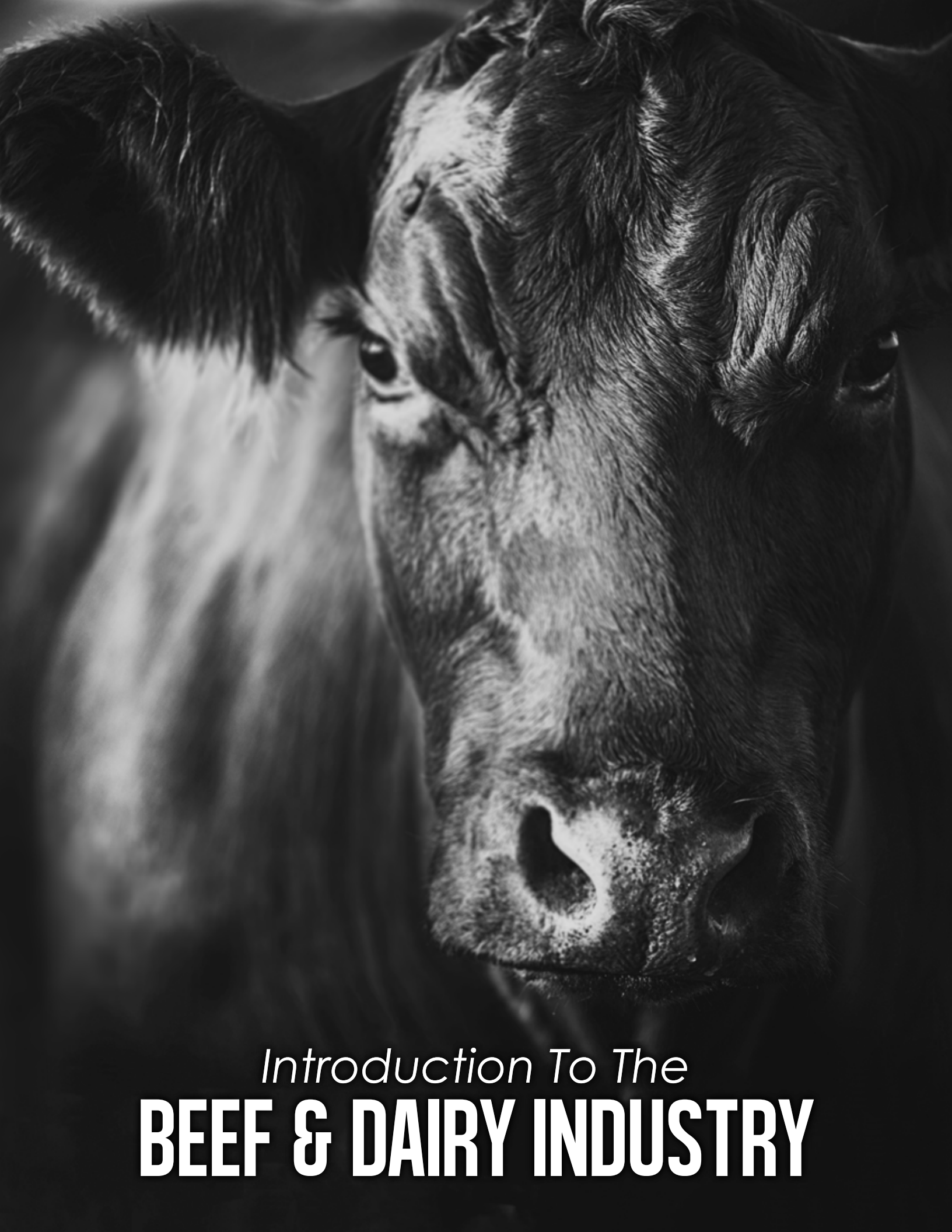

Introduction To The

BEEF & DAIRY INDUSTRY

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INTRODUCTION

Healthy animals are an important part of our daily lives and are essential for global public health. As the world population grows, so does the demand for safe and high quality animal proteins such as milk, eggs, meat and fish. Cattle handlers maintain a low stress environment for their herds, involving constant safety, health, comfort, nourishment and humane handling. Essential to this are wholesome and sustainable farming practices, as well as dedicated farmers and ranchers working closely with their veterinarians to establish the best herd health management that suits their needs.

INDUSTRY ASSOCIATIONS

NCBA The National Cattlemen's Beef Association is the national trade association representing the Unites States cattle producers. NCBA works to advance the economic, political and social interests of the United States cattle business and is an advocate for the cattle industry's policy positions and economic interests.

AABP The American Association of Bovine Practitioners is an international association of veterinarians serving the society as leaders in the cattle health, welfare and productivity.

BASIC BOVINE FACTS

- The combined value of the cattle and beef industry is $200 billion dollars
- Cows are raised for many reasons including: milk, cheese, other dairy products, also for meat such as beef, materials such as leather, and manure for fuel.
- 90% of all beef raised in the United States is sold in America, while 10% is exported
- Between 24 and 27 billion pounds of beef are produced annually in the United States
- The average American eats about 65 pounds of beef each year
- Most farms and ranches in the United States, including cattle ranches and dairy farms are family owned and operated. More than 97 percent of beef cattle farms and ranches are classified as family farms
- The average cow will eat about 100 lbs. of feed per day and drink 30-50 gallons of water
- Cows spend 8 hours per day eating, 8 hours chewing their cud (regurgitated, partially digested food), and 8 hours sleeping
- The typical cow stands up and lays down about 14 times a day

COMMON TERMS

ACIDOSIS Excess amounts of carbohydrate-rich foods such as grains or fruit. Rumen function is overloaded leading to increased acid in the rumen. Milder forms have a slower onset, but if not managed can lead to long term changes to the rumen.

BRUCELLOSIS Contagious bacterial disease that results in abortion; also called Bang's disease.

BULL CALF Young male bovine under the age of 2 yrs old who has not been castrated.

BULL Bovine male, the term usually denotes animals of breeding age.

COW A female cow that has produced a calf.

COW CALF OPERATION A management unit that maintains a breeding herd of cows and produces weaned calves for sale.

CULL To eliminate one or more animals from the breeding herd.

CWT Abbreviation for hundredweight (100 lb).

DISPLACEMENT OF THE ABOMASUMS The abomasum (or true stomach) normally lies on the floor of the abdomen, but can become filled with gas and rise to the top of the abdomen, when it is said to be 'displaced'. The abomasum is more likely to be displaced to the left (LDA) than the right (RDA).

DRY COW Non milk producing a cow approximately 2 weeks from calving, usually housed separately to facilitate different feeding and close to the milking parlor.

DYSTOCIA Refers to abnormal or difficult birth. It is expected to occur in about 10-15% of first-calf heifers and in 3-5% of mature cattle. In cattle, the common cause is foeto-maternal disproportion.

ENDOMETRITIS An infection of the inner layers of the uterus. It has an economic impact as it reduces fertility and milk yield and is associated with an increase in culling rates.

ESCHERICHIA COLI (E. COLI) Bacterium that is commonly found in the lower intestine of warm-blooded organisms. Most E. coli strains are harmless, but some serotypes can cause serious food poisoning in their hosts, and are occasionally responsible for product recalls due to food contamination.

ESTROUS The recurring physiologic changes that are induced by reproductive hormones in species including cattle.

EXPECTED PROGENY DIFFERENCE (EPD) One-half of the breeding value of a sire or dam; the difference in expected performance of future progeny of a sire, when compared with that expected from future progeny of bulls in the same sire summary.

FRESHENING COWS After a cow gives birth to a calve, her milk production begins. She then is considered a "wet cow".

HARDWARE DISEASE A common term for bovine traumatic reticuloperitonitis. It is usually caused by the ingestion of a sharp, metallic object. These pieces of metal settle in the reticulum and can irritate or penetrate the lining. It is most common in dairy cattle, but is occasionally seen in beef cattle.

HEIFER A female that has not produced a calf.

HEIFERRETTE Heifer that has calved once and is then fed for slaughter, the calf has usually died or been weaned at an early age.

IgG The most abundant of the five classes of immunoglobulin. It is the major antibody in the secondary humoral response of immunity.

JOHNE'S DISEASE Is a chronic enteritis of ruminants caused by M. paratuberculosis. This bacteria embeds itself in the wall of the lower part of the small intestine known as the Ileum. As an immune response, infected tissues attempt to regenerate healthy tissue which leads to visible thickening of the intestines. This prevents nutrient absorption, resulting in weight loss. Late in the infection, antibody

production by the animal can be found in serum of animals and is an indicator that clinical signs of disease and death from the infection will soon follow.

KETOSIS This occurs mostly in dairy cows, a metabolic disease when a cow is in a severe state of negative energy balance. In this state, the cow mobilizes large quantities of body fat but cannot convert this to energy through the usual pathways.

MASTITIS The inflammation of the mammary gland and udder tissue, and is a major endemic disease of dairy cattle. Milk secreting tissues and various ducts throughout the udder can be damaged by bacterial toxins and sometimes permanent damage to the udder occurs.

MILK FEVER Is a disorder mainly of dairy cows close to calving. It is a metabolic disease caused by a low blood calcium level (hypocalcaemia).

PNEUMONIA Clinical signs of bacterial pneumonia are often preceded by signs of viral infection of the respiratory tract. With the onset of bacterial pneumonia, clinical signs increase in severity and are characterized by depression and toxemia. A combination of clinical signs of depression and fever (104°–106°F [40°–41°C]), without any signs attributable to other body systems, are the classic components of a case definition for early cases of BRD. Serous to mucopurulent nasal discharge; moist cough; and a rapid, shallow respiratory rate may be noted.

PSEUDOCOWPOX A common, mild infection of the udder and teats of cows, is caused by a parapoxvirus and is widespread worldwide.

RETAINED PLACENTA Retention of fetal membranes, or retained placenta, usually is defined as failure to expel fetal membranes within 24 hr after parturition.

STEER A castrated male.

TMR Total mixed ration.

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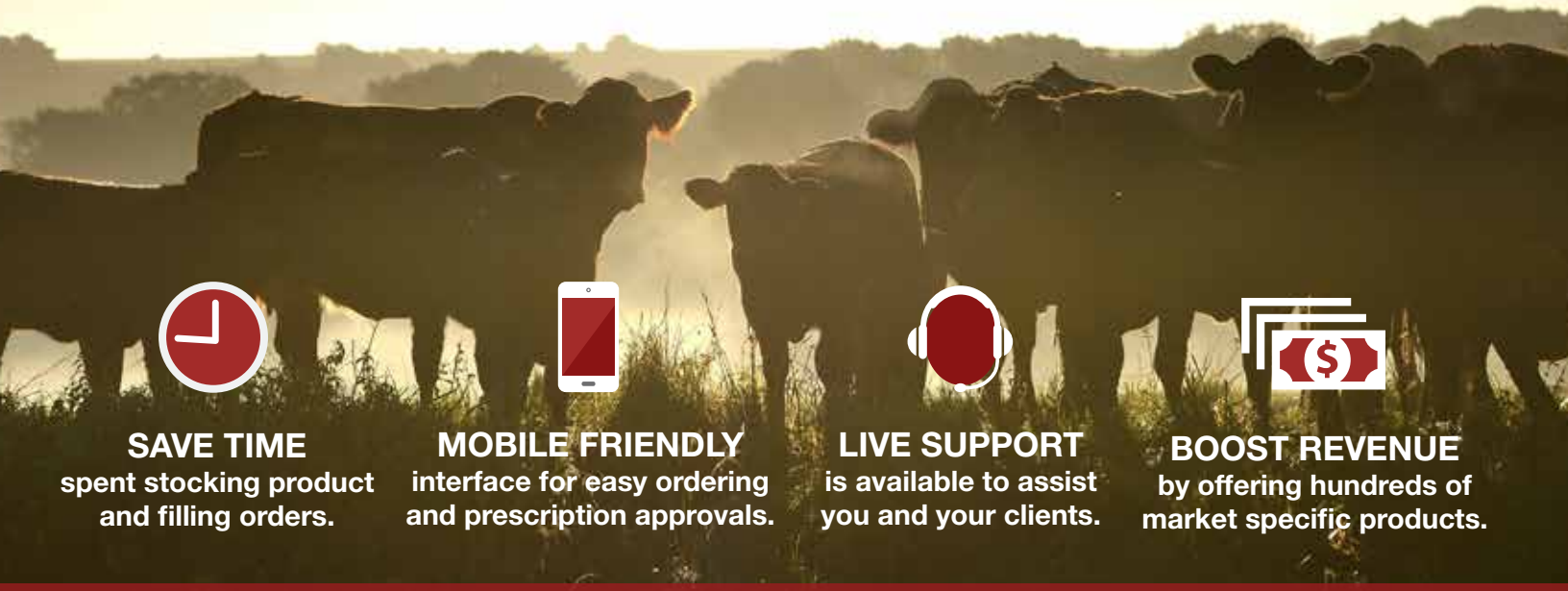
Our large animal online store platform allows your producers to easily order anytime, even outside of business hours.



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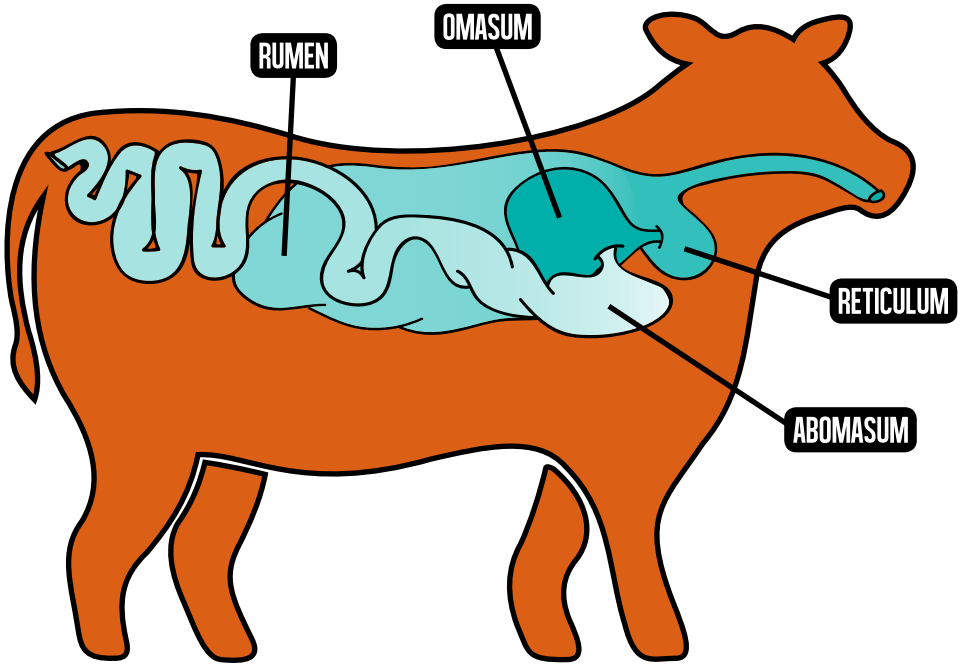
BOVINE DIGESTION



Cattle are ruminants, meaning their digestive system is highly specialized to allow the use of poorly digestible plants as food. Cattle have one stomach with four compartments, the rumen, reticulum, omasum, and abomasum, with the rumen being the largest compartment.

Cattle are known for regurgitating and re-chewing their food, known as cud chewing, like most ruminants. While the animal is feeding, the food is swallowed without being chewed and goes into the rumen for storage until the animal can find a quiet place to continue the digestion process. The food is regurgitated, a mouthful at a time, back up to the mouth, where the food, now called the cud, is chewed by the molars, grinding down the course vegetation to small particles. The cud is then swallowed again and further digested by specialized microorganisms in the rumen. These microbes are primarily responsible for decomposing cellulose and other carbohydrates into volatile fatty acids cattle use as their primary metabolic fuel. The microbes inside the rumen also synthesize amino acids from non-protein nitrogenous sources, such as urea and ammonia. As these microbes reproduce in the rumen, older generations die and their cells continue on through the digestive tract. These cells are then partially digested in the small intestines, allowing cattle to gain a high-quality protein source. These features allow cattle to thrive on grasses and other tough vegetation.

RUMEN: The rumen is the largest part of the cow's stomach, holding up to 50 gallons of partially digested food at any given time. It contains enzymes that start the digestion process, breaking down the hard food and cellulose. The food may spend 15 to 48 hours in and out of the rumen being chewed, swallowed, regurgitated and swallowed again and again before it moves on to the second part of the stomach, the reticulum.

RETICULUM: Here the food mixes with the cow's saliva and produces a cud. The reticulum traps anything that the cow should not have eaten, such as pieces of fencing, rocks and pieces of wire. The reticulum also softens the grass that has been eaten and forms small wads of cud.

OMASUM: The omasum squeezes out the water and further breaks down the cud.

ABOMASUM: The abomasum completes the digestion process. It passes essential nutrients to the blood-stream and sends the rest through the intestines.

WHERE DOES YOUR STATE RANK *(Based on a USDA report from January 2018)*

STATE	RANK	TOTAL CATTLE	RANK	BEEF	RANK	DAIRY
TEXAS	1	12,500,000	1	4,460,000	1	8,040,000
NEBRASKA	2	6,800,000	4	1,920,000	2	4,880,000
KANSAS	3	6,300,000	6	1,570,000	3	4,730,000
CALIFORNIA	4	5,200,000	17	655,000	4	4,545,000
OKLAHOMA	5	5,100,000	2	2,095,000	7	3,005,000
MISSOURI	6	4,450,000	3	2,052,000	8	2,398,000
IOWA	7/8	4,000,000	9	965,000	6	3,035,000
SOUTH DAKOTA	7/8	4,000,000	5	1,664,000	9	2,336,000
WISCONSIN	9	3,500,000	29	290,000	5	3,210,000
COLORADO	10	2,850,000	14	805,000	10	2,045,000
MONTANA	11	2,550,000	7	1,486,000	15	1,064,000
IDAHO	12	2,400,000	20	500,000	12	1,900,000
MINNESOTA	13	2,350,000	26	370,000	11	1,980,000
KENTUCKY	14	2,160,000	8	1,023,000	14	1,137,000
NORTH DAKOTA	15	1,860,000	10	954,000	22	906,000
TENNESSEE	16	1,830,000	12	909,000	21	921,000
ARKANSAS	17	1,760,000	11	914,000	23	846,000
FLORIDA	18	1,630,000	13	908,000	28	722,000
PENNSYLVANIA	19	1,620,000	35	185,000	18	1,435,000
NEW MEXICO	20	1,510,000	23	465,000	16	1,045,000
NEW YORK	21/22	1,480,000	39	110,000	13	1,370,000
VIRGINIA	21/22	1,480,000	18	643,000	24	837,000
ALABAMA	23	1,340,000	16	693,000	30	647,000
WYOMING	24	1,320,000	15	714,000	31	606,000
OHIO	25	1,300,000	30	288,000	19	1,012,000
OREGON	26	1,270,000	19	546,000	27	724,000
WASHINGTON	27/28	1,160,000	31	225,000	20	935,000
MICHIGAN	27/28	1,160,000	38	120,000	17	1,040,000
ILLINOIS	29	1,150,000	25	387,000	26	763,000
GEORGIA	30	1,070,000	21	497,000	32	573,000
ARIZONA	31	1,000,000	36	184,000	25	816,000
MISSISSIPPI	32	930,000	22	476,000	34	454,000
INDIANA	33	870,000	33	210,000	29	660,000
LOUISIANA	34	820,000	24	448,000	36	372,000
NORTH CAROLINA	35	810,000	27	370,000	35	440,000
UTAH	36	800,000	28	338,000	33	462,000
NEVADA	37	465,000	32	220,000	38	245,000
WEST VIRGINIA	38	395,000	34	207,000	39	188,000
SOUTH CAROLINA	39	340,000	37	170,000	40	170,000
VERMONT	40	260,000	42	14,000	37	246,000
MARYLAND	41	144,000	41	43,000	41	101,000
HAWAII	42	144,000	40	110,000	44	34,000
MAINE	43	82,000	43	11,000	42	71,000
CONNECTICUT	44	50,000	46/47	5,000	43	45,000
MASSACHUSETTS	45	38,000	45	6,500	46	31,500
NEW HAMPSHIRE	46	37,000	46/47	5,000	45	32,000
NEW JERSEY	47	29,000	44	7,500	47	21,500
DELAWARE	48	17,000	49	2,500	48	14,500
ALASKA	49	14,000	48	4,700	49	9,300
RHODE ISLAND	50	5,000	50	1,400	50	3,600
Totals		**94,350,000**		**31,246,600**		**31,246,600**

There are more than 250 recognized breeds of cattle throughout the world, with more than 80 readily available to producers in the United States.

BEEF HERDS: Beef cattle are raised for meat production (different from dairy cattle, used mostly for milk production). The meat of adult cattle is known as beef. There are three main stages in beef production: cow-calf operations, backgrounding, and feedlot operations.

COW-CALF OPERATIONS: The cow-calf operation is the foundation sector of the beef industry where calves are born and raised up to weaning age. After calves are weaned, at approximately 6 to 8 months old they may be sold to a backgrounding operation. Beef background production is a beef production system that involves maximal use of pasture and forages from the time they are weaned until they are placed in a feedlot.

TOP 5 MOST POPULAR BEEF CATTLE BREEDS

ANGUS The Angus breed was first imported to Victoria, Kansas from Scotland in 1873, and has become the most dominant beef cattle breed in the U.S. The American Angus Association claims that Angus and Angus-cross cattle make up more than 60 percent of our commercial cowherd. To qualify as Certified Angus Beef, animals must meet ten strict requirements, including hide color, marbling, and rib-eye size. The gene that gives the cattle a black coat is dominant, while the gene for the red coat is recessive. Red and Black Angus are considered two different breeds.

HEREFORD Originally imported from Herefordshire, England, in 1817 and spreading with settlers as they fenced off the American West, the Hereford became popular for its early maturity and efficiency. Hereford remained the dominant breed through the 1960s and remains influential in many crossbreeding programs.

BEEF AND DAIRY BREEDS

GELBVIEH ***(pronounced gelbfi):*** The Gelbvieh breed is one of the oldest German cattle breeds, first developed around 1850 in three Franconian districts of Bavaria. After World War II, Germany used a stringent selection program to repopulate its cowherd, using conformation, carcass quality, and milk production in the progeny-testing system. The breed was first imported to the U.S. in 1971 (when U.S. regulations were passed to allow for importation), which has approximately 45,000 active, registered Gelbvieh cows.

LIMOUSIN The Limousin breed is native to the old provinces of Limousin and Marche in central France. French breeders placed a great deal of emphasis on a deep chest, strong topline, well-placed tailhead, and strongly muscled hindquarters. The result was an efficient, hardy, and adaptable animal well suited for meat production. Imported here since 1971, the Limousin breed (muscle and efficiency) has been bred with the Angus breed (marbling and maternal traits) to create the popular Lim-Flex hybrid/cross.

SIMMENTAL Developed in the Swiss Canton of Berne, the Simmental was officially established in 1806 and first imported to the U.S. in 1971. Among all cattle breeds worldwide, this breed is second in numbers only to Brahman. The American Simmental produces the outstanding performance and productivity thanks to expansive within-breed blending.

DAIRY HERDS: Dairy cows may be found either in herds or on dairy farms. Dairy farmers own, manage, care for, and collect milk from them. The United States has 9 million dairy cows in 75,000 herds, with an average herd size of 120 cows. More than 99% of all dairy farms are family owned and operated. Dairy cows provide 90% of the world's milk supply with the best cows producing over 25 gallons of milk each day. That equals about 400 glasses of milk. Cows are milked for an average of 3-4 years. A cow must have a calf in order to produce milk. Calves are fed milk until they are 8-9 weeks old. The average cow is 2 and a half years old when she has her first calf.

TOP 5 MOST POPULAR DAIRY BREEDS

HOLSTEINS The most popular of all the dairy cow breeds, Holsteins are black and white (and sometimes red). Holsteins markings are like human fingerprints: none of them will have the same markings. Holsteins are the most common dairy cow because they tend to produce more milk than all the other breeds.

JERSEYS Jersey cows, named for the British isle of Jersey where they originated, are most often brown or tawny with a light-colored underbelly and dark hooves. Their milk is the richest of all the dairy cows and high in butterfat, making it the ideal milk for the production of butter and cheese.

BEEF AND DAIRY BREEDS

GUERNSEYS Also known as the Royal Breed because of the golden hue of their milk. The golden tone is due to an exceptionally high content of beta carotene, a source of Vitamin A. Guernseys themselves are also a golden color and can have white markings. As their name suggests, Guernseys were originally bred on the British Channel Island of Guernsey.

AYRSHIRES ***(pronounced air-sheer):*** Ayrshires are reddish-brown with many spots. They were first bred in the Scottish County of Ayr and arrived in America in 1822.

BROWN SWISS This breed native to Switzerland is one of the oldest in existence. Their color varies from light-to-dark brown and sometimes gray, but they are easily recognized by their large furry ears. Brown Swiss have a very gentle nature.

Utah State University Cooperative Extension Clell V. Bagley, DVM July 1997

SUDDEN DEATH

CLOSTRIDIAL DISEASES: These diseases include Blackleg, Malignant Edema, Black's Disease, Enterotoxemia and Redwater. All of these are common diseases. The organisms form spores that may survive a long time in hostile environments and yet kill cattle quickly, giving little opportunity for treatment. The vaccines produce good immunity, but most require two doses initially to really be effective. Some producers give only one Blackleg vaccination to calves and have no losses. Because of the sporadic nature of these diseases, this lack of loss is probably due to a lack of exposure rather than a high level of immunity. With the other clostridial vaccines, the second dose is essential for stimulation of protective immunity (there is one designed as a one-dose vaccine).

ANTHRAX: The organism will survive indefinitely in the soil and when conditions are right, multiply and cause a disease outbreak. A vaccine is available, but should only be used when cattle are grazed in known problem areas.

SCOURS

ROTA AND CORONA VIRUS: They usually produce only mild disease signs by themselves, but become more severe when combined with stress or other agents.

A vaccine is available for problem herds. It requires two doses the first year and the last dose should be given at least three weeks prior to the start of calving. It may be used in combination with E. coli.

E. COLI (COLIFORM): A bacterial cause of scours that usually appears in calves under 5 days of age. A common contaminant in manure and may build up to epidemic levels. A vaccine requiring one or two initial doses is available for the cows prior to calving. A monoclonal antibody product is also available for use on calves at birth (by mouth) if a serious outbreak occurs in calves from dams that have not been vaccinated. It will provide some immediate, but short term protection.

PINKEYE

An eye infection due to a specific bacteria, that is commonly carried by many normal cattle. A herd outbreak is often precipitated by eye irritation (dust, sunlight, etc.). The infection is readily spread to other animals by face flies.

Several vaccines are now available. Since the immunity they stimulate is not very long-lasting, these vaccines should be administered in the spring just prior to the fly season. This will provide the greatest protection during summer, the period of greatest exposure.

REPRODUCTIVE DISEASES

IBR: The most common cause of abortion in cattle. All replacements should be vaccinated to protect against it *(see Respiratory Diseases)*. Use the proper vaccine for, or around, pregnant cows.

BVD: May cause early embryonic death, abortion or congenital defects. Vaccinate all replacement animals with a MLV vaccine (two doses preferred) to produce a planned exposure between 6 months of age and breeding *(see Respiratory Diseases)*.

BRUCELLOSIS (BANGS): Many states are free of this disease agent, but vaccination is still recommended (and required for sale) until the threat from other states is further reduced. All heifers 4–12 months of age should be vaccinated by an accredited veterinarian. They must also be ear tagged and tattooed. Many states will not accept animals for breeding purposes unless the tattoo can be identified.

VIBRIOSIS (CAMPYLOBACTER): A common bacterial disease, spread through breeding. It causes early embryonic death so appears as an infertility and results in a prolonged breeding and calving season as well as a reduced calf crop. Two types of vaccine are available. One is in an oil base product to prolong the absorption. Only one dose is required initially. Subsequent boosters given in the fall at pregnancy testing will extend the protection on through the next breeding season.

The other type of vaccine has an aluminum hydroxide or other adjuvant and requires two doses initially. Be sure to give both doses to obtain a protective level of immunity. The annual boosters for this type of vaccine should be given 30 days prior to breeding. This type comes in combination with Lepto and other vaccines and is easier to administer, but it must be used according to directions if it is to be effective.

Bulls infected with vibrio have been cleared by use of two doses (of 5 ml) of the oil base vaccine, 30 days apart. All bulls should be vaccinated and given an annual booster in the fall. All cows in multiple owner herds and in herds adding used cows or bulls should be vaccinated.

LEPTO: May cause abortion and illness. It is very difficult to diagnose. It is spread through urine and water contamination so is a potential threat to almost all cattle. It may also be carried by other species including rodents, dogs, swine and man.

TRICHOMONIASIS: Is a disease that causes early embryonic death. A vaccine is available with an efficacy of about 50%. It should be considered for use in infected herds which are mixed with other during the breeding season. Two doses are required initially. The second (and the annual booster) should be given 30 days prior to the beginning of breeding.

RESPIRATORY DISEASES

IBR (INFECTIOUS BOVINE RHINOTRACHEITIS) (REDNOSE): A viral infection of the upper respiratory tract. It is present in almost all herds, but causes illness in unexposed animals or those with lowered levels of immunity. Many cattle carry the virus and shed it to others during periods of stress. This agent is commonly implicated with bacterial agents in causing shipping fever and other severe cases of pneumonia. *(See also Reproductive Diseases)*

Both MLV (modified live virus) vaccines and killed (or attenuated) products are available. Some are designed for IM (intramuscular) use while others are given IN (intranasally). The killed and intranasal products may be used in, or around, pregnant cows but other vaccines may cause abortions. The IN vaccines will cause some antibody response within three days and may be useful even in the face of an outbreak. Two doses of a killed product must be used to confer protective immunity. All replacement animals should be vaccinated. For intensively managed herds, annual boosters are recommended.

PI3 (PARAINFLUENZA-3): Another viral respiratory agent that causes a relatively mild disease by itself, but a severe problem when combined with a bacterial agent. It is included with most IBR vaccines and can be used on the same schedule.

BVD (BOVINE VIRUS DIARRHEA): A common viral agent, present in almost all herds. It may cause respiratory, digestive tract or reproductive problems. It has a profound detrimental affect on the immune system.

A number of MLV vaccines have been available. Killed vaccines are also available which stimulate a good immune response in adult animals. But, they are apparently not able to protect the fetus. Two doses are required initially. All replacement animals should be vaccinated with an MLV vaccine (perhaps even two doses), after 6 months of age and prior to breeding. (See also Reproductive Diseases).

BRSV (BOVINE RESPIRATORY SYNCYTIAL VIRUS): A relatively recently recognized disease agent, but now identified all across the country in respiratory infections. It is mainly a problem in weaned and feedlot animals (also young dairy stock). Both MLV and killed virus vaccines are available with two initial doses required for both.

PASTEURELLA: A bacteria carried by many normal cattle. It becomes a major cause of severe "shipping fever" pneumonia when combined with stress and a viral agent. Two species are common: P. hemolytica and P. multocida. Vaccines available in the past were poor, with use of a single dose causing more problems than if none were used. Great improvements have been made in recent years and several newer products are available, with more to come. Both one and two dose products are now available. Follow directions carefully for these products to be beneficial. They must usually be given prior to weaning in order to help hold down the occurrence of disease at this critical time.

HAEMOPHILUS SOMMUS: This agent is the other major bacterial agent involved in shipping fever. It also causes "brain fever" in feedlot cattle (also known as TEME: thromboembolic meningioencephalitis). The killed vaccine must be given in two doses initially and should be used prior to weaning for the greatest benefit.

FOOD ANIMAL EDITORIAL CALENDAR

Q1

JANUARY
- Antibiotics
- Lice Control
- Scours (cow)

FEBRUARY
- Antibiotics

MARCH
- Calving (heifer)
- Scours (calf)

Q2

APRIL
- Calving (heifer)
- Scours (calf)
- Pre-Breeding (heifer)
- Deworming

MAY
- Pre-Breeding (cow)
- Deworming

JUNE
- Breeding Season (heifer)
- Turnout
- Deworming
- Implants

Q3

JULY
- Breeding Season (cow)
- Fly Control
- Pinkeye

AUGUST
- Fly Control
- Pinkeye

SEPTEMBER
- Pre-Weaning
- Implants

Q4

OCTOBER
- Antibiotics
- Weaning

NOVEMBER
- Antibiotics
- Weaning

DECEMBER
- Preg Checking
- Lice Control
- Scours (cow)

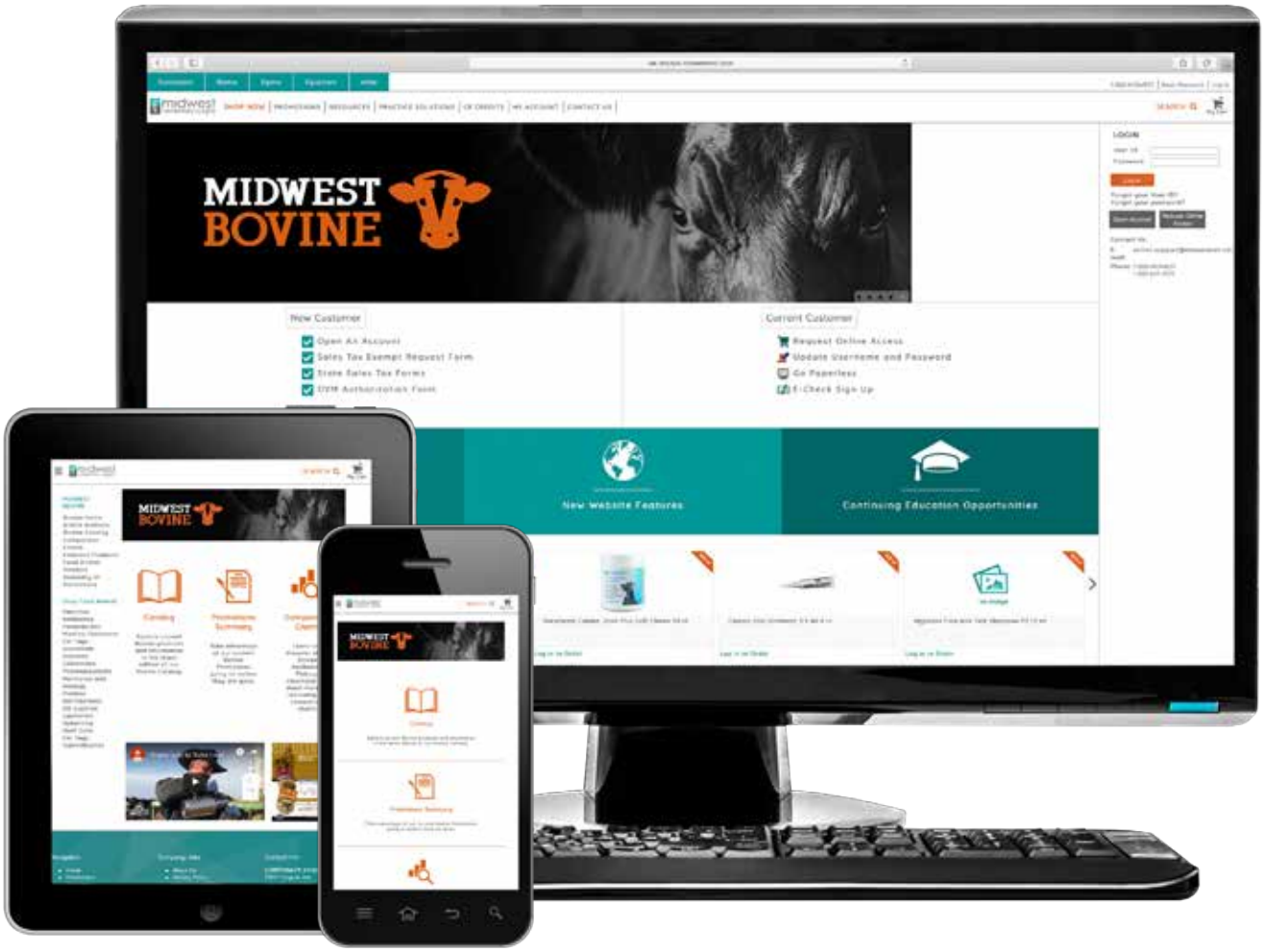
FOOD ANIMAL CALENDAR

Calving *Begins with 2 year old heifers followed by the cows*	Pre-Breeding 1st year heifers *(IBR-BVD, BRSV, PI3, VL5) Clostridial 7 way, and Parasite Control* Bulls receive BSE testing *(IBR-BVD, BRSV, PI3, L5 or VL5) and Parasite Control*	Pre-Breeding Cows *(IBR-BVD, BRSV, PI3, VL5) Clostridial 7 way, and Parasite Control*
Breeding Season *Begins with 1st year heifers followed by the cows*		Calves Turnout / Branding *IBR, BVD, BRSV, PI3 or IBR, PI3 Intranasal, Clostridial 7 way, and Parasite Control* *(Optional-Pasteurlla, Hemophilus Somnus, and Implant)*
		Calves Pre-Weaning *IBR, BVD, BRSV, PI3, Clostridial 7 way, and Parasite Control* *(Optional-Pasteurlla, Hemophilus Somnus, and Implant)* *Bangs (4-8 months replacement heifers calves)*
Calves are Weanded *IBR, BVD, BRSV, PI3, Clostridial 7 way, and Parasite Control* Cows / Coming 2nd year heifers *Preg Check and Pre-Calving L5, Parasite Contorl, Scours* Lice Whole Herd		

NOTES

Coming Soon!

A Brand New midwestvet.net Website!



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