PURINA Checkpoint®
Management & Nutrition Tips For Beef Producers

Sustained Nutrition:
More Calves, Healthy Calves, Potentially Lower Feed Costs

It may sound too good to be true, but, research is now validating the hypothesis that sustained nutrition results in healthy cows, more calves—and bigger calves—all at a potentially lower feed cost. That's good news for calves, cows and producers.

But, what exactly is sustained nutrition, and why is it so effective?

The term "sustained nutrition" describes the practice of providing complete nutrition to maintain cow body condition year round.

"It's commonly accepted that cows with a body condition score (BCS) of less than 5 are too thin for optimal production," observed Chance Farmer, PhD, beef consultant for Land O' Lakes Purina, LLC. "To optimize production, we want to maintain a BCS of 5-6. If you do that, you are achieving sustained nutrition."

BCS AT CALVING

Research over the past 20 years has confirmed that cows with a BCS of 6 at calving will come into heat sooner and breed quicker than those with lower BCS scores, Farmer said. That's because in the animal's biological survival hierarchy, the ability to cycle is of relatively low priority, he explained. Of higher priority are growth, energy reserves, established pregnancy maintenance and lactation.

More milk, healthier calves. Cows with a BCS of 6 at calving will also sustain peak milk production longer and produce more milk per day, according to Farmer. That results in higher calf weaning weights. In addition, their calves stand quicker, enabling them to receive "first milk" colostrum, with its disease-fighting immunoglobins, sooner. And, last but not least, cows fed to meet their nutrient requirements versus those restricted were found to have 12 percent more calves weaned per cows exposed. [1]

BCS DURING PREGNANCY

Traditionally, maintaining cow condition was considered important mainly for the cow herself—and primarily during the last trimester of pregnancy. In fact, cows were often allowed to lose weight and condition during pregnancy.

However, recent research from the Nebraska Sandhills is providing additional proof of the importance of cow nutrition and body condition—this time on the unborn calf—and throughout pregnancy. Studies conducted in 2006 and 2007 show the effect of what is called "fetal programming."

"Fetal programming is the process by which live calf performance is influenced by how mothers are cared for during pregnancy," Farmer stated. In those studies, "optimal maternal care resulted in increased percentage of calves weaned and higher weaning weights. It also improved the pregnancy rates of offspring replacement heifers an impressive 80 to 93 percent," he added.[3, 4]

Other benefits to the offspring of cows with sustained nutrition during pregnancy include:

- Fewer steer calves treated
- Increased hot carcass weights
- Improved marbling [2]

But how do producers maintain consistent body condition scores, especially when forage quality declines?

HOW SUPPLEMENTATION CAN HELP

Certainly proper forage management is crucial, but supplementation is often required to assure that nutritional requirements are met all year long. Land O' Lakes Purina Feed has been working over the past 12 years to develop products that meet this need economically. The Accuration® line of products, for example, complements any forage and feed program by providing easy-to-administer, year-round supple-

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mentary nutrients that actually reduce feed costs, Farmer explained. The key to their effectiveness and cost-efficiency is Purina's Intake Modifying Technology®, according to Farmer.

IM Technology modifies eating behavior, causing cattle to consume small amounts more frequently, thus enhancing digestion and delivering maximum utilization of nutrients. Because the animal consumes only the amount needed, feed costs are lower.

"To be efficient, supplement consumption must fluctuate according to forage quality and the cow's requirement," Farmer said. "With IM Technology® the cows get supplements when THEY need them, not when we think they do."

Plus, because the product is self-fed, it "takes the guesswork out of supplementation" and reduces the chance of missing an animal's need for additional nutrients.

"If you hand-feed cubes, for instance, and you don't stay on top of it, cows are going to lose weight before you pull the trigger," Farmer explained. "So, you end up with weight and BCS loss, lower pregnancy rates and longer post-partum intervals."

For more information about sustained nutrition and the products that can help you achieve it, talk to your local Purina dealer or representative.

[1] *Sustained Nutrition for Lifetime Performance, Land O' Lakes Purina Feed white paper.*

[2] *Ibid.*

[3] *Stalker, L.A., D. C. Adams, T. J. Klopfenstein, D. M. Feuz, and R. N. Funston. 2006. Effects of pre- and postpartum nutrition on reproduction in spring calving cows and calf feedlot performance. J. Anim. Sci. 84:2582-2589.*

[4] *Martin, J. L., K. A. Vonnahme, D. C. Adams, G. P. Lardy, and R. N. Funston. 2007. Effects of dam nutrition on growth and reproductive performance of heifer calves. J. Anim. Sci. 85:841-847.*

Extend the Life of Your Pastures Through Analysis, Rotation, Supplementation

Spring has sprung. The pastures are green and growing rapidly. But, in just a short while, that growth will decline, and you'll be looking for ways to make those grasses produce for just a little longer.

According to Keith Johnson, professor of agronomy at Purdue University, the first step in getting the most from your pasture forage is to take a close look at soil fertility.

"I encourage those who have not had a soil test of the pasture and hay land in the past several years to do so," Johnson said. "That way, they can get recommendations and products that are based on the actual condition of their soil, rather than just using a blended 'one-size-fits-all' fertilizer."

He elaborated that soil pH, as well as potassium and phosphorus levels, often need to be amended, but conditions vary widely according to geographic region. And, this information should be gathered—and acted on—a season in advance. Then, when you overseed a pasture with legumes, for example, soil fertility levels will support plant growth. The timing of nutrients is also crucial.

"Potassium deficiencies, for instance, don't show up in early to mid-spring," Johnson explained. "So application of potassium shouldn't occur in March or April, but in late spring to summer. Lime and phosphorus applications are more independent of the calendar."

Nitrogen should be applied several times on grass pastures, rather than applying the entire recommended load at once, Johnson added. This will support plant growth through inconsistent weather patterns.

Overgrazing can also take its toll on forage. In fact, Johnson says that's one reason pastures transition to lower-yielding forage such as Kentucky bluegrass and white clover—because they can tolerate overgrazing. To retain a mix of forage in the pasture, Johnson recommends striving for 8-10 inches of forage height before grazing begins.

"Once it gets down to 4 inches, it's time to move to another paddock," Johnson said. "Rotation allows the forage plant to rest and recover from grazing. There's a tendency in dry weather to push and graze a few extra days, but that can have negative consequences, killing off the less persistent high-yield plants and overpopulating pastures with lower-yield species and weeds."

He recommends regular evaluation of pastures through the course of the season to keep forage healthy and balanced. For cow-calf operations, about 30 percent of dry matter should be legume, he said, though some say 20 percent is adequate, if uniformly available. Another rule of thumb is approximately two legume plants per square foot. This can be evaluated in the autumn to determine if overseeding will be needed in late winter/early spring. In addition to providing the cattle with nutrients, legumes generate nitrogen, which encourages grass growth.

In the warm months, pastures should be evaluated by weekly scouting for plant diseases, insects and weeds. Johnson suggests documenting the location and types of weeds, noting that some are grazable without consequences; others have refusal—or even poisonous—properties.

If weeds are of concern, begin looking at herbicides, balancing control with consequences, Johnson recommended. For instance, some herbicides will kill legumes; others have grazing restrictions that must be observed. So while herbicides have their place, Johnson says a "productive stand of forage is the best way to keep weeds in check." And, that's accomplished by managing soil fertility and pasture usage.

"Broomsedge, for example, is an indicator of low phosphorus and/or low pH in the soil," Johnson explained. "Instead of using an herbicide, simply add lime and phosphorus. Miraculously in 2-3 years, the broomsedge is no longer a problem. Plants are like people," Johnson stated. "They need to eat well and get rest, too. If not, the plants become unproductive and can die."

In addition to managing pastures effectively, supplementation can help assure that your herd is getting all the nutrients it needs during summer months when forage quality diminishes. Purina provides energy, protein and mineral supplements with Intake Modifying Technology®, which uses well-researched ingredients and nutrients to control intake—and optimize digestion—by causing cattle to consume smaller portions, multiple times a day. Talk to your Purina dealer or representative about this unique approach to assure your cattle are getting the nutrients they need—and at the least possible cost to you.

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Snack Chips: Key Ingredients in Herr Angus Farm's Recipe for Success

Potato chips and cattle. It doesn't seem like a logical pairing. But for Herr Angus Farm in Nottingham, Pa, it's become a winning combination.

That's because the farm's owner, Herr's Foods, Inc., produces more than 340 snack foods, including potato chips, pretzels, tortilla chips, cheese curls, popcorn, crackers, nuts, and onion rings.

And since 1984, they've also raised Angus cattle on 1,200 acres adjacent to their main processing plant. They bring value to both operations by incorporating potato peelings and rejected snack food products into the cattle rations and by irrigating cropland with wastewater from the snack food plant.

It's the kind of creative synergy that extends into almost every aspect of the operation. As a result, Farm Manager Dennis Byrne has become adept at juggling many varied tasks.

Not only is he responsible for the health, nutrition and genetics of the 160-head registered and commercial Angus operation, he also oversees 400 acres of crop land. A portion of the wheat, soybeans, corn and barley raised there is incorporated into the herd ration; the remainder is sold.

And, of course, there is pasture to maintain—300 acres to be exact—as well as approximately 500 acres of wildlife and conservation lands.

"We have woodlands, lowlands and wetlands we own and maintain that allow wildlife to multiply and have natural habitat," Dennis explained. "We work with the state on a conservation plan for all our acreage so that we can enhance the surface and groundwater. We're in the Chesapeake Bay watershed, so it's important to keep surface water and well water clean and avoid the leaching of nutrients."

And, in case all that isn't enough to keep him busy, Dennis manages a feedlot operation for their own herd, as well as for other herds they serve. In total, they run approximately 1,400 head through their feedlot each year, achieving an average daily gain of 3-3.25 pounds per head per day. In addition, they run a cow-calf operation. In all these tasks, Dennis is assisted by two full-time and three half-time employees.

Before joining Herr Angus Farm 27 years ago, he was involved in bovine reproduction, embryo transfers and artificial insemination with the University of Pennsylvania veterinary school. A self-professed beef lover, Dennis says he's always been passionate about Angus cattle.

"I didn't come from a farm family, but my dad used to love to cook, and he always cooked Angus, so there wasn't any doubt in my mind that I would raise Angus," he said.

In fact, Dennis and his wife of 40 years, Dottie, brought 40 of their own Angus cattle with them when they joined Herr's in 1988.

To ensure quality genetics, Dennis said they buy top performance Angus bulls and use both embryo transfer and artificial insemination. And, he works closely with agronomists and nutritionists to make sure they are getting the best crop for feed, and the best balanced rations.

"We want to deliver the finest beef possible, as well as the best functional animals to return to the herd," Dennis offered. "Using great feeds is crucial, especially during transition times, like weaning. If you can get calves through that well, they will go through the rest of their lives well, too."

Dennis said his affinity for Purina products became even stronger after trips to Purina's Longview Research Farm near St. Louis.

"I was impressed with the research that goes into the rations," he said. "Even the way certain grains are processed can make a big difference in the way cattle perform. I also learned a lot about body condition, especially during the winter months."

Dennis said he was already using Purina® weaning products, but when he returned from the research farm, he started using Sup-R-Block® supplements, which are high protein balanced with energy. "That helps us get more nutrition out of winter hay and grass," he explained.

"We also group our cows according to body condition now. Heavier cows are sorted off from the lighter and younger cattle. That allows us to use the better quality hay where needed and save money in the long run. Live births, breed backs and weaning weights have all gone up since we adopted the body score principles."

Show Chow® Feed was another product that Dennis adopted. "We found that cattle on Purina feed eat really well and keep that bloom when we go on the road," he said. "They look really good in the show ring."

Dennis was quick to note that the Drennen family of Oxford Feed and Lumber have been outstanding to work with, providing him and his customers with "tons of information and finding answers to any questions about cattle performance or product use. They get an A+ on service."

All this helps Dennis do what he loves most: being outside doing something different every day, checking on the herd, and most of all watching those calves being born.

"To see a mother cow lay down and have a baby on her own and have a tall, lean healthy calf up and nursing in 20 minutes … well, I never get tired of that. It's God's work at its best."

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Arm Your Herd Now for the Onslaught of Summer Pests

One important element in keeping cattle healthy—and profitable—is proactive insect control. With hot weather just around the corner, it's not too early to start planning for those pesky visitors.

Smaller than house flies, **horn flies** can cause big losses—as much as 20 pounds of per calf, according to Lee Townsend, extension entomologist at the University of Kentucky. That's because they suck the cow's blood night and day to stay alive.

Face flies are annoying, to be sure, but even heavy infestations have not been proven to affect weight, Townsend said. However, they can wreak havoc by spreading pinkeye within the herd.

A number of techniques can be used to control flies, Townsend said.

Dust bags are most effective when cattle must pass under them daily. Keep the bags dry and charged; avoid pyrethroids if resistance is suspected.

Back rubbers should be positioned at entryways. Tie 18-inch strips of cloth at 4-6 inch intervals along the length, according to Townsend. Mix insecticide with good grade mineral oil, NOT diesel or motor oil. Saturate weekly for best effect on horn flies.

Walk-through fly traps at pasture gates where animals must pass through several times a day can reduce horn flies by up to 70 percent, Townsend explained. The traps brush flies off and ensnare them between the slats and screen of the trap. Deprived of their hosts' blood, horn flies soon die.

Insecticide ear tags can help control horn flies, but resistance to synthetic pyrethroids is an increasing problem, according to Townsend. Apply tags in the spring and remove in the fall. Rotate types of insecticides used. Always check product labels for restrictions on calves under three months old.

Feed additives that inhibit the reproduction of fly larvae, especially horn flies, can be added to regularly ingested supplements. Purina's Wind and Rain® Fly Control Mineral blocks incorporate Altosid® (S-Methoprene), the gold standard for feed-through horn fly control. The blocks also utilize IM Technology®, which regulates consumption, assuring appropriate intake levels.

Sanitation, Townsend said, is the key to reducing fly populations around barns and confined areas where manure, straw and decaying feed create attractive breeding conditions. Keep areas well-drained. Spread manure or cover with black plastic. Use sawdust instead of straw as bedding.

Residual fly sprays can be used on walls, ceilings, posts and other fly resting sites in confined areas. Rotate insecticide "classes," and always follow label instructions.

Lice usually cause more problems in winter when the herd's hair coat thickens. To virtually eliminate the skin irritation and reduced appetite that lice can cause, Townsend recommends treating all animals in the herd with approved pour-on, spot-on or spray products. Repeat the procedure in 14-21 days; treat new animals before commingling.

Cattle grub treatment must be timed correctly to maximize effect and minimize risk, says Townsend. Apply systemic pour-on, spot-on, injection or spray insecticides as soon as heel fly activity ceases.