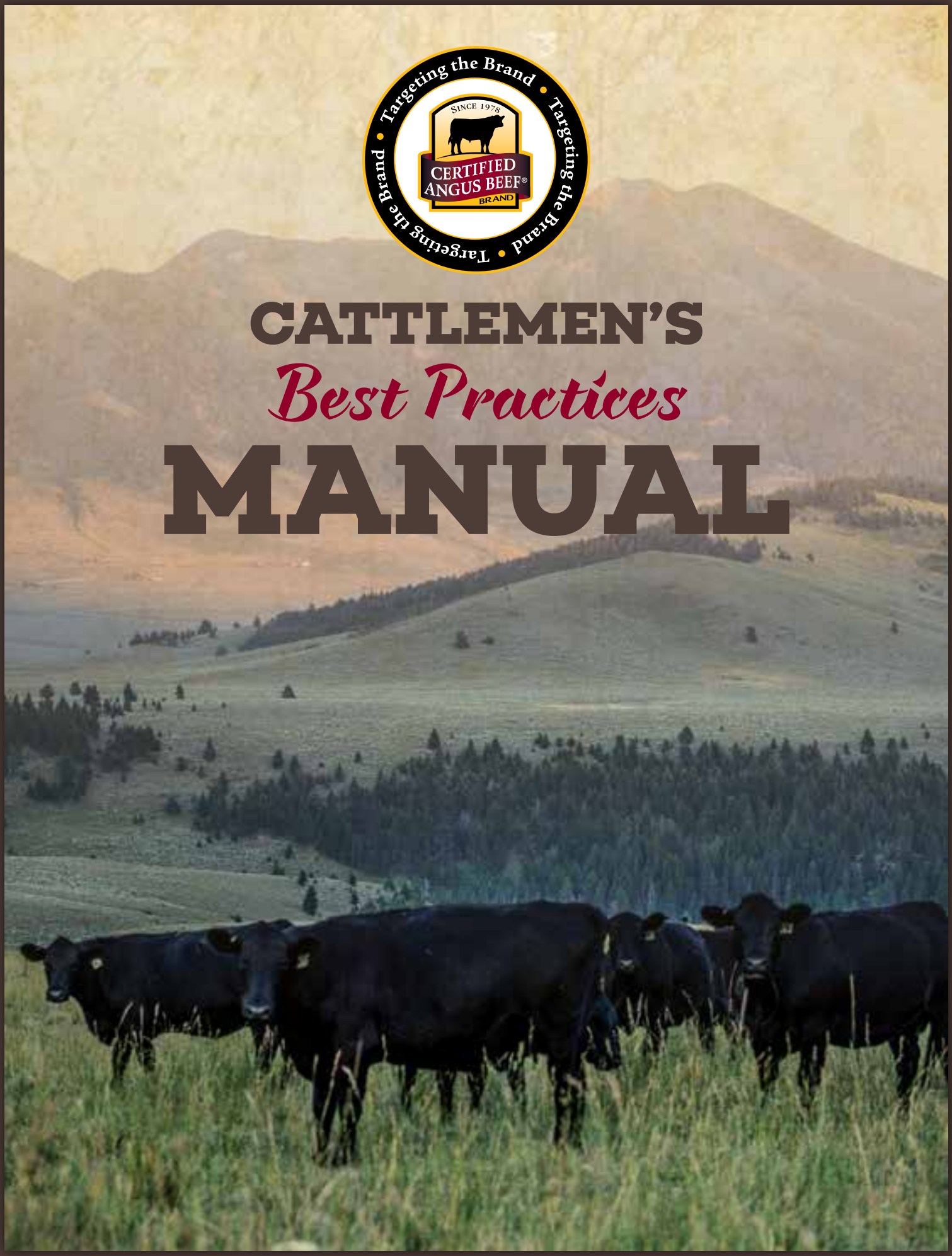

CATTLEMEN'S *Best Practices* MANUAL

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Aiming for Quality

Cattlemen looking to capitalize on quality-based marketing may specifically target the standards for the *Certified Angus Beef*® brand (CAB).

To qualify for the brand, cattle must meet the following criteria, after first being sold to a CAB licensed packing plant. Selection for the brand is a two-step process.

CAB product lives up to its promise because of its science-based specifications that set it apart from all other beef, ensuring the consumer has a superior eating experience every time. The brand is widely accepted by consumers, who have purchased more than 12.9 billion pounds since 2000.

So, what makes the CAB brand stand above the rest? With scores of "Angus" programs out there, including at least 140 other USDA-certified, we want to clarify the details.

Live Animal Identification – Step 1

• Phenotypic: Predominantly solid black hair coat (No other color behind the shoulder or above the flanks.)

Carcass Specifications – Step 2

Marbling

1. Modest or higher marbling

• That qualifies a carcass for average Choice or greater, and ensures superior flavor and juiciness. Not all Angus programs have this level of marbling, and it is the single largest barrier to CAB acceptance.

2. Medium or fine marbling texture

• Contains many small flecks of fat, as opposed to fewer, larger and coarser characteristics. Smaller flecks ensure consistent flavor and juiciness in each bite.

Maturity

3. "A" maturity for each, lean and skeletal characteristics

• All CAB carcasses are of "A" maturity, which is typically less than 30 months of age. Beef from younger animals is more tender than that from older animals.

Consistent Sizing

4. 10- to 16-square-inch ribeye area

5. 1,050-pound hot carcass weight or less

6. Less than 1-inch fat thickness

Quality Appearance and Tenderness

7. Superior muscling

• This screens out the influence of dairy-type cattle to maintain consistent yields and plate presentation.

8. Practically free of capillary rupture

• Limiting internal hemorrhaging in beef provides a more attractive meat case display.

9. No dark cutters

• Usually only a problem in animals that are stressed prior to harvest, beef appears dark brown to purplish and is not appealing to consumers.

10. No neck hump exceeding 2 inches

• This limits the influence of bos indicus (Brahman-type) cattle to minimize tenderness concerns.

Consumers communicate with dollars – the only new dollars that all beef industry segments have to share. They have spoken clearly in restaurants, grocery stores and research panels. That's how we know the number one reason they lay their dollar down for beef is taste primarily determined by marbling. The marketplace has reflected this tremendous demand for USDA Prime and premium Choice (Modest or higher marbling score).

The brand was established in 1978 to consistently identify a product to meet this demand, though demand was not so well documented in those days. Since the beginning, the CAB brand has grown to be the largest and most recognized brand of fresh beef in the world. That did not happen because of clever marketing, but because the CAB brand delivers on a promise to consumers.

With all major packing companies in the U.S. and Canada producing CAB product, it has become synonymous for "high quality." Nearly every fed-cattle marketing grid features a CAB premium. Recognizing that, cattle feeders selling on those grids seek cattle that can bolster their profits by producing carcasses packers demand.

To learn more about raising cattle that fit those value-based markets, consider the best management practices you can engage at each step of production to achieve success:

Chapter 1

BREEDING

Plan for the Calving Season

Establish one or two periods – typically spring or fall – for calving rather than continuous. Calve in a 60- to, at most, 90-day window and gain two benefits: a more effective vaccination program and more appealing calves for feedyard buyers. Vaccines are less effective spanned across varied ages, and weight ranges can surpass 200 pounds (lb.) as calving intervals grow.

- Consider breeding heifers to calve 30 to 45 days before the mature cowherd. This allows first-calf heifers that miss a cycle at rebreeding to stay in the main calving season. This strategy also lets you focus labor needs at calving time.
- Consider estrus synchronization in combination with artificial insemination (AI) to enable use of highly proven sires. Adapt programs that fit your management and facilities. Resources for implementing this strategy can be found at http://www.iowabeefcenter.org/estrussynch.html.

Health

Herd health is critical for a profitable ranching operation and no less important in producing a high-quality beef product. The best genetics are easily derailed if cattle get sick at any time in their lives. Research has repeatedly shown the dramatic impact health has on both feedlot performance and carcass merit. These recommendations are meant as a general guide but cannot anticipate regional or individual herd health needs. **Your local veterinarian should always be consulted when developing your health programs.**

Pre-breeding health management in your cowherd can influence conception rates within the first breeding cycle. Vaccination strategies are designed to reduce the risk of disease from common reproductive, respiratory and enteric pathogens. Vaccinations will not eliminate disease risk, but, when accompanied by good animal husbandry and biosecurity, it can greatly reduce risk and losses from disease.

Develop a herd health vaccination program that includes:

IBR
PI-3
BVD
BRSV
Vibriosis
Leptospirosis

In addition to vaccinations, herd bulls should also be able to pass an annual breeding soundness exam prior to turnout.

- Consider deworming and fly control at breeding, depending on your calving season and seasonal parasite pressure.

Nutrition

Herd nutrition, including your mineral program, has a significant impact on the health and immune response of your calf crop, which can affect conception rates.

- Work with your nutritionist to develop an effective mineral supplementation program. This will help you decide if your mineral supplementation programs can be as simple as a salt-based mineral with Ca, P and trace minerals, or as complex as high P mineral with chelated trace minerals. They will also be able to help address mineral deficiencies while balancing regional mineral antagonisms.

Genetic Selection Considerations

Cattle can only achieve the carcass merit their genetics allow, meaning genetic selection is critical. No amount of management can overcome poor genetics, but outstanding genetics can easily be minimized through poor management.

The trait most related to achieving the CAB target is **marbling**, but **ribeye area** and **fat thickness** can also have some effect. Genetic improvement can be made for these carcass traits with no negative impact on reproductive, maternal or growth traits. In fact, improvement can be made in all of these areas at the same time with the use of expected progeny differences (EPDs). As heifers are retained or purchased, superior marbling genetics should be a key consideration in a balanced-trait selection strategy.

Marbling

Research at the Meat Animal Research Center (MARC) has proven over the years that the Angus breed is superior in marbling to all other mainstream beef breeds. CAB requires Modest or greater degrees of marbling ("Upper 2/3 of Choice" or "Premium Choice"). In more than 90% of the Angus influenced (black-hided) cattle that fail to meet CAB specifications, inadequate marbling is to blame. Keep in mind that the percentage of Angus genetics varies greatly in black-hided cattle.

- Marb is the EPD reported by the American Angus Association® (AAA) to predict genetic potential for marbling. Carcass data, yearling ultrasound data, pedigree and genomic information are used to calculate Marb.
- The amount of marbling needed when selecting a herd sire depends on the cowherd he will service. If the cowherd is of Continental or highly crossbred genetics, or little selection pressure for marbling in Angus replacement heifers, selection for greater marbling is recommended. If the cowherd is Angus or English-based, and known to produce calves that can marble, modest to higher levels may suffice.

Selection Indexes for Combining Traits

The AAA has developed index tools that combine various trait EPDs and economics for ease of selection. The indices are called $ Values.

- $ Grid ($G) combines the three genetic traits that influence CAB acceptance rates. Its value is calculated using a three-year average of grid premiums and discounts.
- Since marbling is the most limiting factor in CAB acceptance, you should always consider Marb when using $ Grid index to ensure continual progress toward brand certification and follow the aforementioned marbling criteria in addition to using $ Values.

Below are general recommendations for selecting a herd bull or AI sire to target a quality endpoint of the *Certified Angus Beef®* brand. For more accurate selection in all traits, let carcass data from your calves establish a baseline. Such data can identify areas of strength and weakness, pointing out needs for genetic selection. Recommendations for marbling are absolute minimums. If carcass merit has been a focus of genetic selection within your cowherd for several generations, you can continue a trend towards quality by starting with these EPD recommendations. If carcass quality has been a lower priority in the genetic selection of your cowherd up to this point, it is recommended that you select sires from an even higher percentile than what is suggested here. Greater marbling levels should be selected for whenever other important traits can be obtained in an animal.

When choosing sires that are right for your herd, it is important to consider marketing goals in addition to economically relevant traits. Using EPDs, you can select sires to compliment your maternal goals without sacrificing the ability to improve carcass merit of calves not retained on the ranch. With greater than 70% of cattle grading Choice or Prime, the market continues to demand cattle with the genetic ability to gain and grade while heifer mates perform on the ranch.

Targeting the Brand recommendations are breed average or better for marbling EPD and $ Grid of non-parent Angus sires. Actual EPD minimums are below, and are based on breed averages from the Spring 2018 Angus Sire Summary.

Genetic Recommendations

	Value
Marbling EPD (Marb)	+ 0.53
Dollar Grid Carcass Index ($G)	+ 32.65

Based on breed averages from Spring 2018

A note on the accuracy (ACC) of EPDs or the reliability that can be placed on the EPD: When this number is close to 1.0, you can be more confident of the results in the next generation. The number of progeny and ancestral records in the database, along with genomic testing results, largely determine accuracy. When selecting an AI sire, consider utilizing bulls with high-accuracy carcass EPDs. When purchasing a herd sire, consider those that have been DNA tested and have genomic-enhanced EPDs–as they will have greater accuracies.

When choosing sires that are right for your herd, it is important to consider marketing goals in addition to economically relevant traits. Using EPDs, you can select sires to compliment your maternal goals without sacrificing the ability to improve carcass merit of calves not retained on the ranch. With 70% of cattle grading Choice or Prime, the market continues to demand cattle with the genetic ability to gain and grade while heifer mates perform on the ranch.

When selecting a sire for use on virgin heifers, also focus selection on minimizing calving difficulties. Difficult births stress both dam and calf, and may reduce the amount and timeliness of nursing. Heifers experiencing calving difficulty return to estrus later – potentially reducing reproductive rates in a controlled breeding season. Calving ease is largely determined by birth weight, and can be accurately managed using Birth Weight (BW) and Calving Ease Direct (CED) EPDs.

Controlling the length of the breeding season is the first step to improving calf uniformity. Managing cows to calve during a defined calving season results in a more uniform calf age and weight range, allowing you to market larger, uniform weight groups regardless of marketing at weaning, yearling or as fed cattle. Uniform calf age allows improved health and nutritional management of calves and cows.

Chapter 2

CALVING & EARLY CALFHOOD

General calving management

- Individually ID calves soon after calving. At a minimum, keep records of calving date, sex and dam. Add the sire, pasture, calving ease code and birth weight if you can.
- An ear tag is likely the most practical form of identification. Whether you choose the basic numbered panel or electronic ID, use the system that best fits your plans. Some marketing decisions start with a calfhood tag.
- Record all management practices, such as medical treatments and vaccinations. Make sure to record date, products and dosages.

- Pocket-sized herd record books are easy to carry, but also easy to lose. Maintain a backup record system in an office ledger or computer.
- Maintain easy access to records for at least five years and archive older records.

Health

Calving

One of the first health challenges for a calf could be scours.

- Research has developed management systems to minimize the threat by rotating pregnant cows to fresh pastures while calving. Moving pregnant cows to clean pastures minimizes new-born calves' exposure to bacteria build up from older calves.
- Some managers may choose to vaccinate cows prior to calving for scours, especially in corral or dry lot environments, to improve disease protection through colostrum. If the cowherd has not been vaccinated, an oral vaccine in newborns prior to nursing can provide immediate protection in the gut. A scours vaccination program should include protection against:
- **Rotavirus, coronavirus**
- **K99 E. coli**
- **Cl. perfringens Type C**

60 to 90 Days of Age

A proper vaccination program is key to good animal health, and some programs begin at this stage.

- Consider a clostridial and IBR, PI-3, BVD and BRSV vaccine to provide some level of protection against clostridial diseases and viral infections that may predispose "summer pneumonia."
- If not done when tagged at birth, castration at this time is recommended. Early castration not only minimizes stress, but will also improve a calf's ability to achieve CAB standards by increasing marbling at an earlier age.

4 to 6 Weeks Pre-weaning

A pre-weaning vaccination program allows the calf to further develop its immune system prior to the stress of weaning.

- Use a vaccination program including protection from IBR, PI-3, BVD, BRSV and clostridial diseases. While modified-live respiratory disease protection is preferred, vaccine labels vary for administration to nursing calves, so work with your veterinarian to develop a program that fits your operation.
- If calves will be weaned within 30 days, consider de-worming and applying controls for internal and external parasites specific to your region. Calves treated now will be parasite free at weaning.
- If not done earlier, castrate male calves to minimize stress.

Nutrition

As early as 60 days of age, nutrition other than milk has been shown to affect carcass quality. While cows reach peak milk production about 60 days after calving, this is the same time that calf nutrient demand can begin to exceed the cow's ability to supply. This limitation may be due to the cow's genetic potential for milk, productive age, or the environment restricting feed or forage supplies.

When calf growth is limited by dam milk production, providing calves with supplemental feed while the calf continues to nurse can have a significant positive effect on marbling. Diets high in starch have proven a most effective way to stimulate marbling deposition. If a calf 's growth potential is being held back by marginal nutrition, marbling is being sacrificed. Calf weight gains below 2 lb. per day should be avoided.

Chapter 3

WEANING

General Management

A 45-day minimum preconditioning period is recommended post-weaning. During this time, target gains of 2 to 2.5 lb. per day. The main goals during this period are:

- Acclimate calves to eating from a bunk and drinking from a waterer
- Provide time for complete vaccination and booster program
- Allow calves to re-gain lost weight due to weaning stress

Deciding when to wean can be a challenge. To help decide, consider calf growth, cow condition and market opportunities. Early weaning (60 to 150 days of age) is often considered when calf performance is being limited by cow productivity due to age or genetic potential. Alternatively, cow milk production may be limited by weather, and resulting forage conditions also favor early weaning. Regardless, when calf gain slows, consider early weaning rather than supplementing the cow to increase milk production as early weaned calves are efficient at converting feed to gain (4 to 6 lb.), whereas a cow will require 25 to 27 lb. of forage to increase weaning weight by an additional pound. Not only is this system more efficient, but also calves fed a starch-based diet will have increased quality grade at harvest.

If not early weaned, match weaning time to the calf 's growth potential. The industry standard of 205 days may be late for today's higher growth genetics, as milk without supplementation may not be meeting the calf 's energy requirements. Consider weaning calves when they have reached approximately 45% of their expected finished weight. Thus, a steer that finishes at 1,300 lb. should be weaned by 585 lb. If delayed weaning is preferred, consider creep feeding for a minimum of 30 days prior to weaning to enhance future quality grade rather than feeding the cows to increase milk production.

Health

Stress compromises immune system function. To optimize response to vaccines, every effort should be made to reduce stress at weaning time. Fence-line weaning is one management practice shown to minimize stress. By placing cows across the fence from calves, this weaning process allows calves to adjust to new feed and forage while minimizing the search for the cows.

- All booster vaccinations should be given at weaning time; however, do not booster clostridials at weaning if done previously.
- If not done at pre-weaning, de-worm and apply controls for internal and external parasites specific to your region.
- If pre-weaning vaccinations were not administered, give first round of vaccinations. Follow these with a booster 14 to 28 days later.
- A medicated starting ration may be used to prevent sickness and digestive problems (bloat). Preventative feed antibiotics will require veterinary consultation before feeding. Implementing rations with an ionophore or coccidiostat is recommended to improve efficiency and maintain health.
- Calves should go through a minimum 45-day preconditioning program before shipping. This gets them through the stress of weaning, accustomed to eating from a bunk and drinking from a waterer.

Nutrition

Post-weaning nutrition can be as diverse as the ranch the cattle are raised on, but a few key principles will apply regardless of the operation. Utilize a corn-based, high-starch ration with ionophore. Starch-based weaning diets will enhance marbling deposition in the calf, continuing the lifetime approach to quality grade improvement. Ionophores maintain gut health while improving protein supply to the animal.

Because the distilling process removes starch, distillers grains or corn gluten feed are not recommended as the primary component of a creep diet for calves destined for a quality market. These ingredients make excellent protein sources but should not make up more than 20% of the diet to continue marbling enhancement.

Caution

While ingredients are important, the amount of nutrients is as important as the source. If calves are moved from a high-energy diet to a lower gain (<2.0 lb./day) growing diet, they will not continue to develop marbling at a high rate. A good rule of thumb is for a calf to continue to gain at a constant to increasing rate each day. Long periods of compensatory gain can be detrimental to a lifetime of marbling development.

Implant Use

Growth-promoting implants administered at or before weaning may increase gain prior to marketing; however, marbling levels at harvest may be reduced. This is most common when the implant potency doesn't match the nutritional supply. For implant benefits to be expressed, calves need to gain at least one pound a day. Where implants are most detrimental to quality grade is where the nutrition isn't matched to the implant. If considering using growth promoting implants, work with your nutritionist to develop an implant program matched to the nutrition supplied. Implant potency can increase as the nutrition improves, using an aggressive implant when nutrition isn't able to support the increased growth may increase gain, but grade will suffer over the long term.

Chapter 4

MARKETING

General Management

Regardless of how and when you intend to market your calves, there are several tips that are universally helpful. Documentation of the value you've added is key. Then, play an active role in promoting that value, no matter the marketing avenue. Here's a short list of the primary value factors to record:

- Weight
- Length of time calves have been weaned
- Post-weaning nutrition program
- Health program – vaccine companies and veterinarians offer systems to validate your program. These give assurances to buyers and add value to your calves.
- Genetics – breed profile of cows, breed and EPD profile of sires, GeneMax™ (GMX™) scores of commercial cattle
- Age range – oldest to youngest calf in the group. With requirements for export markets often determined by age, this record adds value to your calves, especially if done through a USDA Quality Systems Assessment (QSA) or Process Verified Program (PVP). The AngusSource® program is another resource that can help qualifying herds document and supplement marketing efforts. Calves sired by registered and transferred Angus bulls can be enrolled into this AAA program that documents age, source and genetics. The AngusSource® program can also list your calves to buyers around the country. To learn more, go to www.angussource.com or call 816-383-5100.

Regardless of which marketing outlet is right for you, there are some considerations you should think about when partnering with a feedyard:

- What is the company's strategy for maximizing the value of your cattle?
- Does this yard have experience feeding cattle similar in genetics and origin to yours?
- What cost of gain (COG), average daily gain (ADG) and feed conversion (F:G) does the yard typically achieve for cattle like yours?
- What are the specific costs, such as yardage, processing, corn, etc.?
- What is the yard's marketing expertise? If it markets on grids, with what types of grids (quality vs. cutability) does it have experience?
- Does the yard sell a whole pen at one time or sort pens for marketing?
- If it fits your situation, can the yard work with a number of producers pooling their calves together in one pen (apportioning feed bills, etc.)?
- Is assistance with risk management provided?

- What financing options are available on cattle and/or feed?
- Are partnering options offered? If so, what are the partnering terms?
- What is the yard's experience in capturing and returning carcass data?
- What are some of the unique services and benefits of the yard?
- Can the yard arrange trucking to suit your schedule?
- Can it provide a list of customers who could be contacted as references?

Retained Ownership and Grid Marketing

You want to capture all or most of the value you add to your calves. The amount you can capture through marketing depends on the risk you are willing to stand and amount of ownership you are willing to retain.

Retained ownership through finishing may not be best for producers of unknown genetics or those who take no steps to coordinate health and weaning; however, it may be the best way to realize the full feeding and carcass value of a set of cattle.

- Retain up to 100% ownership in the calves through finishing and sell the cattle on a value-based marketing grid or formula. Many feedyards will partner with you on a set of calves with varying levels of ownership from 75% or more to less than 25%. Many also offer up to full-term financing for the feedyard phase, using the cattle as equity.

Select a feeding partner. The AAA provides a list of cattle feeders along with contact information at www.angus.org.

- Conduct several phone conversations to narrow the list, then personal visits to find a feedyard partner matching your goals.
- Finally, pick a feeding partner with whom you are comfortable. Get to know the management personnel and their philosophies. Success in feeding your cattle will be highly dependent on your comfort, trust and communication with each other.
- **Note:** *Some of the calves from your herd may not be ideal for feeding with the group. Those born far earlier or later than average may present feeding challenges. Sort those very heavy or light ones out, along with any outliers for health (chronics) or genetics (neighbor's bull), and market them as feeders. The older and younger cattle may still bring a premium from a buyer with orders to fill. Outliers may take a discount, but that would likely be amplified if you try to feed them with the rest of your calves.*

Specialty Feeder Calf Sales

Many state, regional and county livestock organizations and universities hold special sales in cooperation with auction market operators, or video and internet auction services. These sales aim to assemble truckload lots (~50,000 lb.) of calves of like weight, sex, health and genetics, often in multiple-owner, co-mingled lots.

- Investigate the options and consider using a sale that works for your scenario. Each sale will have unique requirements for participation, so develop a plan well in advance of the marketing date.
- Enlist the assistance of your seedstock provider and visit with your local auction markets about their willingness to hold the event if a sale is not organized that fits your needs.
- Consider working with other producers who have similar goals when organizing your own event. If you don't have enough for an entire sale, try to get a section of an existing sale devoted to your group.
- Promote your participation in any sale to prospective feedyards and order buyers.
- Investigate any means of tracking calves after the sale. The AngusSource® program can certainly help with promotion, and it may help facilitate future transfer of information back to the ranch.

Direct Marketing to Feedyards

When it comes to Angus cattle and generic "blacks," feeder cattle buyers have access to more calves in this class than any other. Amidst the marketing claims, buyers are likely to focus only on cattle that, with proven quality and management aspects, add value to the best known Angus genetics. Building a network of progressive cattle feeders and order buyers by highlighting your valuable management efforts can add demand to your cattle above similar-looking calves.

Whether or not calves will be sold at auction or private treaty, it pays to do some homework on potential buyers ahead of time. Work on marketing the documented value that you've built into your calves similar to how job seekers pursue a desired career move.

Here's how:

- **Know your options:** The list of feedyards at www.angus.org is a good starting point to build a network. A simple phone call that introduces you and your cattle to a handful of prospective buyers or partners will help gauge their interest.
- **Start early:** Make those phone calls before the beginning of the marketing season (early summer for calves to be sold in late summer or fall). Don't wait until a few days prior to calves being sold at a local auction before making contact with buyers.
- **Send a resume:** Follow up with the most likely feedyards in written form. Send a "resume" that describes your cattle and documents their value attributes in detail. Consider sending a few photos of cow-calf pairs that typify the offering of cattle you are merchandising.
- **Outline objectives:** If there is a specific sale you are targeting in future weeks or months, indicate the date, location and auction company. Similarly, if you wish to sell the cattle or partner in a private treaty transaction, share the timeline in which you want to solidify an agreement with a buyer. Then, a week or two prior to the sale date, contact the interested buyers once again to remind them of the auction date or to begin final discussions to reach a private treaty agreement.
- **Follow up:** Continuation of the networking process can be built upon year after year. Before long, you will have a solid list of buyers who are most likely to be a good match for the cattle you offer. As long as the cattle turn out to be of the kind and quality that's been represented, you will build a reputation as a producer who takes care of details and is serious about win-win relationships.

- **Partner relationship:** Some of these strategies change when you develop a key relationship to the point of partnering and sharing data to improve your cattle over time. When you reach that level, it could be short-sighted to use data from one trusted partner in an effort to simply sell calves to other buyers for a marginally higher price.

Bonus: If your calves are AngusSource® enrolled or GMX™-tested, their resumes have already been created. Make sure to utilize the marketing documents that come with AngusSource® enrollment. You will have access to a listing of the average EPDs of your calves' sires, plus a listing of recorded vaccinations and other important management practices. Your GMX™ scores provide information to feedyards on the genetic potential of your cattle to gain and grade.

Run a few numbers to make this data even more valuable. Visit www.angus.org to find the Angus breed EPD averages. Compare the average EPDs of the sires you used to that of the breed averages to find what advantages you can point out. Perhaps the calves you're selling represent sires whose $B value is $10 higher or their YW is 10 lb. heavier than breed average. Use those numbers to merchandise the value of your calves to potential buyers. Call 816-383-5100 to learn more about how AngusSource® can prove the worth of your calves.

Replacement Heifer Retention

Retaining and developing your own replacement heifers can be a good way to improve your cowherd with known genetics and management, but sorting the right ones should be no less strategic than if you were marketing them as value-added feeder cattle.

Beyond herd sire selection, it is important to have a cowherd with the same potential for hitting the CAB target. Retaining the right heifers back into the herd is a critical step. The first step to selecting replacements begins by sorting out heifers born early in the calving season. These heifers are born to cows who fit your production and management system, and will be more productive over their lifetime than late-born heifers. Research has shown that nervous or excitable cattle have more health problems than other cattle and risk injury to handlers, damage to equipment and produce lower quality carcasses. Flighty or excitable cows should be culled from the herd, and their daughters, even if born early, should not be retained as replacements. Care should be taken not to introduce nervous or excitable replacement heifers into the herd.

While selecting docile, early born heifers is a good place to start productive female selection, today, tools exist to make genetic improvements in fertility, milking ability and other maternal traits that are top considerations for profitable beef operations. Ranchers now have the opportunity to select for maternal replacements while improving carcass traits, such as marbling, simultaneously.

As carcass merit continues to improve in the nation's beef herd, selection for increased marbling offers opportunity to retain replacements suited to the ranch and the rail. A recent literature review suggests ranchers can select for carcass quality improvements without negatively impacting maternal traits.

This selection process is now increasingly precise due to a DNA test GMX™ designed in partnership with Certified Angus Beef LLC for commercial cattle with high-percentage Angus influence. The GMX™ focus test provides information on the genetic potential for the profit-driving traits of post-weaning gain and grade. The GMX™ Advantage test includes three different scores:

Cow Advantage: Predicts differences in profitability from heifer development, pregnancy and calving, to the sale of weaned progeny

Feeder Advantage: Predicts differences in net return of feeder calf progeny due to growth, feed efficiency and CAB carcass merit

Total Advantage: Predicts differences in profitability from genetic merit across all economically relevant traits captured in the Cow and Feeder Advantage index scores

To decide which GMX™ test is right for your herd, visit http://www.angus.org/AGI for more details.

- After culling for structure, disposition and type, consider adding GMX™ as another layer of criteria for replacement heifer candidates.
- If purchasing replacements, seek females that have been GMX™ tested to guide your buying decision.
- Use the sire match feature of both GMX™ tests to retain more heifers by AI sires and your best herd bulls.

Conclusion

This manual is no more than a set of guidelines for those who want to produce high-quality beef and reap the rewards for doing so. Its foundation, ideas and theories are science-based, but like all science, they are subject to being replaced as the body of knowledge grows. Moreover, many are in need of local adaptation to environment and resources.

Management practices have this in common with the dynamic and improving cowherd: perfection will never be attained. Proceed with the certainty that you can always do better. Use the best information available now, but maintain a standing inquiry into every channel that could yield better management practices than those considered "best" at this writing. From information to management to the ultimate ideal represented by CAB products, welcome to the quest for the best.

For more information or to contact our team, please visit www.CABpartners.com or call 330-345-2333. Cited resources available upon request.

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