibly a deworming program recommended by your local veterinarian.
- Look for and record cows that should be culled due to calf performance, feet, leg, eye, udder and attitude problems. These records are often more practical to collect and record prior to the weaning date.
- At weaning, vaccinate calves according to your veterinarian's recommendations, weigh and condition score cows, and weigh calves.
- While we are on the subject of weighing cattle, remember that being consistent in terms of weighing "conditions" is an important part of collecting quality data over time. Industry standard weighing conditions can be described as semi-fasted. This simply means that cattle are generally gathered in the early morning hours before they've had a chance to graze very much. Weights should then be recorded within the next few hours, if possible.
- Transfer whole-herd records to your national breed association for processing.

General recommendations

- As of this writing, drought looms again, with portions of Oklahoma, Texas and New Mexico classified in the "abnormally dry" to "exceptional drought" categories, according to the National Drought Monitor website (*http://droughtmonitor.unl.edu/*). Rains in late winter and early spring drive the bulk of forage production in this region. Therefore, if precipitation in your area continues to be marginal by the time you read this in May, it is time (actually past time) to implement your drought-management plan.

  The goal is to protect the natural pasture or rangeland resource and maintain animal well-being, productivity and health. The biggest mistake many producers make in times of drought is to wait too long before intervening (reducing stocking rate, early weaning, drylot feeding, etc.).

  Keep a close eye on livestock water sources as many lakes, ponds and streams are low to extremely low. Consider not only water quantity, but also water quality and livestock's access to the water. You certainly don't want cattle to have to walk through brisket-deep mud to reach water. This is a risk to the cattle and very hard on the water-source structure.

- Implement a fly- and tick-control program for all cattle. Ticks are particularly bad thus far this year.
- Assuming we receive late spring moisture, plant Sudan grass and Sudan hybrids for summer grazing or hay, fertilizing according to soil tests. Nitrogen fertilizer efficiency is improved when nitrogen applications are split into two or more applications approximately 30-45 days apart during the growing season. Late May or early June is a good time to plan the second application.
- In most cases, mineral supplements containing 4%-10% phosphorus are adequate during this time of year.
- In this region, foot rot is a common problem through late May, June and early July. Limited research indicates that the addition of chlortetracycline to mineral supplements can reduce this problem. Adequate zinc supplementation is also important because many soil types and forages in the Southern Great Plains do not contain adequate zinc.

Western Region

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

Fall-calving herds

The main focus is to prepare for weaning. Cows are on cruise control.

Pregnancy-check. Cows should be preg-checked at weaning time. Avoid holding over open cows even if they have been excellent producers, as typically the problem will reoccur.

Heifer and bull development. The developmental period from weaning until yearling time and beyond to the start of the breeding period is critical in terms of influencing the future productivity of both bulls and heifers. Both sexes need to be developed at adequate rates of gain so that differences in terms of genetic potential for growth can be expressed. However, neither sex should be developed at extremely high rates, as excessive fat deposition can hinder future reproductive performance and detrimentally affect foot and leg soundness.

Weaned calves. Weaned calves should be treated to control internal and external parasites, and heifer calves should be Bang's-vaccinated. Both bulls and heifers should be PI-BVD-tested if that is part of your animal health management program. The first 30 days after weaning is the most critical period concerning problems with BRD in cattle. If calves are exposed to dusty lots, run a sprinkler or water wagon — it will more than pay for itself.

Pregnant cows. If late-term abortions

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have been a problem in the past, consider booster vaccinations for respiratory diseases and lepto at preg-check. Some producers may be only vaccinating at preg-check time; however, we prefer to vaccinate between calving and breeding and then revaccinate at preg-check for diseases that are a problem.

Spring-calving herds

The main focus is to prepare for the breeding season.

Sire selection. Sire selection is the most important management decision that is made each year in a purebred cattle operation. Be sure that you are using the best sires available that fit your genetic goals or objectives.

AI program. Semen should be on hand and a synchronization protocol should have been selected. In addition, all AI equipment and facilities should be ready for use. Don't overlook the importance of good heat detection and attention to details concerning semen handling. Breed yearling heifers from 2 weeks to 1 month prior to the mature cows; therefore, they have the extra time to recycle and rebreed as 2-year-old first-calf cows.

Mineral supplementation. Be sure that cows are receiving adequate levels of calcium, phosphorus and trace minerals that are deficient in your area. Minerals should be supplemented on a year-round basis, and the period from calving until conception is the most critical in terms of influencing reproductive performance.

Vaccinations. Cows and cleanup bulls should have been vaccinated at least 30 days prior to the start of the breeding period. This is also an excellent time to treat for internal and external parasites. We prefer to use a pour-on product at this time of the year as it also knocks down fly populations. If not already done, calves should receive their first round of vaccinations for the respiratory disease complex and the clostridial diseases.

Pinkeye. To help control pinkeye, consider mowing tall pasture grasses, reducing fly populations with sprays, dust bags or fly tags, and treating problems quickly so they do not spread within groups. Access to shade will help reduce the incidence of pinkeye. We prefer to treat pinkeye with a mixture of 90% penicillin and 10% dexamethasone and an eye patch. We inject approximately 2 cc under the membranes on the upper portion of the eyeball.

Treatment protocol. Treatment protocols and products should be on hand for scours and pneumonia in suckling calves. It is well-advised to have first and second treatment options for both conditions, and be sure that the protocols have been communicated to the appropriate personnel.

Midwest Region

*by **Justin Sexten**, University of Missouri, sextenj@missouri.edu*

Selecting trace mineral supplements for the cow herd

Last month's article discussed macromineral requirements; this month will focus on trace mineral requirements. The difference between macro- and trace mineral requirements is the amount required. Macrominerals are required in grams per day, while trace minerals are required in milligrams per day. There are many essential trace minerals; however, this article will focus on those most commonly supplemented — copper, zinc, manganese and selenium.

Copper is involved with reproduction and immune function. Copper deficiency is expressed as poor reproductive rates, reduced growth, weak calves and light hair color. Continental breeds such as Simmental, Charolais and Limousin have greater copper requirements than Angus.

Copper is antagonized by iron, molybdenum and sulfur. The presence of excessive antagonist minerals can greatly increase copper requirements due to reduced absorption. Under normal conditions copper supplied in a mineral labeled for 4 oz. of intake should contain 1,000 to 1,500 parts per million (ppm) copper to meet requirements.

Zinc and copper are often considered together because they are involved in reproduction and immune function; additionally, absorption occurs by similar pathways in the stomach and small intestine. Zinc deficiency is exhibited by reduced growth, lower feed intake and suboptimal reproduction, and, in severe cases, skin lesions. Unlike copper, zinc does not have a well-defined antagonist; however, during periods of stress, like many other minerals, zinc availability is impaired.

Mineral supplements should contain a copper-to-zinc ratio of 1:2 or 1:3 due to competition for absorption with copper. Under normal conditions, a 4-oz. mineral should contain 3,000-3,500 ppm zinc to provide adequate zinc to the gestating or lactating beef cow.

Manganese is required for normal reproduction and growth; however, forages generally contain adequate manganese assuming no antagonists within the forage. Manganese deficiency is observed as bone and joint problems in growing cattle with reduced reproductive rates more common in older cattle. High calcium and phosphorus can reduce manganese absorption. Under a balanced nutritional program, a 4-oz. mineral supplement should contain 2,000-3,000 ppm manganese to meet the cow's requirement in addition to forage.

Selenium is required to maintain healthy immune status in addition to normal growth. The most common deficiency symptom is white muscle disease in young animals. In older animals, reduced growth and poor immune response is a more common deficiency sign. Selenium requirements can vary with location, soil type and pasture composition. Much of the eastern and western United States has low to marginal soil and forage selenium while the central part of the country is adequate in selenium.

Mineral concentration in excess of requirements may not improve performance but can increase costs.

Selenium and vitamin E requirements are interrelated; low-vitamin E diets can increase selenium requirements. Selenium feed and mineral inclusion rates are limited by law to 3 mg per day due to the potential for selenium toxicity. A 4-oz. mineral supplement with 12-15 ppm selenium should meet the daily needs of a beef cow.

Iodine and cobalt are two other trace minerals required by beef cattle that are commonly provided in mineral supplements. Iodine is required to prevent goiter in calves and maintain reproduction in adults. Cobalt is used by rumen microbes to form vitamin B_{12} in cattle of all ages. While both trace minerals are required, the levels within mineral supplements are often not listed on the feed tag.

The most common deficiency observed in many operations is related more to failure to maintain a full mineral feeder rather than selecting the wrong mineral. The recommendations above are based on a consistent supply of a mineral with a 4-oz. labeled intake. When selecting or comparing mineral supplements, producers should first consider the labeled intake. The required mineral concentration will double in a 2-oz. mineral and be reduced by half in an 8-oz. mineral when compared to a 4-oz. mineral.

In the case of mineral supplements, more is not always better. Mineral concentration in excess of requirements may not improve performance but can increase costs. Balancing requirements and interactions with other trace and macrominerals can be challenging. This short review should provide a starting point to begin your discussion with a nutritionist and feed supplier to develop a trace mineral supplementation program to economically meet requirements while accounting for feed, forage and water mineral sources and their antagonisms.

Mid-South Atlantic Region

*by **Scott Greiner,** sgreiner@vt.edu; and **Mark McCann,** mark.mccann@vt.edu, both of Virginia Tech*

May signals the beginning of the forage harvest season. The impact of weather on forage production and harvest is typically the concern that predominates; however, other items warrant close attention.

Each ton of harvested forage removes about 50 lb. of nitrogen, 50 lb. of potash and 15 lb. of phosphate per acre. As a result, hay from unfertilized fields is effectively mining your soil resources.

Another common problem when applying fertilizer is not adding the correct proportion of each element. Fields fertilized repeatedly with 15-15-15 or 10-10-10 proportions likely need no additional phosphorus. Poultry litter and animal manures also supply more phosphorus than grasses can utilize.

Soil samples and test results are the only way to know the nutrient and pH status of your fields. Your local extension office should have soil probes and sampling instructions you can utilize. Using these results to match fertilizer application to soil needs will enhance both the productivity and quality of your forage crop, and be cost-effective.

Lastly, remember that forage testing at harvest is an excellent way to determine your success at making quality hay, and also provides the basis for making supplement decisions next winter.

Spring-calving herds (January-March)

General

- Calving season is winding down. Continue to observe late-calving cows frequently.
- Calving records should be complete and up-to-date.

Nutrition and forages

- Continue to offer a high-magnesium mineral to prevent grass tetany. Monitor intake to ensure cows are consuming the recommended amount. No other source of salt or minerals should be available.
- This is the time to put into place a rotational-grazing management system that will provide a rest period for pastures. During rapid growth move more quickly to the next paddock and leave some residue.
- Make plans to store your high-quality hay in the dry.
- Collect and submit forage samples for nutrient analysis.

Herd health

- Consult with your veterinarian concerning a prebreeding vaccination schedule for the cow herd, yearling heifers and bulls. Plan early to allow a 30-day vaccination window prior to breeding season.
- Plan a parasite- and fly-control program for the herd, and begin planning vaccination and preconditioning protocol to be used for the calf crop.

Reproduction

- Finalize plans and protocols for the breeding season. Establish calendar dates for successful timing of the synchronization program to be used during breeding season. Have supplies and semen on hand.
- Breed heifers two to four weeks ahead of mature cows to allow for a longer postpartum interval prior to the second breeding season.
- Schedule and conduct breeding soundness exams on herd sires, including annual vaccinations.
- Manage bulls properly during the breeding season. Observe bulls frequently to confirm breeding activity and soundness, and monitor cows for repeat estrus. Avoid commingling mature and young bulls, as older bulls will be dominant. As a rule of thumb, yearling bulls should be exposed to a number of cows equal to their age in months (i.e., 18-month-old bull with 18 cows).

Fall-calving herds (September-November)

General

- Schedule and conduct pregnancy diagnosis with your veterinarian following breeding season. Plan a marketing strategy for open cows. Cull-cow prices typically peak mid-spring through mid-summer, and prices are generally stronger for cows in good body condition vs. thin cows (evaluate forage availability and potential feed and management costs to increase BCS of cull cows, if warranted).
- Evaluate potential options for marketing of calf crop, including timing of weaning to meet operational goals. Calculate breakevens on various marketing options and consider risk-management strategies.
- Reimplant commercial calves.

Nutrition and forages

- As calves are weaned, move cows to poorer-quality pastures.
- Use palatable feeds during the weaning period to bunk-train calves and minimize weight loss.
- Reserve high-quality hay and a pasture area for calves postweaning.

Herd health

- Consult with veterinarian on vaccination protocol for calf crop. Design vaccination and weaning program around marketing goals and objectives.
- Plan parasite- and fly-control program for cows and calves.

Genetics

- Collect weaning weights on calf crop at optimum time (AHIR® age range 120-280 days), along with cow weights, hip heights and body condition scores (cow mature-size data should be taken within 45 days of calf weaning measure).