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# IT ALL STARTS WITH GRASS:
## HOW HIGH-QUALITY GRAZING SUPPORTS A HEALTHY, PRODUCTIVE HERD

Range & Pasture™

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## ABOUT THE AUTHOR

**Jeff Clark** is a Range & Pasture market development specialist with Corteva Agriscience. Clark's focus is on improved pasture management, herd health and feed. Raised on a Texas ranch, he applies lifelong knowledge to the cow-calf operation he currently manages with his wife Angie, a veterinarian, near Alderson, West Virginia.

# HEALTHY PASTURES, HEALTHY HERD

In beef production, sound pasture management is just as important as a good vaccine protocol or feed and mineral program, yet it is often overlooked. Providing abundant, high-quality grazing influences productivity in ways both obvious and subtle.

Among the most evident is dollars and cents. Profitability for the cow-calf producer hinges on number of calves sold, the price those calves bring at market and what it cost to get there. Each of those three factors fluctuates from year to year. One constant, however, is how the grazing resource impacts those variables. At the most basic level, consider:

- **Pounds of beef sold**
  An adequate, high-quality forage base helps keep breeding stock in condition, which improves conception, increases milk production and boosts daily gains.

- **Price of calves sold**
  Properly conditioned cows breed back quicker, and tighter calving windows produce more uniform groups of calves that often command a premium at market.

- **Cost containment**
  Feed costs account for more than 60% of a cow's annual maintenance. Grazed forages are the lowest-cost way to feed a cow. Abundant, high-quality grazing produces cost-efficient gains — for cows and calves. Top-performing cows and calves have fewer health issues and smaller veterinarian bills.

Implementing pasture improvement practices, such as grazing management, broadleaf weed control and proper fertility can significantly increase forage quantity and quality and improve pasture utilization.

# YOU CAN'T STARVE A COW INTO THE PROFIT COLUMN

Herd reproductive performance starts with cow body condition. Thin cows lose more calves and can take a long time to get back into good breeding condition. In fact, cows with a body condition score (BCS) below 5 can require an additional 60 to 90 days to cycle back before breeding. And even then, they likely achieve only a 75% or less conception rate. Overconditioned (fat) cows tend to have more calving problems and produce less milk. Plus, feeding cows to excess condition is economically impractical. A poorly conditioned cow can cause deeper problems than producers may realize, problems that impact the health of its offspring.

**Poorly conditioned cow** → **Lower-quality colostrum** → **Decreased passive immunity** → **Weaker immune system** → **Increased health issues** → **Increased death loss** → **Reduced vigor and performance**

Spread those costs and poor gains from these mini-wrecks over the herd population, and the numbers start heading in the wrong direction. For example, a calf with weakened immunity is more susceptible to respiratory or gastrointestinal diseases. Damaged lungs or a scarred digestive tract may follow a baby calf through weaning and into the feedlot.

It's important to analyze cow BCS early and often. If cows are losing ground, adjust feeding accordingly. A poorly conditioned cow affects the cow-calf enterprise through lower conception rates and weaning weights and initiates decline.

Ample high-quality grazing, on the other hand, cost-effectively helps keep cows and replacement heifers fit so they can birth and mother stronger, more vigorous calves.

### Value of short breeding/calving seasons

- *Concentrates time and labor*
- *Produces more-uniform calf crop for better marketing opportunities*
- *Helps ID late-breeding cows for culls*

*Note: Thin cows may take more than one season to return to adequate body condition.*

# KEEP BREED-BACK ON TRACK

It is helpful to understand how a beef cow partitions her nutritional needs. This nutritional hierarchy shows why body condition is so critical.

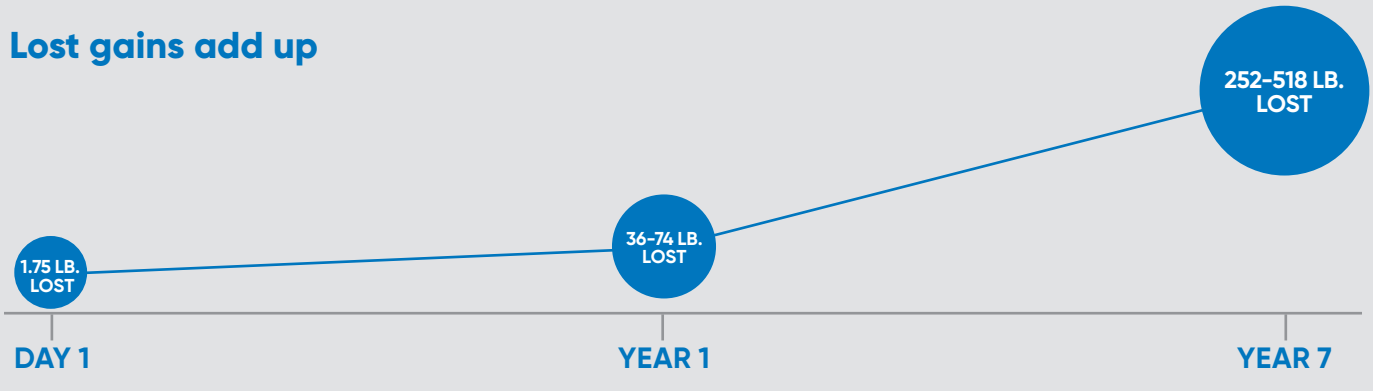

**Takeaway:** Reproduction is first to suffer and the last to return when nutrition is short.

Breeding condition can enhance herd performance in subtle ways. For example, consider how first-service conception rates can improve weaning weights. Ideally, a cow conceives during the first estrus cycle of the breeding season and produces a calf every 365 days. If that cow, due to lower body condition, breeds during the second or third cycle, the calf loses 21 to 42 days at the mother's side.

Assuming 1.75 pounds average daily gain, the loss is 36 to 74 pounds of gain in the first year. **Over a seven-year period, the results compound into a 252- to 518-pound loss** over the productive life of the cow. Now spread that loss over half


a herd, and what might otherwise be barely noticed becomes significant. While several factors influence a cow's ability to breed back on time, body condition plays a fundamental role.

## Lost gains add up



# BETTER PASTURES SUPPORT SOUND MANAGEMENT

To optimize herd performance and, ultimately, beef production, it's important to prioritize pasture management. For starters, consider how overgrazing can impact herd health. Grazing too close to the ground provides a pathway for parasites to the host animal. A take-half, leave-half approach to grazing management is better for your cattle and for the land. Remember: Do a good job with your grass and you'll likely bring more cows off pasture with heavier, healthier calves at their side.

Extension beef specialists across the country recommend several management practices to increase reproductive performance and herd efficiency. The table below summarizes several of these advisories with input from the Range & Pasture experts at Corteva Agriscience who outline how pasture improvement may enhance these management routines.

**RECOMMENDED HERD-HEALTH PRACTICES IN THE CONTEXT OF PASTURE MANAGEMENT**

| Practices | University Extension Advisories | Ways Pasture Supports These Practices |
|---|---|---|
| RECORDS | Beneficial for pairing up, treating sickness, culling and selection decisions. Foundation of records on pregnancy rates, length of calving season, culling rates and calf mortality. | Control of dense brush helps improve monitoring of cattle. When cattle get lost in dense brush, they are harder to identify, round up and work. |
| NUTRITION | Nutrition has a major impact on reproductive performance. Energy, protein, minerals and vitamins must meet varying nutrient demands in the herd. Cow nutrition directly influences calf health and growth. | Usable forage replaces weeds controlled pound for pound — at least. More grass elevates the energy and protein available to grazing cattle. This helps cows meet their own nutritional needs and that of their calves. |
| BODY CONDITION | Body condition is closely linked to reproductive performance, both in terms of breed back and calf vigor. Texas and Oklahoma research has shown that cows with a body condition score (BCS) of 4 at calving have a 15% to 25% lower rate of pregnancy. Cows should have a BCS of 5 to 6. | Weed control improves summer grazing. For spring calvers, this helps cows maintain condition during lactation and put on cheaper weight after weaning. Better summer grazing helps fall calvers, too, through efficient cow maintenance and supporting the developing calf she's carrying. |
| HEIFERS | Use proper selection, feeding and breeding. Select older, sound, thrifty heifers as replacements. Feed adequately for 1 to 1.5 pounds of gain per day after weaning. Start breeding two to three weeks before cows so heifers have more time to cycle and rebreed for their second calf. Feed to gain 1 pound per day during the last trimester. | Weed and brush control provides more forage during summer months. This increases available energy and protein, which can help increase weaning weights. Weed control and fertilizer also can enhance tame grass pastures. Mixing herbicide with liquid fertilizer or impregnation on dry fertilizer (in states where labeled) also can boost crude protein levels in tame (introduced) grasses. |
| BREEDING SEASON | A short calving season concentrates time and labor spent on this critical task. It also tends to produce a more uniform calf crop, leading to better marketing capabilities and potentially higher prices. A shorter breeding season helps to identify late-breeding cows for culls. Match requirements with the greatest forage supply. | Ample forage is at the foundation of cow nutritional status. Thin cows may take more than one season to return to adequate body condition. Weed control and pasture management to maximize cow maintenance lowers feed costs and supports reproductive performance. |
| CROSSBREEDING | Crossbreeding results in 4% higher calving rates, 3% greater calf survival and 10% higher weaning weights. Crossbred cows have 30% greater lifetime production than purebred cows. | An adequate nutritional plane enhances the ability of calves to gain and cows to stay on grass longer. As a calf's rumen develops, it also will benefit from increased grazing. |
| BULLS | The bull influences calving percentage, growth rate and calf quality. Examine for breeding soundness, vaccinate 30 days before breeding and monitor servicing in the early breeding season. Run 25 to 35 cows per mature bull and 15 to 20 cows per yearling bull, depending on pasture size, terrain and performance history. | Enhanced grazing will help bulls more cost-efficiently maintain body condition. Weed control can improve carrying capacity in pastures. |
| CHECK PREGNANCY | At weaning, check cows for pregnancy and soundness. Cull as needed. Develop a marketing plan for culled cows. For example, consider feeding spring-calving culled cows over winter to obtain pricing advantages. | Adequate nutritional plane might lengthen the cow's useful breeding life. An underfed cow directly reduces pregnancy rates. The weaning weight of her calf is reduced. Her delayed return to estrus affects the following calf crop. |
| PREVENT DISEASES | Develop a complete herd-health management program with the assistance of a veterinarian. Design a complete vaccination program. Diagnose all abortions, when possible, to prevent further losses. | Nutritional status is critical in immune response after vaccinations. Young calves that grow and develop normally might have stronger immunity during backgrounding, growing and finishing phases. |
| CALVING CARE | Calving difficulty (dystocia) is the most common cause of dead calves — 5% to 10% of all calves die soon after birth. Selection of sires for low birth weights, pelvic exams for heifers, and proper training and assistance at birth will reduce death losses. | Dystocia has been closely linked in many cases to poor body condition. Improved grazing can cut the cost of cow and heifer maintenance. A cow's nutritional priorities are maintenance, lactation, growth (young females) and reproduction. Reproduction is the first to suffer and the last to return when nutrition is short. Heifers should have a BCS of 6 at calving. |

# LOWER YOUR BREAKEVEN

A higher calving rate lowers your breakeven. In the example below, weaning 10% more 500-pound calves drops your breakeven by 3 to 11 cents, depending on cow expenses. This points to the importance of cow maintenance costs in any breakeven analysis. The less spent, the better the result. Ample high-quality grazing can help contain feed costs, support cow body condition and improve calf gains.

**BREAKEVEN PRICES PER POUND OF CALF AT 12 PRODUCTION LEVELS AND 4 ANNUAL CASH COSTS PER COW**

| Calf crop percent/ average market weight | Pounds of calf per cow[1] | Annual cash costs per cow[2] | | | |
|---|---|---|---|---|---|
| | | $100 | $200 | $300 | $400 |
| 90/600 | 540 | $0.19 | $0.37 | $0.56 | $0.74 |
| 90/500 | 450 | $0.22 | $0.44 | $0.66 | $0.89 |
| 90/400 | 360 | $0.28 | $0.56 | $0.83 | $1.11 |
| 90/300 | 270 | $0.37 | $0.74 | $1.11 | $1.48 |
| | | | | | |
| 80/600 | 480 | $0.21 | $0.42 | $0.63 | $0.83 |
| 80/500 | 400 | $0.25 | $0.50 | $0.75 | $1.00 |
| 80/400 | 320 | $0.31 | $0.63 | $0.94 | $1.25 |
| 80/300 | 240 | $0.42 | $0.83 | $1.25 | $1.67 |
| | | | | | |
| 70/600 | 420 | $0.24 | $0.48 | $0.71 | $0.95 |
| 70/500 | 350 | $0.29 | $0.57 | $0.86 | $1.14 |
| 70/400 | 280 | $0.36 | $0.71 | $1.07 | $1.43 |
| 70/300 | 210 | $0.48 | $0.95 | $1.43 | $1.90 |

*Source: Texas A&M AgriLife Extension*

***Sprott, L.R.** Break-even Costs for Cow/Calf Producers. https://animalscience.tamu.edu/wp-content/uploads/sites/14/2012/04/beef-breakeven-costs-for-cow-calf-producers.pdf*

[1] Based on exposed cows

[2] Adjusted for value of culls

# GOOD FOR THE CALF, TOO

Providing quality grazing from the start can help your calves get ahead, too. According to University of Georgia Extension, a lactating beef cow can supply only 50% of the nutrients a 3- to 4-month-old calf needs to maximize growth. Depending on availability and quality, forage may not be able to supply the other 50% of nutrients the calf needs — especially when grazing late-summer or drought-stricken pastures. Thus, the more nutritious, abundant grazing you provide up through weaning, the faster, more efficiently calves gain with less reliance on more expensive supplemental feeding.

Weed control, soil fertility and grazing management are among the factors that heavily impact forage production and quality.

Consider pasture weed control, for example. Studies show that for every pound of weeds removed, you gain a pound — or more — of usable forage. That extra grass gives you flexibility. For example, you might keep cows longer on pasture, where they can harvest more forage themselves — resulting in less need for hay.

Pasture management, feed costs, cow body condition, conception rates and weaning weights are factors that influence your production volume, thus impacting profits. As the market continues to adopt new ways to reward finishing performance, these and other factors will be even more important. There always will be a market for poorer calves. But it will likely be a drastically discounted market, certainly not a profitable one where cattle producers can exist for very long.

# RAISE THE NUTRITIONAL PLANE OF YOUR PASTURES

To get the most out of grazing land, cattle producers will intensify their management with the goal of producing more low-cost pounds of gain. A good grazing management program, while just as important as your herd-health plan or genetics program, often gets short shrift.

Effective weed and brush control plays a critical role, too. Grass replaces weeds controlled pound for pound, at least. Increasing forage yield elevates the energy and protein available to grazing cattle. This helps cows efficiently meet their own nutritional requirements and that of their calves.

In addition to increasing forage production, eliminating troublesome species provides other important benefits:

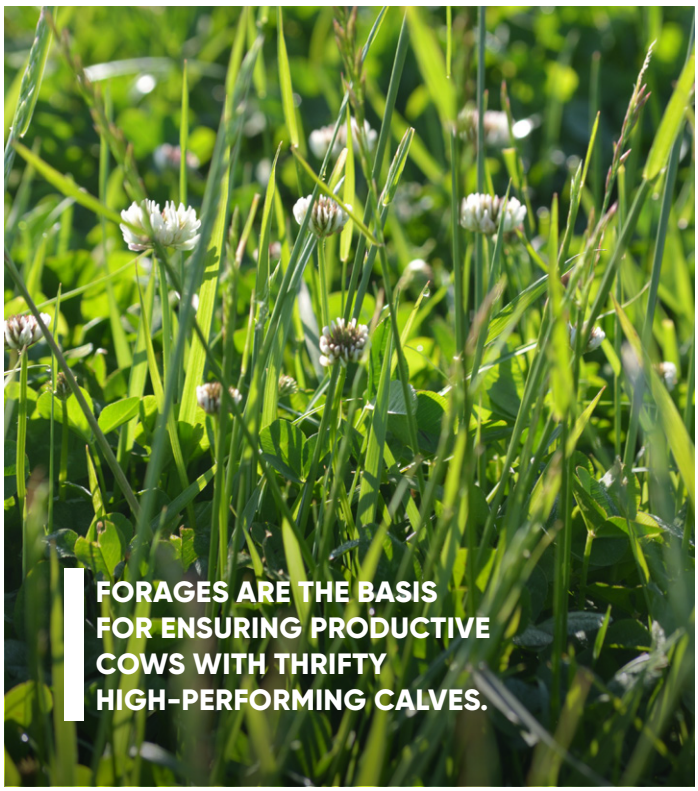
- **Increased utilization —** Cattle tend to stay clear of weedy areas due to physical or chemical barriers, resulting in grazing avoidance. When animals start to avoid areas because of weeds, cattle may focus on and overgraze areas with better access to desirable forages.

- **Improved health —** Providing ample, quality forage benefits the cow's body condition and has far-reaching impacts on everything from reproductive performance to weaning weights to the health of both cow and calf.

Mature weeds can reduce the quality and palatability of the forage available for livestock grazing. Or, worse, toxic weeds — such as poison hemlock, perilla mint and locoweed — cause severe illness that can lead to death.

Removing those toxic weeds benefits overall herd health. Potential issues caused by poisonous weeds include inhibiting the cow's ability to produce milk or return to their cycle for the next breeding season.

Remember: Your next calf crop is just as important as the current one. Forages are the basis for ensuring productive cows with thrifty high-performing calves. Weed-free pastures and hayfields can help you more cost-effectively get cows back in condition quicker after calving and produce high-quality hay that helps maintain condition through hay-feeding season.



# HELPING YOU OPTIMIZE YOUR GRAZING LAND

Corteva Agriscience is completely dedicated to agriculture and to researching and developing products and solutions specifically for rangeland and pasture.

With access to a complete portfolio of products and support tools, our Range & Pasture Specialists help deliver local, customized solutions for ranchers across the country.

At Corteva, our goal is to enrich the lives of those who produce beef and steward the land. The relationships we hold with ranchers is key to solving tomorrow's challenges. Our commitment allows us to help ranchers reach their goals — and optimize their return on investment.

## Our Range & Pasture Portfolio

**DuraCor®**
HERBICIDE

**The most extensive pasture weed control available.**

DuraCor® herbicide brings livestock producers and land managers the broadest-spectrum broadleaf weed control available for their grazing acres — and it's loaded with benefits. Low use rates, control of more than 140 weeds, a low-odor formulation, lasting residual control and no grazing restrictions help make DuraCor the easy choice for pasture weed control.

**PastureGard® HL**
HERBICIDE

**Pasture weed and brush control with a single product.**

PastureGard® HL herbicide gives ranchers one flexible product that takes out broadleaf weeds and brush.

**Chaparral™**
HERBICIDE

**Specialized broad-spectrum weed, brush and grass management.**

Chaparral™ herbicide is the simple answer for several significant, unique needs, like reducing the impact of toxic fescue through seedhead suppression and improving hay quality by removing Pensacola bahiagrass from bermudagrass.

**Remedy® Ultra**
HERBICIDE

**Simply the best choice against brush.**

Remedy® Ultra herbicide provides convenient, flexible, long-lasting control of more than 35 brush species.

## Graslan® L

HERBICIDE

### Reclaim ground lost to leafy spurge.

Graslan® L herbicide controls leafy spurge, allowing habitat and forage production to flourish more.

## GrazonNext® HL

HERBICIDE

### Making pasture improvement easy.

GrazonNext® HL herbicide is an easy way to get broadleaf weeds out of the way of pasture production. It provides a simple, lasting solution for tough pasture and rangeland weeds.

## MezaVue®

HERBICIDE

### The standard in pricklypear control.

With MezaVue® herbicide, pricklypear shows faster symptomology, delivering the peace-of-mind benefit that the herbicide is working. Faster control means native grasses can respond sooner, getting land back into production.

## Milestone®

HERBICIDE

### Unrivaled flexibility.

Milestone® herbicide is the most flexible herbicide available for rangelands. It provides superior, yet selective, control of many noxious and invasive weeds.

## Sendero®

HERBICIDE

### The standard in mesquite control.

Sendero® herbicide offers greater than 15% better control and more consistency than old standards. Sendero does not harm grasses and many desirable brush species. Controlling mesquite with Sendero results in increased grass production and improved wildlife habitat.

## Spike® 20P

HERBICIDE

### Premium long-term brush control.

Spike® 20P herbicide provides premium long-term control of the toughest brush species.

## Surmount®

HERBICIDE

### Best choice for broad-spectrum brush control in fence lines.

Gentle to desirable grasses while controlling a broad spectrum of weeds. The best choice for kochia control.

## Tordon® 22K

HERBICIDE

### All-purpose noxious weed control.

Tordon® 22K herbicide provides all-purpose noxious weed control as well as basic invasive weed management.

## Service Offerings

LANDVISOR™

### LandVisor™ advanced brush management

A digital support tool that combines sophisticated imagery, data, technology and expert guidance to provide confidence in land management decisions.

UltiGraz™ Pasture Weed & Feed

### UltiGraz℠ Pasture Weed & Feed

One Pass, Better Grass℠. It's as simple as that when you combine pasture weed control and fertilizer in a single, convenient time- and money-saving application.

Graslan® L, MezaVue®, Surmount® and Tordon® 22K are Restricted Use Pesticides.

# RESOURCES

Many factors play into maximizing pasture productivity, especially when drought or other issues present roadblocks. It's a delicate balance to be sure. For help with a plan to grow more grass, talk with your local ag chem retailer or custom applicator or contact your Corteva Agriscience Range & Pasture Specialist. Find them at **RangeAndPasture.com/specialist**.

See also:

**Disrupting Pasture Management: The Profit-per-Acre Approach**

**ROI Calculator**

**PastureView.com**

**RangeAndPastureSteward.com**