



# 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 syncytial 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 <sub>3</sub>	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

## Midwest Region

by **Twig Marston**, University of Nebraska, [tmarston2@unl.edu](mailto:tmarston2@unl.edu)

September is when forages mature rapidly, weaning becomes appropriate and weather dictates several key management decisions.

### Breeding season

Remove bulls after 60 days with cows or 45 days with heifers. Watch bulls closely. A 90-day breeding season should be long enough.

### Herd nutrition

- Provide ample amounts of clean, fresh drinking water.
- Consider limited-intake creep-feeding if:
  - drought conditions develop and persist;
  - range conditions limit milk production;
  - creep feed and/or grain prices are economical; or value of gain allows for economic benefits.
- Tips for successful limited-intake creep-feeding include:
  - limit duration to the last 30-75 days before weaning;
  - limit intake to less than 1% of body weight;
  - use an ionophore or other feed additive to maximize efficiency;
  - keep protein levels equal to or greater than 16%; and
  - watch high salt levels; salt may help limit intake, but it can be corrosive.
- Repurchase bulk-rate winter supplementation prior to seasonal price increases.

### Herd health

If pinkeye is likely to be a problem, consider the following measures.

### Preventive:

- Contact your herd health specialist/veterinarian for advice and counsel. Make sure the herd is receiving adequate dietary vitamins and trace minerals.
- Consider using a medicated trace-mineral package.
- Consider vaccination for pinkeye and IBR.
- Control face flies.
- Clip pastures with tall, coarse grasses that may irritate eyes.
- Provide ample shade.

### Therapeutic:

- Administer an IM injection of long-acting oxytetracycline when symptoms are first noticed.
- Shut out irritating sunlight by patching eyes, providing shade, etc.
- Control flies.
- Consult your veterinarian.
- Consider revaccinating any show animals for respiratory diseases.
- Vaccinate suckling calves for IBR, BVD, PI<sub>3</sub>, BRSV and possibly pasteurella at least three weeks prior to weaning.
- Revaccinate all calves for blackleg.
- Vaccinate replacement heifers for brucellosis at 4 to 10 months of age.
- Monitor and treat foot rot.

### Forage/pasture management

- Enhance grazing distribution by placing the mineral mixture away from water sources.
  - Observe pasture weed problems to aid in planning control methods for next spring.
  - Monitor grazing conditions and rotate pastures if possible and/or practical.
  - If pastures will run out in late summer, get ready to provide emergency feeds. Start supplemental feeding to extend grazing before pastures are gone.
  - Harvest and store forages properly. Minimize waste by reducing spoilage.
  - Collect samples of harvested forages and have them analyzed for nitrate and nutrient composition. (especially when drought or other stresses are present.)
  - Plan winter nutrition program through pasture and forage management.
  - For stocker cattle and replacement heifers, supplement maturing grasses with an acceptable degradable intake protein/ionophore (feed additive) supplement.

### Reproductive management

- Remove bulls to consolidate calving season.
- Preg-check and age pregnancies 60 days after the end of the breeding season.
- Consider culling cows that are short-bred.

These methods contribute to a more uniform calf crop, make winter nutritional management easier and increase the success rate of next year’s breeding season.

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## General management

- ▶ Avoid unnecessary heat stress. Don't handle and/or truck cattle during the heat of the day.
- ▶ Repair, replace and improve facilities needed for fall processing.
- ▶ Order supplies, vaccines, tags and other products needed at weaning time.
- ▶ Consider early weaning if:
  - drought conditions develop and persist;
  - range conditions limit milk production;
  - cows are losing body condition;
  - calf and cull cow prices indicate maximum profit; or
  - facilities and management are available to handle lightweight calves.
- ▶ Remember, first-calf heifers have the most to gain from early weaning.
- ▶ Resist the temptation to feed cows without weaning; feeding early-weaned calves is more efficient.
- ▶ Look for unsound cows that need to be culled from the herd.
- ▶ Prepare to have your calf crop weighed and analyzed through your state, regional or breed performance-testing program.
- ▶ Document cost of production by participating in SPA programs.
- ▶ Plan your marketing program, including private-treaty sales, consignment sales, test stations, production sales, etc.

## Southeastern Region

by **Lawton Stewart**, *University of Georgia*,  
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### Is a controlled breeding season worth it?

#### Part 2: Improving your nutritional plan

Last month's article focused on one of the most commonly discussed issues when converting to a controlled breeding season — the improvement in reproductive efficiency. However, many producers do not realize the other components of their operation that can benefit from the conversion. One of these includes improving a nutritional plan.

Nutrition is one of the largest costs associated with beef production, and if you can fully understand how nutrition and reproduction tie together, there is a large amount of money to be saved. The benefits of a controlled breeding season as it relates to a nutritional plan can be discussed in two concepts:

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1) understanding how the nutrient requirements of a brood cow change between calves and developing an efficient feeding strategy, and

2) how to employ management tools such as body condition scoring to improve conception rates.

**Understanding nutrient requirements.**

The nutrient requirements of a brood cow change considerably throughout a single calving interval (see Fig. 1). If a herd is on a continuous calving program, this makes it difficult to match nutrients available to nutrients required. Cows at all stages are likely pastured together and, therefore, receive the same feeding program. This can result in lactating females being underfed and/or dry cows being overfed. The usual pitfall lies in lactating females not receiving the energy and protein they need to cycle, thus stretching the calving interval past 365 days.

Within a controlled breeding program, all

cows have similar nutrient requirements at any given point in time. Therefore, nutrients supplied by forage and supplements are more efficiently matched to the stage of production. This is discussed in further detail in the Extension Bulletin article, “Cutting Costs not Corners: Managing cattle in tough times.” ([www.caes.uga.edu/publications/pubDetail.cfm?pk\\_id=7893](http://www.caes.uga.edu/publications/pubDetail.cfm?pk_id=7893)).

**Utilizing management tools.** Another benefit of a controlled breeding season is the ability to utilize management tools such as body condition scoring (BCS). The BCS system rates the energy reserve (fat) status of a cow on a 1-to-9 scale, with 1 being emaciated and 9 being obese.

The importance of BCS in reproduction is measuring the status of the cow to rebreed in a timely manner. To put this into perspective, females prioritize their nutrients in the following order: maintenance, then growth (heifers), then lactation and finally reproduction (cycling).

Therefore, a cow must take care of three major physiological stages before she will cycle. In other words, cows need enough

body condition to cycle. A summarization of herds scored at calving, breeding and weaning indicated 30% higher conception rates among cows with a BCS of 5 compared to those with a BCS of 4 (see Fig. 2). This suggests that all physiological requirements are met for cows to cycle as they improve from a BCS 4 to a BCS 5.

This may sound simple, but if you look at cows with these two scores, they are closer than you may think. From a nutritional standpoint, the best time to improve body condition is after weaning when nutrient requirements are lowest. However, in a continuous breeding season, it is difficult to manage underconditioned cows separately.

Under a controlled breeding season, these females can be fed as a group, separately at one time, directly after weaning.

As mentioned last month, converting to a controlled breeding season is much easier to discuss than to actually do. However, there are now two major concepts (reproduction and nutrition) discussed thus far that can pay off greatly in the long run. For more information about a controlled breeding season, please contact your local Extension office.

**Southern Great Plains**

by **David Lalman**, Oklahoma State University, [david.lalman@okstate.edu](mailto:david.lalman@okstate.edu)

**Hay feeding cost can be substantially reduced**

The Southern Great Plains was fortunate to have a tremendous wheat crop in 2012. From that crop, a lot of cool-season annual forage was harvested to help replenish the depleted hay supply.

However, after one of the driest months of May on record, dry conditions have persisted throughout much of the region. As a consequence, grass hay yields have been, once again, in the 50% to 75% range of long-term averages. Can you say déjà vu?

Certainly, pasture conditions are poor throughout much of the region, hay is very expensive and difficult to find, and feed prices are extremely high. Cattle operations are once again forced to liquidate animals or consider alternative feeding options. Like never before, producers should consider methods to improve efficiency of harvested forage use. Fortunately, a few relatively simple concepts are available that could make a dramatic impact. In fact, when combined, these strategies could cut the need for hay by at least one-third.

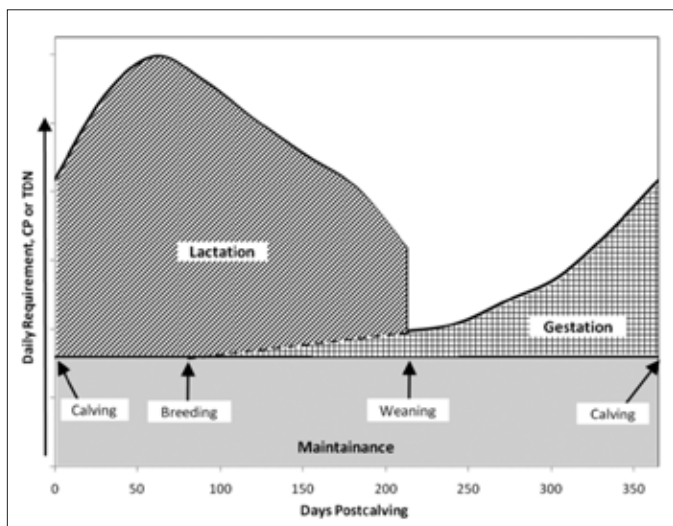
**Limiting hay intake**

Feedyards and backgrounding operations have taken advantage of improved efficiencies associated with limit-feeding growing cattle for many years. This strategy could be used to substantially reduce hay use in cow-calf operations, as well.

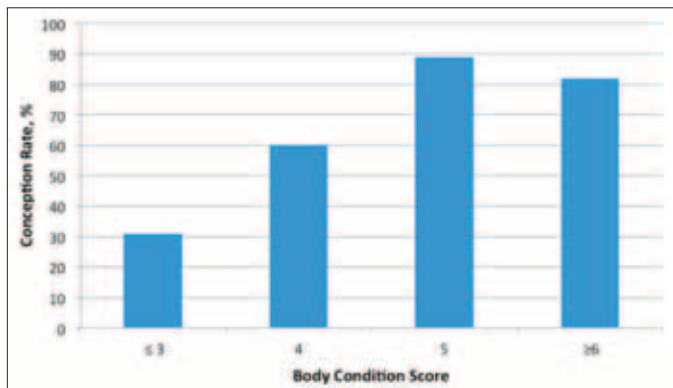
By limiting forage intake, forage digestibility should increase, and waste should go down. Minnesota and Illinois researchers limited the amount of time cows had access to hay. When cows were allowed access to hay for six hours, hay intake was reduced by an average of 22% over three experiments. Hay waste was reduced with restricted access in two of the three experiments, and cow weight gain declined with restricted access in all three experiments.

Cows with restricted access gained weight in all three of the experiments, even though they did not gain as much as cows with *ad*

**Fig. 1: Daily crude protein (CP) and total digestible nutrient (TDN) requirements throughout a 365-day calving interval.**



**Fig. 2: Summary of conception rates of cattle scored for body condition at calving, breeding and weaning (Kunkle et al., 1998).**



*libitum* access. This suggests that initial cow body condition and hay quality may be important factors in successful implementation of this strategy. For example, if cows are in poor body condition initially, or if hay quality is extremely low, cow performance, newborn calf health and reproductive efficiency could be compromised.

Estimating *ad libitum* intake and determining the degree of restriction below *ad libitum* intake are critical factors in using the limit-feeding strategy. The National

Research Council (NRC) publishes equations to estimate forage intake, and these equations are incorporated into many cow-calf nutrition evaluation software programs. For example, Oklahoma State University (OSU) Cowculator uses cow size, stage of production, milk yield and forage quality to estimate dry-matter intake. Cowculator (and many other nutrition evaluation programs) can also be used to estimate performance of cows with varying degrees of hay restriction. Cowculator is available at [www.beefextension.com](http://www.beefextension.com).

Limit-feeding is not recommended for first-calf heifers or thin, older cows.

### Using hay feeders designed to limit hay waste

Our group at OSU recently studied the effects of hay-feeder design on hay waste. Two feeders with open bottoms and two feeders with sheeted bottoms were evaluated (Fig. 3). The open-bottom feeders wasted an average of 21% of the original bale weight. These two feeders are lightweight, convenient

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## Western Region

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### Fall-calving herds

The main focus is the calving season.

### Genetic management

**Sire selection.** Although the breeding season is still months away, now is the time to start developing a list of potential AI sires.

### Reproductive management

**Calving management.** Supplies should be on hand and proper equipment should be available to assist females with problems at calving. Be sure that your personnel are properly trained in the most current procedures recommended for assisting females that are experiencing calving difficulties. As calves are tagged and weighed at birth, their navel stumps should be dipped or sprayed with a mild iodine or betadine product. In addition, if you are in a selenium-deficient area, they should receive a selenium injection at birth.

In order for maximal absorption of maternal antibodies, calves should nurse within the first six hours after birth. A supply of frozen colostrum should be on hand and should be replaced at the start of each calving season. The best source is a mature, heavy-milking cow that calves early in the calving season. She should be milked out shortly after her own calf nurses. 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 one-half of a calf bottle) prior to freezing. In addition, be certain that females are being monitored for the incidence of retained placenta. If problems arise, treat them promptly.

### Nutritional management

**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 can be varied depending on the time of the year and available forage resources. Mineral boluses or injectable products can be used in addition to loose or block mineral products.

**Body condition.** The target level of body condition at calving is a BCS of 5 (scale = 1 to 9) for mature cows and BCS 6 for 2-year-old heifers. Ideally, this level of body condition should be maintained during the breeding season. However, this is difficult to achieve, especially with cows that have extremely high levels of milk production.

**Protein and energy supplementation.** Both protein and energy requirements need to be met in order to achieve the desired level of body condition. 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 poor in terms of quality, then protein will be the most limiting nutrient. If the availability of forage is the problem, then energy will be the most limiting nutrient.

### Health management

**Treatment protocol.** 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. It is well-advised to have first- and second-treatment options for both conditions, and be sure the protocols have been communicated to the appropriate personnel.

### Spring-calving herds

The main focus is to prepare for weaning.

### Reproductive management

**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 recur.

### Nutritional management

**Supplementation.** In terms of protein and energy supplementation, usually spring-calving cows can perform adequately without supplementation at this time of year as long as forage is available.

**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 exhibited. 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.

### Health management

**Weaned calves.** Calves should be administered preweaning vaccinations for the respiratory disease complex at least two to three weeks prior to weaning. After weaning, they 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. Consider pasture weaning if you have the facilities to accommodate this management technique. Minimal electric fencing can be used quite successfully, and I am confident that you will see major reductions in the incidence and severity of respiratory disease associated with weaning.

### General management

**Marketing program.** Marketing ability is one of the key factors that determine economic performance in a purebred cattle operation. As times become more challenging, a sound and creative marketing program becomes even more important. Many people simply reduce the amount of advertising as times become more challenging. However, creative and well-placed advertising is now more important than ever.



to use and inexpensive. Consequently, they are the most popular feeder style being used in the state of Oklahoma.

The sheeted (solid)-bottom feeder reduced hay waste to 13%. However, a modified cone feeder with a sheeted bottom reduced hay waste to only 5%. The feeders with sheeted bottoms are both heavier and more expensive than the open-bottom feeders. Nevertheless, assuming hay valued at only \$120 per ton and a 120-day feeding period, the difference in the value of one feeding season's hay waste between the open-bottom steel ring feeder and the modified cone feeder is \$468.72. Few cow-calf operations will be able to absorb the cost of 21% hay waste when hay is extremely valuable.

### Using an ionophore

The use of an ionophore for grazing cattle and cattle consuming hay can increase the energy value of a forage diet and thus further reduce the need for hay. Older research has shown that Rumensin® and Bovatec® improve weight gain of growing cattle. Rumensin is approved for use in mature beef cows. Older research showed that Rumensin reduced hay intake by around 10% while still producing about the same amount of weight gain (Turner et al., 1980; Clanton et al., 1981).

In a recent study in our shop at OSU, cows

fed 200 mg of Rumensin gained an additional 0.5 lb. per head per day and nearly one-half a body condition score unit more during a 58-day study. Importantly in this project, the forage digestibility was improved dramatically, resulting in the improved cow performance.

One could look at the addition of Rumensin in the supplement as having increased the net energy value of this low-quality hay diet by about 15%. In other words, less of the same diet (hay) would need to be fed to get the same performance. In our region, the cost of Rumensin is about 2¢ per cow per day. I don't know any other way to get that much improvement in forage utilization at such a low cost.

There is a reason why the cattle-feeding industry has been using this feed technology so extensively for so long, and a substantial improvement in feed efficiency is that reason. The same technology and benefits are available to the cow-calf industry, although it is highly underutilized.

Research is not available evaluating the potential hay savings when two or more of these technologies are combined. Nevertheless, it is very possible that hay use could be reduced by 30% to 40% when two or all three of these strategies are implemented.



**Fig. 3: Round bale feeder types evaluated by OSU include: (a) modified cone feeder with sheeted bottom; (b) conventional open-bottom steel ring feeder; (c) polyethylene pipe open-bottom ring feeder; and (d) sheeted-bottom steel ring feeder.**

