
AGJA Gelbvieh Quiz Bowl Statements

Statement

People and Places

- 1 Wayne Vanderwert is the current Executive Director of the AGA.
- 2 Jennifer Scharpe is the Editor of Gelbvieh World.
- 3 The Director of Administration for the AGA is Dianne Coffman.
- 4 Katie Danneman is the graphic artist and production manager for Gelbvieh World.
- 5 The office of the AGA is located in Westminster, Colorado.
- 6 The following is a list of the current AGA Board of Directors: Rob Arnold, Steve Arp, Jim Beastron, Ken Flikkema, Randy Gallaway, Mark Goes, Jerry Grund, Dick Helms, John Huston, Dave Judd, Al Knapp, Bob Prosser, Brian Schafer, Vaughn Thorstenson, Nancy Wilkinson.
- 7 The current AGA President is Vaughn Thorstenson, Selby, S.D.
- 8 Edd Pritchett of Oklahoma City, Oklahoma is the AGA Legal Counsel.
- 9 The current members of the AGA Executive Committee are: Vaughn Thorstenson, President; Al Knapp, Vice President; Randy Gallaway, Secretary; Jim Beastron, Treasurer; Edd Pritchett, Legal Counsel; Wayne Vanderwert, Executive Director.
- 10 The current AGJA Board of Directors include: Kyle Kendrick, Sydney Wilkinson, Andrew Lindgrin, Nikki Hojer, Tara Krajewski, Keaton Kendrick, Justin Taubenhien, and Zac Butler.
- 11 Kyle Kendrick of Palmyra, Missouri is the current AGJA President.
- 12 The ex-officio for the AGJA Board of Directors is Zac Butler of Tennessee.
- 13 The current Senior Gelbvieh Youth Ambassador is Tahnee Embry of Texas.
- 14 The current Junior Gelbvieh Youth Ambassador is Kyle Vehige of Missouri.
- 15 AGJA advisors are Mike & Toni Shrewsbury, Missouri; Al & Mary Knapp, Kansas; and Dana Stewart, Colorado.
- 16 The Director of Member Services for the AGA is Dana Stewart.
- 17 The AGA Director of Breed Improvement is Susan Willmon.

Trivia

- 18 Hamburger meat from a single steer will make about 720 quarter pound hamburger patties. That's enough for a family of 4 to enjoy hamburgers each day for nearly 6 months.
- 19 *During grazing season, a calf deposits more than 531 pounds of manure. This amount includes over 21 million worm eggs.
- 20 Christopher Columbus was a famous explorer who brought cattle from Spain to the West Indies on his second voyage to America.
- 21 The AGA website address is www.gelbvieh.org.
- 22 Cattle can see colors.

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- 23 Dairy cattle can produce as much as 40 gallons per day of saliva. Saliva serves as an aid in swallowing feed or of a ruminated bolus. It also acts as a buffering agent to control the pH of the rumen.
- 24 A calf is approximately 70% water at birth.
- 25 * Hides are one of the most important by-products of beef. Approximately 144 baseballs or 20 footballs or 18 volleyballs or 18 soccer balls or 12 baseball gloves, or 12 basketballs can be made from the hide of one cow.
- 26 Romans were the first known persons to brand cattle.
- 27 Hamburger got its name from Hamburg, Germany and was brought to the U.S. by German immigrants in the 1800's.
- 28 The average American eats 114 burgers each year.
- 29 The biggest burger in the world weighed 6,040 pounds and was cooked in Montana.
- 30 One gallon of milk weighs 8.6 pounds.
- 31 On average, a dairy cow produces 90 glasses of milk daily, depending on genetics, feeding practices, and weather.
- 32 Scientists in Japan have extracted gasoline from cattle manure. The process yields 0.042 ounces of gasoline from 100 grams or .05 ounces of manure.
- 33 The average cow has more than 40,000 jaw movements per day.
- 34 The U.S. nickname Uncle Sam is actually related to the beef industry. During the War of 1812, a meat packer from New York named Sam Wilson, was jokingly called "Uncle Sam" by his employees. This was in reference to the "U.S." or the United States that was stamped on the containers of meat that he delivered to the armed services.

Statistics

- 35 In July 2003, there were 104.3 million cattle in the United States.
- 36 Beef is the number one protein in America according to USDA consumption data. In 2002, the average per capita consumption of beef was 64.4 pounds according to USDA consumption data.
- 37 Steak is the single most popular beef dish in-home, eaten more than once a month by the average person. Hamburger is the second most popular in-home item (8.9 percent of all eating occasions) - NPD/National Eating Trends, 2002.
- 38 The cattle industry is a family business. Eighty percent of the cattle businesses have been in the same families for more than 25 years; 10 percent for more than 100 years.
- 39 There are 1.4 million jobs attributed to the beef industry.
- 40 While the United States has less than 10 percent of the world's cattle inventory, it produces nearly 25 percent of the world's beef supply according to 2002 USDA data.
- 41 Traditionally, the two largest dairy states are Wisconsin and California.
- 42 The beef industry is the single largest segment of American agriculture, which is the nation's largest industry.
- 43 The two largest (based on circulation) beef magazines in the United States are: Beef and Drivers.
- 44 The regions or states that have Gelbvieh associations as of May 2009 are Alabama, Arkansas, Colorado, Four State, Georgia, Heart of America, Indiana, Iowa, Kansas, Kentucky, Louisiana, Minnesota, Mississippi, Montana, Nebraska, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Utah/Idaho, South Carolina, South Dakota, Southeastern, Tennessee, Texas Virginia, and West Virginia. Wisconsin/Illinois,

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- 45 After the December 23, 2003 discovery of a BSE infected cow, \$4.8 billion worth of U.S. beef and beef exports were banned.
- 46 In the U.S., 85% of the nation's grazing lands are not suitable for farming.
- 47 The number of producers with fewer than 100 beef cows decreased by 2.8% between 1992 and 1997.
- 48 As of May 2009, the top ten states for AGA (adult) memberships were: Missouri, Kansas, Kentucky, Iowa, Colorado, Nebraska, South Dakota, Tennessee, Minnesota, & Oklahoma.
- 49 As of May 2009, the top ten states for AGJA memberships were: Missouri, Iowa, Kansas, Kansas, Kentucky, Nebraska, South Dakota, Colorado, Illinois, Oklahoma, North Carolina.
- 50 As of May 2009, the top five states of AGA active cows are: Kansas (5012), South Dakota (4948), Missouri (4363), Nebraska (3406), North Dakota (2256).
- 51 The top five states for total registrations for the 2007-2008 fiscal year are: Kansas (4105), South Dakota (3795), Missouri (3692), Nebraska (3408), North Dakota (1966).
- 52 There were 35,231 Gelbvieh, Balancer and hybrid cattle registered in the 2007-2008 fiscal year.
- 53 There were 11,944 Gelbvieh, Balancer and hybrid registrations sent to the AGA for transfer of ownership in the 2007-2008 fiscal year.
- 54 Most typically the top five states for grazing stocker cattle (cattle being grazed prior to entering a feedlot) are Kansas, Texas, Oklahoma, Nebraska and South Dakota.
- 55 Barely 3% of the U.S. population is counted as farmers and ranchers, however, total jobs related to food production account for 17.4% of workers and 16.3% of our gross domestic product.
- 56 Cattle numbers in the U.S. peaked in 1975 at 132 million head.
- 57 The Holstein breed has the largest number of registered cattle in the United States.
- 58 JBOB Carolina Fortune was the most used black bull for 2008-born calves recorded with the AGA.
- 59 RID Collateral 2R was the most used red bull for 2008-born calves recorded with the AGA.
- 60 Agriculture and related industries are the largest private employer in the U.S. and cattle production in the largest segment of agriculture. Cattle production involves about 1.1 million family farms and ranches.

AGA Policy

- 62 Regarding Arthrogyrosis Multiplex (AM), all cattle born on or after January 1, 2011 with one or more AM-Carrier, AM-50 or AM-25 parents will be required to be DNA tested and the test result will be reflected as the genotype designation in their record and on all documentation.
- 63 All cattle born on or after January 1, 2010 with an AM-Carrier or an AM-50 sire and/or an AM-Carrier dam will be required to be DNA tested and the test result will be reflected as the genotype designation in their record and on all documentation.
- 64 Arthrogyrosis Multiplex (AM), all cattle born on or after January 1, 2012 with one or more AM-Carrier, AM-50 or AM-25 parents will be required to be DNA tested and test AM-Free to be eligible for registration.
- 65 The AGA Board of Directors policy on Arthrogyrosis Multiplex (AM) designates INFERRED genotype designations:
The first, AM-50, is designated on cattle that have one or more AM-Carrier parents or more than one AM-Carrier grandparent. The second, AM-25, is designated on cattle having one AM-Carrier grandparent.

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- 66 The AGA Board of Directors policy on AM designates ACTUAL genotype designations: AM-Free means that the suspect animal is free or clean of the gene by DNA test. AM-Carrier means an animal that is determined to be a carrier by DNA test or is a confirmed parent of an afflicted progeny. AM-Afflicted is a designation for an animal, entered in the AGA Herdbook for parentage and official record reasons, reported to the AGA, confirmed to be a "Curly Calf" and parent verified. Parents would receive the AM-Carrier designation.
- 67 Any abnormalities in Gelbvieh cattle should be reported to the AGA using an Abnormal Calf Report.
- 68 If a breeder changes the name on an animal, the herd prefix does not and cannot be changed; it never does. After progeny has been recorded, you cannot change the animal's name.
- 69 When submitting calving information to the AGA, 4 requirements must be met to place calves in the same contemporary group. These are: birth within 90 days, same sex, same user-defined contemporary group code, and sent in the same envelope or HerdTrack file.
- 70 When you sell an embryo you must complete a special form called the Embryo Transfer Form.
- 71 Information like birth weight, weaning weight, yearling weight and other information on cattle is submitted to the AGA to be processed. This data is then available for computing the Gelbvieh National Cattle Evaluation (NCE). The NCE produces EPDs on Gelbvieh cattle twice per year.
- 72 The American Gelbvieh Association allows only replication cell-cloned animals to be eligible for registration.
- 73 The cell-donor animal must have a DNA type on record with the official DNA testing lab of the AGA prior to harvest of genetic material.
- 74 The International Year Code system uses letters of the alphabet to indicate the year of an animal's birth. The letters I, O, Q, and V are omitted from the system.
- 75 The International Year Codes for this year and the next three years are as follows: 2009 – W, 2010 -- X, 2011 -- Y, 2012 -- Z.
- 76 The Sire Summary for the Gelbvieh breed is published annually. You may request a printed copy from the AGA or view it online at www.gelbvieh.org.
- 77 Herd Assessments are paid annually by Gelbvieh breeders on breeding age females (one year or older as of January 1). These assessments are due in the AGA office April 15th of each year.
- 78 If a member wants to verify the parentage of an animal, he can request a DNA Test Form by calling the AGA office. The breeder is responsible for the lab fee.
- 79 The AGA considers females with at least 7/8 (88%) Gelbvieh blood to be purebred.
- 80 The AGA considers bulls with at least 7/8 (88%) Gelbvieh blood to be purebred.
- 81 As a part of the AGA's total herd reporting system it is important that members report every calf, even if it didn't survive, so the dam's Lifetime Cow Summary will be complete and give the true picture of the dam's reproductive history. The calf's sex and date of birth must be reported.
- 82 * AGA will allow computation of calves out of registered Gelbvieh females and non-Gelbvieh or non-registered Gelbvieh sires.
- 83 A.I. sires must be DNA typed, parent verified, and tested for Arthrogyrosis Multiplex (AM), and have an A.I. Permit before any offspring can be registered or computed, even if the A.I. Sire is used only within the owner's herd.
- 84 Balancer is a registered trademark of the AGA that describes a registered hybrid composed of Gelbvieh genetics with Angus or Red Angus genetics.
- 85 * The AGA adopted a mandatory Total Herd Reporting system in 2000. This system requires that all cows either record a calf or report a reproductive status code to the AGA each year. This applies to all AGA members.

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- 86 The Dam of Merit honors cows that have produced at least three calves with all weaning information reported to the AGA. A Dam of Distinction has met the same requirements but has produced eight calves or more. Furthermore, to be honored she must possess a minimum average weaning weight ratio for all calves of 101.
- 87 * The AGA changed its calculation of percent Gelbvieh in 2002 to more accurately track actual percent Gelbvieh in an animal. An 88% purebred female contributes 44% to its offspring under the new calculation instead of 50% like in the past.

AGA Fees

- 88 When work is sent to AGA it must be accompanied by the correct fees. If a balance owed is greater than \$10.00 the processed work won't be sent out until the balance is paid.
- 89 The AGA has two payment plans for Gelbvieh herd assessments: One Rate (\$18.00 per breeding age female) or Traditional (\$12.50 per breeding age female).
- 90 The traditional registration fee for a domestic Gelbvieh animal is the lowest when registered before 240 days of age.
- 91 Traditional registration fees with the AGA are the lowest when registered at 0-240 days of age and highest at over 365 days of age.
- 92 * If a member, paying under the Traditional fee system, transfers ownership by submitting information to the AGA within 45 days of the date of sale, the transfer fee will be \$7.50. If over 45 days the fee is \$15.00. If a One-Rate member transfers an animal within 45 days of the sale, it takes one transfer credit from the member's account. If it is past 45 days from the sale, then it is one transfer credit, plus a \$7.50 late fee.
- 93 AGA transaction fees are more expensive for non-members as compared to members.
- 94 A one-year subscription for Gelbvieh World is \$35.00.
- 95 The AGA is on a cash basis, therefore you must send money in with work to be processed and mailed out. The other option is to provide a credit card number with your work sent to the AGA office.
- 97 Calves out of dams that are not registered with the American Gelbvieh Association (foundation, Angus, Red Angus, etc.) will be charged a \$12.50 herd assessment fee for traditional members. One rate users will be charged a credit or \$18.00 if no more credits exist.

AGA Registration

- 98 A member can request a duplicate copy of a registration certificate from the AGA if the original has been lost at a cost of \$2.50.
- 99 The AGA defines a breeder as the owner of the dam at the time of conception of the animal being registered.
- 100 To get a registration certificate on a Gelbvieh bull, the weaning and yearling data must be recorded.
- 101 A member can change an animal's name if the animal has no registered offspring. The fee for a name change is \$2.50 for a member.
- 102 When registering cell-cloned animals, the suffix "ETN" shall be added to the names of offspring resulting from cloning or other advanced reproductive technology.
- 103 * A Balancer is a registered animal with two registered parents and has 25-75 percent Gelbvieh and 25-75 percent Angus or Red Angus with only 1/8 of a Balancer's breed makeup being another breed or unknown.
- 104 HerdTrack is the computer software program available to Gelbvieh breeders to keep track of animal records and exchange data electronically with the AGA.

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- 105 In order to change the name of an animal you have purchased you will need to get the permission of the person who registered it.
- 106 The AGA's cattle management software, HerdTrack, provides producers the means to submit registration data electronically giving users a faster turn-around time.
- 107 *Gelbvieh or Balancer animals do not receive a registration certificate until weaning weights and weaning dates are recorded for heifers or weaning and yearling weights for bulls. Breeders can register calves at anytime prior to submitting all required data, but will receive a performance pedigree. Once required weights are processed at the AGA, a registration certificate is issued.
- 108 *On the back of Performance Pedigrees is a transfer form that can be used as an affidavit to transfer ownership. Ownership can be transferred at anytime.

AGA Membership

- 109 A herd prefix is a breeder's choice of 3 or 4 letters used to tattoo animals produced in his operation.
- 110 To be considered an active AGA member, you must pay two items annually: your dues and your herd assessments. Lifetime AGA members don't pay dues each year, but must pay herd assessments to be active.
- 111 The American Gelbvieh Junior Association membership fee is \$20.00 for the first year of membership, and includes \$10.00 Annual dues.
- 112 The age requirement for membership in the AGJA is birth through 21, as of January 1, of the current year.
- 113 In order to show cattle at an AGJA-sponsored regional or national show, a member must be 8 years old by January 1 of that year.
- 114 An AGA membership fee is \$75.00 for the first year, and \$75 annually. This fee includes a subscription to the Gelbvieh World.

Organizations

- 115 MARC stands for Meat Animal Research Center.
- 116 USDA refers to the United States Department of Agriculture.
- 117 NCBA stands for National Cattlemen's Beef Association and it is a member organization representing U.S. beef producers.
- 118 *The Cattlemen's Beef Promotion & Research Board funded a "muscle profiling" study that catalogued 39 traditionally underutilized chuck and round muscles. This research increased the value of chucks and rounds to beef processors.
- 119 The proceeds from the \$1.00 per head Beef Check-off is used for beef promotion, research, consumer and industry information. These funds are administered by the Cattlemen's Beef Promotion & Research Board and the state beef councils.
- 120 The President of the National Cattlemen's Beef Association is Gary Voogt of Michigan.
- 121 The U.S. Secretary of Agriculture is Tom Vilsack
- 122 R-CALF stands for the Ranchers and Cattlemen's Action Legal Fund. The chief executive officer is Bill Bullard. The national R-CALF headquarters is in Billings, Montana.
- 123 YBIC stands for the Youth Beef Industry Congress.
- 124 In 2004, Gelbvieh Profit Partners LLC, was established. Gelbvieh Profit Partners was established to bid on and purchase Gelbvieh-influenced feeder cattle. It is a for-profit company. Slim Cook is the Profit Partners Operating Manager.
- 125 BIF stands for Beef Improvement Federation and was chartered in 1968.

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- 126 The primary purpose of the BIF is to develop procedures for evaluating breeding value of beef animals.
- 127 Cattle-Fax, located in Centennial, Colorado, is a market reporting organization that supplies information on market outlook and market inventory.
- 128 The Federal Meat Grading Service was established in 1925.
- 129 APHIS is the Animal and Plant Health Inspection Service.
- 130 The headquarters for the National Cattleman's Beef Association (NCBA) is in Centennial, Colorado.
- 131 Kristy Lage of Arthur, Neb., is the President of the American National CattleWomen's Association.
- 132 The National Beef Cook-off is sponsored by the American National CattleWomen's Association. 2009 will mark the 31st year for the contest.
- 133 NCBA-PAC is the abbreviation for National Cattlemen's Beef Association - Political Action Committee and is the cattlemen's voice in Washington, D.C.
- 134 NAFTA stands for the North American Free Trade Agreement. It provides the U.S. beef industry an opportunity to remove Mexican tariffs and recapture the growing U.S. beef export market in Mexico.
- 135 CDC (Centers for Disease Control and Prevention), a federal agency headquartered in Atlanta, Georgia, plays a critical role in investigating and controlling disease outbreaks at home and abroad.
- 136 The Beef Quality Assurance (BQA) program was created to bring beef producers together to produce safe, wholesome beef that provides a great beef experience every time. BQA recommends management guidelines to produce healthier beef products.
- 137 The World Health Organization (WHO), the United Nations specialized agency for health, was established in 1948 to promote the highest possible level of health (physical, mental, and social well-being) to all people. WHO is governed by 192 Member States through the World Health Assembly.
- 138 The U.S. Meat Export Federation (USMEF) works to create new opportunities and develop existing international markets for U.S. beef, pork, and lamb.
- 139 The Gelbvieh World magazine is a member of LPC, Livestock Publications Council.

Food Safety

- 140 Hazardous Analysis Critical Control Points (HACCP) was originally established in 1959 to ensure the safety of food for the astronauts in the NASA program.
- 141 *The seven principles of the Hazardous Analysis Critical Control Points (HACCP) are: to conduct a hazard analysis, identify critical control points, establish critical limits, monitor the critical control points, determine appropriate corrective actions, establish verification procedures to ensure that the system works, and maintain accurate record keeping.
- 142 Irradiation is the process of exposing food to a controlled amount of radiant energy to kill harmful bacteria, parasites, insects, and fungi. Irradiation increases shelf life, reduces spoilage, and removes insects from fruit.
- 143 The "Fight Bac!" campaign has four simple steps to food safety. 1. Wash hand and surfaces often. 2. Don't cross contaminate 3. Cook to proper temperatures. 4. Refrigerate promptly.
- 144 * Irradiation was approved for use on beef products in 1997. Irradiation has proven effective in killing e-coli bacteria and other harmful pathogens in ground beef.
- 145 The three keys to eliminating the majority of food borne illnesses are: proper handling, storage and preparation.

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- 146 Bacteria multiply rapidly at room temperature. Most food borne illness-causing bacteria do not grow well at refrigerator temperatures (below 40 degrees F).
- 147 According to the Centers for Disease Control and Prevention (CDC) the incidence of bacteria on meat and poultry products decreased significantly. The incidence of E. coli O157:H7 in ground beef samples tested by USDA declined 80% since 1999 and the incidence of Salmonella in ground beef declined 75% since 1998. The incidence of Listeria monocytogenes on ready-to-eat meat and poultry has declined from 4.5% in 1990 to 0.55% in 2004.

Animal Health

- 148 According to the Centers for Disease Control, Swine influenza viruses are not spread by food. You cannot get swine influenza from eating pork or pork products. Eating properly handled and cooked pork products is safe. In addition, the CDC has found NO EVIDENCE to indicate that any of the illnesses resulted from contact with pigs.
- 149 The term "scour" means persistent diarrhea.
- 150 The disorder characterized by gas distention of the rumen as seen on an animal's left side is bloat.
- 151 The condition "founder" is caused by an animal eating too much grain.
- 152 * Bangs is the term cattlemen use for the disease Brucella abortus or brucellosis.
- 153 Both bulls and heifers need to be vaccinated for blackleg.
- 154 Diarrhea, or scours, is often caused by E coli bacteria.
- 155 Bovine Viral Diarrhea is abbreviated BVD.
- 156 *Persistently Infected (PI-BVD) cases can be identified through a diagnostic procedure that came online in 1999 after University of Nebraska pathologists discovered that PI animals could be detected via a skin sample taken from a calf's ear soon after birth. Using immunohistochemistry (IHC) testing, the "ear notch" procedure is now a standard for PI-BVD diagnosis.
- 157 ** The bacteria, clostridium chauvei, causes blackleg.
- 158 * Overeating disease is more properly known as Enterotoxemia.
- 159 The mineral most often linked to grass tetany is Magnesium.
- 159 * Infectious Bovine Rhinotracheitis is abbreviated IBR.
- 160 * Brucellosis, anaplasmosis, leptospirosis, BVD, IBR, and vibriosis can cause abortion in cattle.
- 161 The common name for IBR is red nose.
- 162 Ringworm is caused by a fungus and is transmittable from cattle to humans.
- 163 Lockjaw is the common name for tetanus.
- 164 Grubs are larvae of heel fly.
- 165 The average rectal temperature of beef cattle is 101.0-101.8 degrees F.
- 166 * "White Muscle Disease" is caused by a deficiency of vitamin E, selenium, or both.
- 167 * As a rule, cows that have retained placentas at calving also have more breeding problems.
- 168 ** Pinkeye is the common name for the disease "infectious bovine keratoconjunctivitis".
- 169 Warts are contagious to other calves.
- 170 * Most pieces of hardware ingested by cattle settle in the reticulum or second stomach.
- 171 Overeating, drinking too much milk, bacterial infection or viral infection are reasons for scours in calves.

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- 172 Mastitis is the broad name used to describe udder infections or disease.
- 173 Within the first 30-60 minutes after calves are born they should receive colostrum.
- 174 Scours and respiratory pneumonia are the two diseases that cause the greatest loss in young calves.
- 175 After the first 12 hours of life, a calf cannot absorb sufficient antibodies due to rapid changes in the digestive system.
- 176 When a cow is made to swallow a magnet, she is being treated for hardware disease. Hardware disease is when a beef animal swallows an item such as wire, nails, or other iron objects potentially causing injury to internal organs.
- 177 White blood cells help protect the body from disease and infection.
- 178 * Cows and heifers should be vaccinated for BVD at least 30-60 days before breeding.
- 179 * Scours in calves causes rapid dehydration, loss of essential body chemicals and the build-up of acid.
- 180 * Blue tongue is the viral disease that infects cells lining the blood vessels in the muzzle, lips, tongue, feet and skin, causing swelling and inflammation. BTV infection occurs in both wild and domestic ruminants/camelids from the bite of the vector midge of the genus *Culicoides*. The *Culicoides* vector infects most species during mid-summer to early fall when it is most active. The virus can also be transmitted sexually in infected semen and transplacentally from dam to offspring. Transmission via embryo transfer may also be a concern if the embryo is not washed at least ten times.
- 181 The best age to dehorn a calf is from one day to 3 months.
- 182 * The three ways to diminish tissue blemishes resulting from intramuscular (IM) injections, especially clostridial 7-way vaccine are: 1) administer all clostridial bacterins subcutaneously in the neck region, 2) avoid repeat injections of clostridial bacterins, especially late in the feeding period, 3) avoid intramuscular injections of all injectable products whenever other "labeled" routes of administration are available.
- 183 Heifers should be vaccinated for Brucellosis between 4-10 months of age and are given permanent identification with a official Brucellosis eartag and ear tattoo.
- 184 A producer can improve injection-site quality by administering products in the neck or shoulder region, avoiding IM injections whenever other labeled routes are available. Products approved for subcutaneous injections should be administered using the tent technique. The tent technique requires pinching the hide, forming a tent and injecting in the area the lies between the skin and muscle.
- 185 Minimum biosecurity measures include having visitors' livestock areas, pens, and barns unless it is necessary, parking vehicles on paved or concreted area away from production sites to avoid contact with dirt, mud, or manure, and to wash hands with soap and water or antibacterial gel before entering and after leaving the premises to avoid transmitting disease agents from person to person.
- 186 Symptoms of serious diseases include sudden, unexplained death loss in the herd or flock, severe illness affecting a high percentage of animals, or large numbers of animals suddenly going off feed.
- 187 *Chronic Wasting Disease (CWD) is a brain disorder that kills deer and elk. CWD is one of several types of Transmissible Spongiform Encephalopathies (TSE). These slow-acting degenerative diseases attack the central nervous system, causing brain damage and death. Symptoms include loss of hair, coordination, appetite and weight, listlessness, excessive salivation and urination, blank stare, paralysis and death. CWD is always fatal and it has not been determined that CWD can pass from wildlife to cattle.

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- 188 *West Nile Virus is spread by the bite of an infected mosquito. The virus affects the central nervous system and swelling of brain tissue. The virus can result in severe or fatal illness. West Nile has been shown to infect horses, cats, bats, chipmunks, skunks, squirrels, and domestic rabbits. The virus can be transmitted to humans causing illness and even death. There is no evidence that the virus can be spread from person to person or from animal to person. Thus far, West Nile virus has not affected cattle.
- 189 *Johne's Disease comes from bacteria that infect the intestine, which leads to prolonged diarrhea, poor digestion, and excessive weight loss. Typically found in calves, but doesn't become prevalent until cattle are 2-5 years of age. Johne's can spread through an entire herd. There isn't a cure for the disease, but there are fecal culture and blood serum antibody tests available to producers.
- 190 Foot rot occurs mostly with adult cattle and becomes more prevalent during wet summer and fall months. Bacteria gain entrance through lesions on the lower part of the foot enters the lower part of the foot. Wet manure and mud can soften the skin between the dewclaws and permit infection. Symptoms include lameness and a moderate fever. Treated animals should be kept on a dry surface until recovered.
- 191 Bloat is a form of severe indigestion marked by a collection of gas in the rumen that the animal is unable to expel. Visual signs of bloated cattle include distension of the left side of the animal; discomfort as indicated by stomping of feet or kicking of belly, labored breathing, frequent urination and defecation, and sudden collapse.
- 192 Grass Tetany is a disease of cattle and sheep, caused by a mineral imbalance (magnesium) while grazing lush pasture. Also known as wheat pasture poisoning, symptoms include uncoordinated gait, convulsions, coma, or death.

Reproduction

- 193 A cow is "bulling" when she tries to ride other cows or stands while cows try to ride her.
- 194 Estrus or heat is the period of mating activity in the heifer or cow.
- 195 Another term for estrus is "heat".
- 196 A cow in continuous heat due to cystic ovaries or other defects caused by hormonal imbalance is referred to as a "buller".
- 197 Estrous synchronization is the use of hormones to cause a group of cows to come into heat or estrus at the same time.
- 198 Synthetic prostaglandin (lutalyse) products can be used for heat synchronization or inducing abortion in beef cattle if they are pregnant.
- 199 Estrous synchronization with prostaglandin works only in cycling cows.
- 200 If you have an outstanding female and you want to have a herd like her as quickly as possible, you could use embryo transfer.
- 201 A donor cow provides the embryo for embryo transfers. Donors are typically flushed on Day 7 of a pregnancy.
- 202 A recipient cow receives an embryo and carries it through its development until the calf is born. A recipient cow will typically gestate an embryo transfer calf seven days less than average.
- 203 To artificially inseminate (A.I.) a female you need the following equipment: A.I. gun, semen, shoulder-length gloves, semen straw cutter, thermometer, thaw box or thermos with warm water, tweezers, paper towels, and lubricant.
- 204 Liquid Nitrogen is used in semen tanks to keep the semen frozen.
- 205 Semen tanks should be stored in a well-ventilated, but protected area to keep the tank dry and out of the sun. It's best to keep the tank on a pallet or on boards to keep it off the ground to prevent rust and corrosion.

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- 206 *University of Arizona – Tucson has developed a test to identify higher fertility bulls. This test identifies a unique protein marker in bovine semen called Fertility Associated Antigen (FAA).
- 207 Most Gelbvieh heifers are ready to breed between the ages of 12-14 months.
- 208 A barren cow is a sterile female.
- 209 An open cow should come into heat every 18-21 days.
- 210 The time span that a cow will accept a bull's services is approximately 6-14 hours.
- 211 When a breeder says a cow is "heavy" he means she is in the last trimester of her pregnancy.
- 212 A breeding soundness exam can be used to check a bull's live sperm count, motility, and sperm abnormalities as well as a bull's scrotal circumference and parts of the reproductive tract.
- 213 A mature bull can safely breed 25-35 cows. A yearling bull should be limited to 15-25 cows.
- 214 Cryptorchid refers to male cattle with one or both testicles undescended.
- 215 When a vet says a cow is "safe-in-calf" it means she is pregnant.
- 216 Gestation length is defined as the period a female carries her calf in utero or the duration of pregnancy. Most exotic breeds have an average gestation length of approximately 287 days.
- 217 The sperm that fertilizes an ovum determines the sex of a calf through the contribution of an X or Y chromosome. A female has two X chromosomes, while a male has an X and a Y chromosome.
- 218 The sire determines the sex of the calf.
- 219 Chromosomes are present in the nucleus of each body cell and carry the hereditary material called genes.
- 220 All inherited characteristics are contained in the fertilized egg (embryo).
- 221 Relaxin is the hormone that acts to widen the birth canal before parturition.
- 222 ** Fimbria (infundibulum) is the thin membranous structure at the end of the oviduct, which partially covers the ovary.
- 223 A follicle is a structure on the ovary that is the source of the egg at ovulation.
- 224 The major function of the scrotum of a bull is to regulate temperature of the gonads or testicles.
- 225 First calf heifers generally have more difficulty calving than mature cows.
- 226 Testosterone is the hormone responsible for male behavior and sex drive.
- 227 Gomer is the term used for a bull that is used to detect heat but is incapable of settling cows.
- 228 Pelvic size and size of calf are primary factors that affect how easily a female calves.
- 229 Underfeeding heifers during their first year of life will delay their first breeding.
- 230 * Selecting bulls with high calving ease & low birth weight EPDs for use as sires can reduce calving difficulty in heifers.
- 231 * About 12 hours after the end of standing heat ovulation occurs.
- 232 * Fertilization usually occurs in the oviduct of the cow's reproductive tract.
- 233 Parturition is the process of giving birth.

Animal Science

- 234 *Neuropathic Hydrocephalus (NH) is a lethal genetic defect. NH calves are born near term and have 25-35 pound birth weights. The cranium is markedly enlarged (volleyball to basketball sized). The bones of the skull are malformed and appear as loosely organized bony plates that fall apart when the cavity is opened. The cranial cavity is filled with fluid and no recognizable brain tissue is evident. The spinal canal is also dilated and no observable spinal tissue is found.

Statement

- 235 Arthrogyposis Multiplex (AM) is a lethal genetic defect that results in small, thin calves, born dead, with a twisted spine and often rigid hind limbs. The genetic disorder, also referred to as Curly Calf Syndrome, is inherited as a simple recessive trait. Thus, for a calf to be born with the abnormality, both parents must be carriers AND both parents must pass the gene to the calf.
- 236 *In mapping the bovine genome, researchers used the complete sequence of genomes from a single Hereford cow and comparative genome sequences for six more breeds to complete their project. It has been estimated that the genome contains approximately 22,000 genes and 2.8 billion nucleotides.
- 237 *Recently in 2009, in a project that took over six years, involving more than 300 scientists from 25 countries, an annotated sequence of the cattle genome was developed for the first time.
- 238 *Tibial Hemimelia, known as TH, and Pulmonary Hypoplasia with Anasarca, known as PHA, are genetic defects. TH is found primarily in cattle of Shorthorn origin. However Maine Anjou, Chianina and Simmental populations have individuals which can pass this gene on to their progeny. The TH gene is always lethal in the homozygous state. The gene for PHA also causes death in the homozygous genotype, but is found in far fewer individuals mainly in these same open populations.
- 239 *Syndactyly (Mule Foot) is a genetic defect that results in the toes of hoof being fused together. Can range from one hoof to all four hooves affected.
- 240 *Osteopetrosis (Marble Bone Disease) is a genetic defect resulting in calves born 10-30 days premature. Typically calves are born dead, but if born alive will die within 24 hours after birth. Calves possess a short lower jaw and impacted molars. Long bones are fragile and can be broken with ease.
- 241 *Hypotrichosis (Hairlessness) is a non-lethal genetic defect resulting in partial to almost complete lack of hair. Affected calves are often born with very short, fine, kinky hair that falls out leaving bare spots or areas particularly susceptible to rubbing.
- 242 To date, the Gelbvieh breed is has no known Genetic defects.
- 243 * Cortisone, a drug used to relieve pain in humans, is made from the gallbladder of a cow.
- 244 * Growth hormone is technically called somatotrophin.
- 245 * Growth hormone is secreted from the anterior pituitary gland.
- 246 A gene is a biological unit of heredity contained in a chromosome, which controls the inheritance of one or more characteristics. Simply stated, it's the unit of heredity.
- 247 Genetics is the name for the study of the laws of inheritance.
- 248 Heritability is defined as the portion of the phenotypic differences that is due to genetic variation. For a trait that is 40 percent heritable, 40 percent of the variation in the contemporary group is due to genetics and 60 percent is due to environment.
- 249 Heritability is the portion of the phenotypic differences between animals that is due to heredity.
- 250 Cattle cells contain 30 chromosome pairs.
- 251 Birth weights in cattle are moderately to highly heritable.
- 252 An animal is said to be heterozygous for a trait if it carries only one gene for that trait.
- 253 * Some traits in beef cattle are more heritable than others. For example, most growth traits are moderately heritable. Most reproductive traits are lowly heritable because environmental factors play more important role in the expression of the trait than does genetics. Carcass traits are highly heritable.
- 254 *In January 2005, MMI Genomics launched a DNA test for determining homozygous polled. The test is called Tru-Polled and requires a blot of blood from the animal's ear for analysis. The test has a 95% accuracy.
- 255 Blood typing or DNA fingerprinting is used to verify parentage.

Statement

- 256 * BSE stands for bovine spongiform encephalopathy. Its more common name is Mad Cow Disease. BSE dramatically affected the beef industries in Europe, Japan, Canada, and the United States in recent years.
- 257 Genotype is the genetic make-up of an animal.
- 258 Phenotype is the physical appearance of an animal due to genetic and environmental influences.
- 259 Double muscle is the common name for genetic muscular hypertrophy in beef cattle.
- 260 Stomach or intestinal worms can be controlled by medicating an animal's feed.
- 261 Sanitation is the best prevention for flies.
- 262 Grubs are small legless insects that begin as eggs on a calf's leg, move through his body and out his back.
- 263 Lice and flies are the most common external parasites in cattle.
- 264 Late winter or early spring is the best time for lice control.
- 265 The face fly causes economic losses by transmitting pinkeye.
- 266 The immature or larval stage of a fly is a maggot.
- 267 Horn flies affect beef cattle by sucking their blood.
- 268 Face flies and horn flies develop as maggots in freshly deposited cattle manure.
- 269 Lice can cause anemia in cattle by sucking blood out of the animal.
- 270 Warts are caused by a virus.
- 271 The hormone oxytocin primarily causes milk let down.
- 272 * Pheromones are any chemical communication between individuals.
- 273 When a cow is frightened the hormone Epinephrine (adrenaline) is likely to be secreted.
- 274 FMD stands for Foot and Mouth Disease, a highly contagious disease that causes blisters on the feet and muzzle of cloven-hoofed animals.
- 275 Leptin is a protein produced by fat tissue that research links to an animals feed intake, energy metabolism and rate of fat deposition. A higher level of leptin generally means the animal possesses a greater quantity of fat and marbling.

DNA Testing

- 276 DNA tenderness/marbling tests are performed by Pfizer Animal Genetics (formerly Bovigen Solutions), Genetic Visions Inc., Merial Animal Health, and MMI Genomics Inc.
- 277 DNA fingerprinting is a new method of individual identification and parentage verification. The AGA switched to DNA testing for parent verification beginning July 1, 2002.
- 278 *Calpain is a naturally occurring enzyme that contributes a role in beef tenderness by weakening muscle fibers postmortem (after death).
- 279 *Calpastatin blocks calpain and the role it plays in postmortem tenderization.
- 280 Current DNA tenderness tests, check for the presence of calpastatin and calpain.
- 281 In April 2005, the AGA Board of Directors voted to test the top 25 A.I. Gelbvieh sires for available DNA tenderness markers.
- 282 Merial/Igenity's DNA profile includes tests for coat color, carcass traits, stayability, heifer pregnancy, and docility.
- 283 Pfizer Animal Genetics purchased Bovigen in 2008. DNA tests for quality grade, tenderness, and feed efficiency are marketed under the company's GeneSTAR MVP brand. GeneSTAR MVP stands for molecular breeding value.

Statement

- 284 *The new GeneSTAR MVP™ system is reported in trait units accounting for the simultaneous effect of all markers. The MVP for a trait is predicted from the overall sum of allelic effects in the animal's genotype for the entire 56-marker panel for that specific trait.
- 285 *The TenderGENE test from Merial/Igenity ranks the desirability of the 3 tenderness gene combinations on a scale of 1 to 10 with 10 being the most desirable from a tenderness standpoint.
- 286 **SNP is a single nucleotide polymorphism. A SNP acts as a pointer for the presence of a gene.
- 287 **While GeneSTAR and TenderGENE each measure tenderness alleles, both companies use different SNPs to point to the same tenderness markers. The tenderness markers are: Calpastatin, Calpain 316, and Calpain 4751.
- 608 The GeneSTAR platform currently produces Molecular Value Predictions (MVPs) for the traits of feed efficiency, marbling and tenderness.

Nutrition

- 288 Examples of protein feeds are soybean meal, alfalfa meal, cottonseed, and alfalfa hay.
- 289 Amino Acids are the building blocks of protein.
- 290 Roughage refers to a bulky feed that is low in energy and high in fiber such as hay.
- 291 Concentrates, known as supplements, are a classification of feedstuffs that are high in energy and low in fiber. Examples of concentrate feed grains include corn, milo, wheat, oats, barley and soybeans/soybean meal.
- 292 Young cattle use most of their feed for growth and maintenance.
- 293 Mature livestock use most of their feed for maintenance and reproduction, rather than growing.
- 294 At least 80-85% of the nutrients consumed by cattle come from non-grain sources - feedstuffs not edible by humans such as grass, roughage, food processing by-products and crop residues like corn stalks.
- 295 In general, you should start feeding a steer for show at 6-8 months of age.
- 296 Progesterone, estrogen, vitamin D, and aldosterone are all hormones synthesized from cholesterol.
- 297 Net energy is defined as the energy remaining after the deduction of digestive losses, gas losses, urinary losses and the work of digestion.
- 298 Vitamin A is required for the functioning of the eye in the dark.
- 299 A vitamin D deficiency in calves results in rickets.
- 300 Cattle usually receive adequate quantities of Vitamin D by synthesizing it in their own bodies during exposure to direct sunlight or from sun cured hay.
- 301 ** A cattle liver functions chiefly as an aid to the alimentary canal in nutrient digestion.
- 302 The primary digestive activity that occurs in a cow's rumen is feedstuff fermentation.
- 303 Phosphorus has been called the "master mineral" because it is involved in practically all of the metabolic processes of the body.
- 304 Rennin is the enzyme in a calf's stomach that causes milk to form a curd.
- 305 * Surplus Vitamin A is stored in the liver for up to 90 days.
- 306 Colostrum is the first milk of a fresh cow. Colostrum is important to a calf because it provides protection against disease and is high in vitamins, minerals, energy, antibodies.
- 307 Lactose is the chemical name for milk sugar.

Statement

- 308 Maintenance, growth, lactation and reproduction are the four main divisions that feed usage can be categorized into.
- 309 Vitamin A is the most important vitamin for a breeding beef animal.
- 310 Salt and minerals are normally fed free choice to beef cows on pasture.
- 311 Energy, protein, vitamins, minerals and water are the 5 primary nutrients.
- 312 Bacteria and other microbes of the rumen enable cattle to digest cellulose.
- 313 Overfeeding corn to cattle not used to a concentrate feed can cause founder or acidosis.
- 314 Drought is likely to increase nitrate, a toxic factor, in corn silage.
- 315 Calcium is most likely to be deficient with cattle maintained on a high concentrate diet.
- 316 High concentrate feeding is associated with liver abscesses.
- 317 Growth-promoting implants affect feed efficiency.
- 318 *Protein in feed not digested by microbes of the rumen passes to the lower gut for digestion as bypass protein.
- 319 Distiller's grains; Brewer's grains; corn gluten meal and dehydrated alfalfa are high in by-pass protein.
- 320 Nutrient requirements for the pregnant beef cow are highest during the last third of pregnancy.
- 321 It is important to change a cow's feed slowly to give rumen bacteria time to adapt to a new diet.
- 322 Salt is iodized to supply iodine, which helps control goiter, a condition of the thyroid.
- 323 TDN stands for: total digestible nutrients.
- 324 Calcium and phosphorus are minerals essential for proper bone development.
- 325 In drought stunted corn, the largest amounts of nitrate will be found in the stalks.
- 326 Feed is digested in the rumen by bacteria and protozoa.
- 327 * High nitrate feeds can be a problem. If you are feeding high nitrate feeds, you can also feed high energy feeds, like grain, to help the cow turn the nitrates into protein.
- 328 Cows will eat less on a hot summer day.
- 329 Rumination is regurgitation and chewing of the cud.
- 330 Molasses is a good source of energy, which is used in many feeds.
- 331 NPN stands for non-protein nitrogen. Urea is a form of non-protein nitrogen.
- 332 * Nutrient requirements for finishing cattle are based on 3 factors: the sex and size (weight) of the animal, the level of production (daily gain) and nutrient intake.
- 333 A feedstuff that has high fiber content would most usually be classified as roughage.
- 334 Lice and worms will cause cattle to be slow gainers.
- 335 Of the classes of nutrients (vitamins, minerals, proteins, carbohydrates, water, and fats) water is the most economical in almost all cases.
- 336 Iron, copper, phosphorus, calcium, and magnesium are examples of minerals.
- 337 White muscle disease is caused by a deficiency of either Vitamin E and/or Selenium.
- 338 * The total amount of water used in on-farm production of grain-fed beef averages 200 gallons per pound of carcass beef.
- 339 Mature cattle consume 8-15 gallons of water per day.

Statement

- 340 Feedgrains are grains that are not suitable for human consumption, but when fed to animals resulting in highly nutritious nutrients for humans.
- 341 Cellulose is the most abundant chemical component of plants, and it is the most abundant organic chemical substance on earth. It is indigestible by humans, but from 30 to 80 percent of the cellulosic material eaten by ruminant animals is digested.
- 342 ZIP is an acronym often used to communicate beef's nutritional value with zinc, iron and protein.
- 343 An animal unit is a standard measure based on feed requirements, used to combine various classes of livestock according to size, weight, age, and use.

Gelbvieh History & Development

- 311 All AGA and AGJA members in good standing are eligible to participate in the GPA program.
- 344 Artificial insemination was the technology used to introduce Gelbvieh genetics to the United States.
- 345 Gelbvieh cattle were first imported into the United States in 1972.
- 346 Leness Hall, Carnation, Washington was the person responsible for first importing Gelbvieh semen to the United States.
- 347 In Germany, Gelbvieh are also called German Yellow.
- 348 The bull stud that brought the first Gelbvieh semen to the United States was Carnation Farms Breeding Service (Carnation Genetics).
- 349 Gelbvieh semen was introduced into the United States in 1971.
- 350 Semen was offered from 4 bulls when the original Gelbvieh semen was imported into the United States. Their names were: Uni, Upat, Universal and Ufa.
- 351 Gelbvieh cattle originated in the Bavarian area of Germany.
- 352 Gelbvieh cattle were performance tested in Germany for over 110 years.
- 353 The first 7/8 Gelbvieh calves born in the U.S. were twins named Miss Sugar and Miss Spice. They were born in 1976 at Green Valley Gelbvieh Ranch in South Dakota.
- 354 There are fullblood, purebred, percentage, hybrid, red, black and polled markets for Gelbvieh and Balancer bulls and females.
- 355 The initials AGA stand for American Gelbvieh Association.
- 356 The AGA was organized in 1971. The first national Gelbvieh sale was held in 1972. The first national Gelbvieh show was held in Denver in 1977.
- 357 The official publication for the AGA is Gelbvieh World.
- 358 The first issue of Gelbvieh World was published in July/August of 1986
- 359 The Gelbray breed was developed by crossing Gelbvieh and Brahman.
- 360 Homer & Dotti Knost, Clinton, Louisiana developed the Gelbray breed.
- 361 One important result of the infusion of Brahman blood in the Gelbvieh breed by way of Gelbray is the increased heat and insect tolerance.
- 362 Many Gelbvieh fullbloods are horned, with some instances of the polled trait.
- 363 In 1982, John Green, Franklinton, Louisiana was the first to produce a Gelbvieh calf that survived the detailed frozen embryo process.
- 364 The purpose of the American Gelbvieh Association is to develop, promote, improve, record and register the Gelbvieh breed of cattle through a non-profit, membership corporation composed of cattle breeders who individually share the same purpose.

Statement

- 365 The first AGA president was Gallagher Rule, who also helped start the American Gelbvieh Association.
- 366 Founding memberships for AGA were \$500.00.
- 367 Brian Beying was the AGA Member of the Year for 2009.
- 368 The annual herd summary program was instituted in 1985 to let members report the animals no longer producing in their herds.
- 369 Two services offered to the membership as a result of the Herd Summary are a Lifetime Cow Summary on every cow and a registration application pre-printed with registered cow information.
- 370 On their herd assessments members are charged \$12.50 per head under the Traditional payment system and \$18.00 under the One Rate system for registered females not born in the current year
- 371 The Lifetime Cow Summary reports a cow's progeny performance.
- 372 The Gelbvieh Sire Summary is divided into two sections: Progeny Tested and Genetic Indicator sires.
- 373 The 5 organizers of AGA were Gallagher Rule, Merle Buss, Mitch Dobson, Edd Pritchett and Fred Twietmeyer.
- 374 * The previous sites of the Junior Classic were: 1982 - Fremont, NE; 1983 - Spencer, IA; 1984 - Sioux Falls, SD; 1985 - Shawnee, OK; 1986 - Rapid City, SD; 1987 - Greeley, CO; 1988 - Hutchinson, KS; 1989 - North Platte, NE, 1990 - Shawnee, OK, 1991 - Gillette, WY; 1992 - Hutchinson, KS; 1993 - Kearney, NE, 1994 - Columbia, MO, 1995 - Murfreesboro, TN, 1996 - Pueblo, CO; 1997 - Wichita Falls, TX, 1998 - Columbus, OH, 1999 - Kearney, NE; 2000 - Springfield, MO; 2001 - Rapid City, SD; 2002 - Perry, GA; 2003 - Hutchinson, KS; 2004 - Stillwater, OK; 2005 - Greeley, CO, 2006 - Sioux Falls, SD, 2007 - Sedalia, MO, 2008 - Waynesville, NC.
- 375 * Past Presidents of AGA are: Gallagher Rule, Don Maskill, Charles Cooper, Johnny Green, Rod MacLennan, Charles Clark, Dotti Knost, Jerry Mettler, Earl Buss, Ed Kalianoff, Jim Beastro, Alan Albers, C.K. Allen, Tom Cone, Larry Martin, Rick Soelzer, John Burbank, John Bartee, Wayne Roitsch, Bill Wilkinson, Steve Munger, John Carrel, Jay Johnson, and Stuart Jarvis.
- 376 SmartCross™ is a crossbreeding program promoted by the American Gelbvieh Association beginning in January of 2001. SmartCross shows how to use Gelbvieh and Balancer genetics in an effective crossbreeding program.
- 377 The SmartCross program strongly recommends the use of purebred or fullblood Gelbvieh bulls on high-percentage British cows.
- 378 The current members of the "Hall of Fame" are: Leness Hall, Gallagher Rule, Fred Twietmeyer, Merle Buss, E. Edd Pritchett, Johnny Green, Don Maskill, Jim & Loretta Wilson, Bud & Thelma Beastro, Charles & Carol Cooper, Rod MacLennan, Homer & Dottie Knost, Bill & Georgia Diehl, Jim Baldrige, Earl Buss, Chuck Struthers, Don & Mar Fawcett, Fred & Lee Kummerfeld, Jerry Mettler, Phil VanDervoort, Francis Bradshaw, Phil & Dolores Haglund, Alan Albers, Bobby Myrick, Tony Hayek, and Dave Roen.
- 609 In 2009, AGA unveiled the Gelbvieh Performance Advantage (GPA) Program. The fundamentals of this program serve to provide a tool to promote the performance aspects of an individual AGA member's operation. Flexibility within the GPA program encourages each producer to set and work within performance oriented goals that best serve to produce the Gelbvieh or Balancer product their customer is seeking.
- 610 Under the GPA Program, AGA members can qualify at specific levels based on established criteria. Qualifying levels are designated as Bronze, Silver, and Gold. Criteria is based primarily on collection and submission of performance data as well as using sires that meet or exceed certain requirements.

Gelbvieh Traits

Statement

- 379 Problems with pink eye are limited in Gelbvieh cattle due to good pigmentation, which is one of the Gelbvieh traits.
- 380 The Gelbvieh disposition is best described by the term "docile".
- 381 Gelbvieh are considered a good maternal breed because of their excellence in the following traits: fertility, mothering, milk production, percent calf crop, weaning weights, disposition, early maturity, pigment distribution.
- 382 A beef producer gains many advantages when he uses Gelbvieh in his program. Among these are excellence in growth rate, milk production, weaning weight, feed conversion, pigment distribution, carcass cutability, disposition, hardiness, adaptability, percent calf crop, and fertility.
- 383 * According to a 2003 AGA survey of Commercial cattle producers the four primary advantages of Gelbvieh sired cows are pounds weaned per cow exposed, milking ability, rebreeding ability and temperament.
- 384 * According to a 2003 AGA survey of Commercial cattle producers the four primary advantages of Gelbvieh cross feeder calves are growth, muscle, leanness and temperament.

General Cattle Knowledge

- 385 In any species of animal, the dam of an offspring is the female parent.
- 386 In any species of animal, the sire of an offspring is the male parent.
- 387 Cows are female cattle that have produced at least one calf.
- 388 Cattle of either sex, under one year of age, are called calves.
- 389 WDA is the abbreviation for Weight per Day of Age.
- 390 When a cattleman says that a cow has "dropped", he means she has calved.
- 391 A herd sire is a principal breeding bull in the herd.
- 391 When a breeder describes a cow as being "broody" he means that she gives the appearance of being a good mother.
- 392 Cattle that are genetically hornless are said to be polled.
- 392 The paper that lists the sire and dam of a registered animal is the registration certificate.
- 393 When a breeder refers to the bottom side of a pedigree, he is talking about the dam's ancestry. The top side is the sire's ancestry.
- 393 In a pedigree, the letters E.T. stand for embryo transfer.
- 394 A herd bull battery consists of bulls in service in a herd.
- 394 The most commonly used by-product of beef animals is leather.
- 395 Castration refers to the process of removing the testicles.
- 395 * A contemporary group can be defined as a group of animals of a similar age, same sex, and similar management.
- 396 Cattle futures markets are used to manage price risk in the cattle business.
- 396 In any species of animal, the word "progeny" means offspring.
- 397 When a breeder says a cow is "open", he means she is not pregnant.
- 397 "Branded beef" is a merchandising concept providing consumers with a labeled product that is typically more consistent in quality than commodity beef.
- 398 Dystocia is another term for difficult calving.
- 398 Heifers are female cattle that have not born offspring.

Statement

- 399 A male bovine animal that has been castrated before sexual maturity is a steer.
- 399 A frame six yearling bull has a 51-inch hip height.
- 400 Steers and heifers that have been finished for slaughter are referred to as fed cattle.
- 400 Ideally a cow should have a calf each year beginning at two years of age.
- 401 A "freemartin" is a sterile heifer born twin to a bull.
- 402 Bull calves, in general, are expected to weigh more at weaning than heifers.
- 403 * The average generation interval in cattle is 4.5 to 6 years.
- 404 * Selection differential is the superiority of parent stock compared to the average of the herd from which they were selected.
- 405 When cattle are crossed with the American Bison, typically a sterile offspring results.
- 406 Cattle, sheep and goats all belong to the same scientific family grouping in classification.
- 407 * Bovidae, meaning hollow horned, is the cattle family classification.
- 408 Cattle were first domesticated in the year 7,000 BC
- 409 The world's leading country in cattle numbers is India.
- 410 Shade and/or cool water are essential for calves in hot weather.
- 411 Loss of weight during shipping is called shrink.
- 412 A normal amount of shrink to expect is 3-6 percent.
- 413 Lactation is the period of time that a cow is milking.
- 414 Hip height, age and sex are the 3 pieces of data necessary to calculate frame score.
- 415 Bulls used for breeding purposes should not be implanted with a growth stimulant because it severely retards testicle development.
- 416 The Canadian government uses molar development in determining age for shipping meat products from cattle under 30 months of age to the United States.
- 417 The preferred width of handling chutes is 22 to 28 inches.
- 418 Most livestock futures are traded at the Chicago Mercantile Exchange.
- 419 Udder and teat soundness are a concern for a number of reasons: extra costs, reduced convenience, reduced longevity with injury or mastitis, calf performance may be affected by reduction in milk flow or lower colostrum intake by new born calves, and heritability of udder and teat traits.
- 420 Cattle improve grass growth by aerating the soil with their hooves, allowing oxygen to enter the soil.
- 421 Animal Rights is a position taken by those who are against the "exploitation" of all animals for any purpose and believe that animals have legal or moral rights similar to humans.
- 422 Animal welfare is based the principles of humane care and use. Believing that animals can and will be used to benefit humans, and the responsibility of use carries certain obligation, such as appropriate husbandry, provision of essential food, water, shelter, health care, maintenance, alleviation of pain and suffering and other needs.
- 423 The majority of normal cattle deaths occur in the first 24 hours of life. The leading causes of deaths are slow and difficult births (dystocia), and cold stress (hypothermia).
- 424 Public land is land owned by the local, state, or federal government.
- 425 A grazing fee is a payment made by ranchers to the government for the right to graze livestock on public land areas for a specified length of time.

Statement

426 Rangeland is land on which the native vegetation is predominantly grasses, grass-like plants, forbs, or shrubs, grazed by wild or domestic animals and is managed as natural ecosystem.

Breeds

427 A breed is described, as a group of animals having a common origin and as a result of breeding and selection, possess common characteristics such as color, ears, horns, etc.

428 Examples of Continental European breeds are: Gelbvieh, Maine Anjou, Blonde d'Aquitane, Charolais, Salers, Simmental, Chianina, Limousin or Braunvieh.

429 The new breeds brought about by the Brahman cross are called American breeds. Some examples are: Gelbray, Charbray, Braford, Brangus, Simbrah, Beefmaster, Santa Gertrudis.

430 Examples of British (English) breeds are: Angus, Hereford, Galloway, Shorthorn, Red Angus, Polled Hereford, South Devon

431 Any combination of two or more breeds is a crossbred animal.

432 The cattle species called Bos Taurus is generally described as cattle with no hump over the shoulder and neck. Examples include Continental European breeds like Gelbvieh, Limousin, Maine Anjou; and British breeds, Angus, Hereford, and Shorthorn.

433 The cattle species called Bos Indicus is generally described as cattle with a hump over the shoulder and neck. Bos indicus cattle are heat tolerant and resistant to ticks and other insects. Bos indicus examples include Nelore, Gir, Guzerat, and Nelore. Through crossbreeding, the United States has developed several bos indicus derivative breeds like Brahman, Brangus, Santa Cruz, Santa Gertrudis, and Simbrah.

434 * If a fullblood Gelbvieh bull is mated to a cow that is 1/2 Hereford & 1/2 Angus, the fractions of each breed the calf would be are 1/2 Gelbvieh, 1/4 Angus, 1/4 Hereford.

435 An animal that has some Brahman blood is referred to as being "eared".

Breeding Systems

436 Robert Bakewell was a famous man from Great Britain that first practiced line breeding to produce animals of a fixed type.

437 The term F1 refers to the first cross of two unrelated pure breeds.

438 Another term for hybrid vigor is heterosis.

439 A terminal cross is designed to produce a growthy calf from a moderate sized cow. No females are kept for replacement and no bulls are kept for use. All progeny are raised for slaughter.

440 In a breeding herd, sires are usually selected on the basis of a combination of things, namely: pedigree, conformation, performance, fertility, eye appeal, progeny, and EPDs.

441 Get-of-Sire means calves sired by the same bull.

442 If a breeder uses only animals from his/her own herd and doesn't bring in outside genetics, he/she is said to have a closed herd.

443 Culling is a process of eliminating low quality animals from a herd.

444 Line breeding is a mating system, which concentrates the inheritance of one or more ancestors in the pedigree.

445 Inbreeding is mating of closely related animals.

446 Crossbreeding is mating of animals from different breeds.

447 An animal whose parents are both of the same breed is considered a "straight-bred."

Exports

Statement

- 448 Exports add value to underutilized beef cuts that have limited demand in the United States, such as short rib, short plate, liver or tripe.
- 449 One in every four pounds of beef traded in the world originates from the United States.

Identification

- 450 The permanent identification number in an animal's ear is a tattoo.
- 451 A tattoo can reflect several different things, such as the year the calf was born, the off spring's parents, or the sequence as to when a calf was born.
- 452 Three types of animal identification include ear tag, number brand, and tattoo.
- 453 Electronic identification by using bar code or radio frequency transmission is known as eID.
- 454 An animal identification device that contains an electronic chip is know as an eTag.
- 455 Process verification is the ability to verify whether an animal has received a specific product such as a vaccine or a procedure as claimed by a seller.
- 456 Source verification is the ability to verify the source of an animal as claimed by the owner or seller.
- 457 RFID stands for radio frequency identification. RFID is any electronic identification system comprised of a reader/scanner/interrogator and a transponder that can read or write data content using a specified radio frequency.
- 458 NAIS is an acronym for National Animal Identification System. The NAIS is a national program intended to identify all agricultural animals and track them as they come into contact with, or are inter-mixed with, animals other than herdmates from their premises of origin.
- 459 One of the goals of NAIS is 48-hour traceback after the discovery of a disease outbreak.
- 460 A premises is defined as a location where animals are raised, held, or boarded.

Showing

- 461 In showmanship, exhibitors are required to have a show halter, showstick, and scotch comb.
- 462 When traveling it's very important to bring calf's registration papers (if available), bill of sale, brand inspection, and health inspection papers (depending on state requirements).
- 463 A blocking chute is a metal or aluminum structure with a headgate used to restrain animal while fitting or clipping.
- 464 A show halter is a leather halter used only when showing an animal.
- 465 A blower is an electric unit used to dry an animal or to blow out dirt before fitting.
- 466 A show box is a wood, aluminum, or plastic box used to store show products and other tools needed at a show.
- 467 When you lead an animal in the show ring, you should be on the animal's left side.
- 468 A show stick is an instrument used for setting up cattle's feet in the show ring.
- 469 In a showmanship contest, the exhibitor is evaluated on their overall ability to effectively present their animal in the ring.
- 470 An animal's "bloom" refers to the desirable condition of skin & hair.

Consumer Information

- 471 * The Food and Drug Administration says that ground beef products should be cooked to an internal temperature of at least 160 degrees, to destroy E. coli or other types of bacteria.

Statement

- 472 * When comparing the nutrient advantages of a 3-ounce portion of top round steak with a 3-ounce portion of chicken breast, one serving of beef equals 7 chicken breasts to get the same amount of Vitamin B12. One serving of beef equals 3 chicken breasts to get the same amount of Iron and Folate.
- 473 In 2005, My Pyramid replaced the traditional food pyramid. My Pyramid is based on the most recent Federal dietary guidelines. The primary differences separating it from the old pyramid are its personalized to individual lifestyles and recommending moderate exercise.
- 474 May is traditionally the month when beef and the beef industry is recognized.
- 475 * Beef consumption in the U.S. at 67 pounds per person per year is second to poultry. Annual beef consumption per person was highest in the Midwest (73 pounds), followed by the South and West (65 pounds each) and the Northeast (63 pounds).
- 476 A three-ounce serving of meat provides substantial quantities of the recommended daily allowance for various nutrients, which include B-vitamins, iron, zinc, and protein.
- 477 * A 100 grams serving of lean beef has approximately the same amount of cholesterol as 100 grams of either fish or chicken.
- 478 Proteins from all meat are at least 97% digestible and meat fat is at least 96% digestible.
- 479 Protein from meat is higher quality (a complete protein) than protein from a plant source (incomplete protein)
- 480 GMOs "Genetically Modified Organisms" are organisms that have had their genome modified artificially by genetic engineering.
- 481 Meat provides "heme" iron, which is better absorbed by the body than non-heme iron from plant foods.
- 482 A ½ cup of cooked dried beans, 4 ounces of tofu, 1 egg, or 2 tablespoons of peanut butter equals 1 ounce of meat.
- 483 A study in the Journal of American Dietetic Association found that rinsing and blotting meat with a paper towel can reduce the fat content of cooked ground beef, hamburgers, meatballs, and meatloaf by as much as 50 percent.
- 484 Demand of prepared meals continues to increase, since today's women work an annual average of 233 hours more than they did in 1976 and men work an annual average of 100 hours more.
- 485 By law, ground beef can contain no more that 30% fat.
- 486 Between 40 and 45% of all beef sold today is in a ground form. This includes fast food burgers, ground beef purchased in the grocery store and processed meats such as sausages, hot dogs, and lunch meat.

Calculations

- 487 Adjusted weaning weight is figured by adjusting the calf's weight at weaning to a standard 205-day weight and adjusting for the age of the dam.
- 488 ** The AGA does not use standard Beef Improvement Federation (BIF) age of dam additive adjustment factors to calculate adjusted weaning weights. Instead the AGA uses a more continuous adjustment formula that takes into account a dam's age in days rather than in rounded years.
- 489 ADG is the abbreviation for Average Daily Gain.
- 490 The equation for Weight per Day of Age (WDA) is: the animal's current weight divided by its age in days.
- 491 The equation for lifetime Average Daily Gain (ADG) is the animal's current weight minus its birth weight; this is divided by the age in days.

Statement

- 492 ** Adjusted weaning weight equation: $\text{Adj. 205} = ((\text{Actual Weaning Weight} - \text{Actual Birth Weight}) / \text{Age in days at Weaning}) * 205 + (\text{Birth Weight} + \text{Age of Dam Adjustment})$
- 493 ** Adjusted yearling weight equation: $\text{Adj. 365 weight} = ((\text{Actual Yearling Weight} - \text{Actual Weaning Weight}) / \text{Number of days between weights}) * 160 + \text{Adj. 205 day weight}$
- 494 * The three things that actual weaning weight is normally adjusted for are age of calf, age of dam, and hybrid vigor.
- 495 * Beef Improvement Federation (BIF) guidelines and the AGA recommend taking weaning weights when a calf is between 160 days to 250 days of age. Yearling weights should be taken between 320 days to 410 days of age.
- 496 ** Percent calf crop weaned per cow exposed = $(\text{Calves weaned} / \text{Number of cows exposed}) * 100$
- 497 SPA stands for Standardized Performance Analysis. This NCBA sponsored program provides useful production and financial-performance information for any size herd or production region.
- 498 * When adjusting weaning weights (205 day weight) the following factors are used to make these adjustments: dams age, age of calf and the sex of the calf.
- 499 Cost of production is the sum (measured in dollars) of all purchased inputs and other expenses necessary to produce farm products. Cost of production statistics may be expressed as an average per animal, per acre, or per unit of production (bushel, pound, hundredweight) for all farms in an area or in the country.

Carcass/Slaughter

- 421 Veal is the meat of calves butchered under 300 pounds.
- 500 USDA quality grades for young, A maturity beef are: Prime, Choice, Select and Standard.
- 501 The beef carcass is divided into four primals: chuck, round, rib and loin.
- 502 When evaluating cattle, external fat is referred to as fat cover, finish or condition.
- 503 There are 5 USDA Yield Grades (1,2,3,4,5).
- 504 The USDA Yield Grade system provides an estimate of the cutability of a carcass.
- 505 Cutability is the proportion of lean salable meat yielded by a carcass.
- 506 A Yield Grade of 1 is the highest cutability as opposed to a Yield Grade of 5 that is the lowest.
- 507 To insure wholesomeness, inspection is mandatory by the federal government in all commercial slaughter plants.
- 508 The quality grade of a beef carcass is determined by the amount of marbling in the rib eye muscle and the physiological age of the carcass.
- 509 USDA feeder cattle grades are based upon frame size and muscling.
- 510 The forequarter of a beef carcass is heavier than the hindquarter.
- 511 Slaughter veal is not yield graded.
- 512 Fat is necessary as an outside cover of a carcass to protect it during normal storage and handling.
- 513 Heifers have the lowest lean to fat ratio.
- 514 Cattle should be off feed at least 12 hours before slaughter.
- 515 ** Shape and color of the ribs, the color of the lean in the longissimus muscle and the degree of ossification of the thoracic cartilage or buttons are all evaluation points used to determine maturity of a carcass.
- 516 Intramuscular fat is also known as marbling.

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- 517 Intermuscular fat is known as seam fat.
- 518 Fat measurements are usually taken on cattle at the 12th rib; 3/4 distance of medial to lateral end of ribeye.
- 519 Cattle that have been grass-fed immediately before slaughter will have yellow colored fat.
- 520 Tenderness, juiciness, and flavor are three factors that influence the palatability of meat.
- 522 Meat is approximately 60 percent water.
- 523 Fatness, muscling, and weight are the three main factors affecting yield grades.
- 524 It costs the beef industry \$2 billion per year to remove excess fat from beef carcasses.
- 525 Age of the animal and days on feed are better indicators of overall palatability than marbling.
- 526 * The term "70-70-0" applies to packers and feeders that would ideally like 70% of all fed cattle to grade Choice or higher with 70% Yield Grade 1s & 2s and zero out cattle.
- 527 Case-Ready beef is a term for beef cuts that arrive at the retail store ready to place in the meat display case. Walmart is the largest retailer utilizing case ready beef since it eliminates the need for a meat cutter at the retail level and that saves money.
- 528 * Out cattle refer to cattle with too big or too small of carcasses, grading Standard or lower, dark cutters or Yield Grade 4s and 5s.
- 529 * The top eight quality related problems noted by retailers, packers, consumers and restaurant/foodservice operators are: 1) excess external fat; 2) injection-site blemishes; 3) size of individual cuts; 4) excessive seam fat; 5) inconsistency in the product; 6) low overall cutability; 7) bruise damage; 8) inadequate marbling
- 530 There is almost 7 billion pounds of ground beef sold annually; 41% of this is sold through retail stores, 59% is sold through fast food restaurants and other food
- 531 KPH stands for Kidney, Pelvic, and Heart fat.
- 532 Ribeye area is the only yield grade factor that assesses muscling.
- 533 The normal range for dressing percent of Choice steers is 62-65%.
- 534 * Boxed beef is a term used to describe beef marketed directly from the packing house to restaurants as individually wrapped, vacuum sealed, sub-primals or retail cuts.
- 535 A non-ambulatory bovine animal is referred to as a downer. Current legislation prevents downer animals in the U.S. food system.
- 536 Injection sites are a condition that puts an animal at risk for residue violation.
- 537 The 9 primary cuts of beef are: round, sirloin, short loin, rib, chuck, flank, short plate, brisket, and fore shank.
- 538 USDA "Standard" beef is the leanest grade of beef, as contains the least amount of marbling (the flecks of fat within the muscle). The second leanest grade is "Select".

Ultrasound

- 539 The approximate correlation between ultrasound carcass data and actual carcass data is 70%.
- 540 A certified ultrasound technician collects ultrasound data between 320-410 days of age. The technician sends the electronic images to a centralized ultrasound processing for interpretation. The interpreted data is electronically sent to the AGA, where the data is adjusted and a ultrasound summary is mailed to the breeder.
- 541 The AGA will accept ultrasound data from any APTC-certified lab.
- 542 Ultrasound measurements taken include ribeye area (REA), intramuscular fat percentage/marbling (IMF), rump fat, rib fat, and scan weight.

Feedlot

- 543 Steers and heifers ready to enter the feedlot for finishing are called feeders.
- 544 A feedlot consists of a group of pens where steers and heifers are finished for slaughter.
- 545 Feed efficiency is measured by the pounds of feed required to produce a pound of gain.
- 546 A realistic figure for a good average daily gain for cattle on feed or in a feedlot would be 3 to 4 pounds.
- 547 The conditioning process in the growing phase of cattle prior to finishing in the feedlot is called "backgrounding".
- 548 Three Gelbvieh traits desired by today's feedlot operations are growth, carcass leanness and feed efficiency.
- 549 * Gelbvieh Alliance data has shown animals with a balance of Gelbvieh and British (Angus, Red Angus, etc) genetics have more acceptable carcasses at slaughter. Cattle with these genetics grade high (Choice or higher) with lots of red meat yield (Yield Grade 1s or 2s).

EPDs

- 550 *Total Maternal EPD is a value that combines growth and milk data and is measured in terms of weaning weight performance. The Total Maternal EPD is 1/2 the Weaning EPD plus the entire Milk EPD for an animal.
- 551 ** Genetic correlations indicate how closely traits are genetically related by reflecting the effect that selection for one trait can have on other traits. Correlations may range from -1.0 to +1.0. The closer the correlation is to +1.0 or -1.0 the stronger the relationship between traits. These numbers change each year and can be located in the annual Sire Summary.
- 552 The two EPDs unveiled in the 2002 AGA Sire Summary were Stayability and Grid Merit. In 2003, the Feedlot Merit EPD was unveiled.
- 553 A sire's EPD is a prediction of how his future progeny will perform on a comparative basis with other sires.
- 554 The sixteen traits for which the sires were evaluated in the 2009 Sire Summary are: birth weight, weaning weight, yearling weight, milk, total maternal, gestation length, calving ease direct, calving ease daughters, scrotal circumference, carcass weight, ribeye area, marbling, days to finish, stayability, carcass value and feedlot merit.
- 555 The Gelbvieh bulls selected as trait leaders are those that ranked the highest in a specific trait.
- 556 * In order to be listed as a Trait Leader, a sire must qualify as a Progeny Tested Sire and have Accuracy in the listed trait of at least .50. Listing for Carcass Traits are slightly different as sire must have either five (5) carcass progeny or 25 female progeny ultrasound records to be listed. Feedlot Merit (FM) and Carcass Value (CV) leaders, indexes that do not have accuracies, must have Yearling Weight (YW) accuracy of at least .50 to be included
- 557 The current trait leader in the 2009 Sire Summary for the Milk EPD is JBOB Carolina CPR with a Milk EPD of 34.
- 558 Milk EPD is a measure of the genetic ability of a sire's daughters to produce milk measured in pounds of progeny weaning weight.
- 559 * In the 2009 Gelbvieh Sire Summary, Progeny Tested sires have an accuracy of at least 0.65 for the weaning weight EPD evaluation and have calves that were registered or computed within the last 4 years.
- 560 * A trait ratio of 112 means that the animal is 12% above the average in that trait.
- 561 EPDs on non-parent animals are based on the individual's own record plus pedigree information.

Statement

- 562 ** In the 2009 Gelbvieh Sire Summary, Active Sire average EPDs are: Calving Ease Direct: 104, BW: 1.3, WW 41, YW 74, Milk 17, TM 38, Gest -1.5, CE Daughters 105, SC 0.4, ST 5, CW 7, REA 0.06, MB -0.05, DtF 3.6, CV2.52, FM 7.55.
- 563 * EPDs cannot be compared across breeds because each breed association uses different heritability estimates for the various traits and different EPD bases.
- 564 * The Stayability EPD predicts the ability of a cow or a sire's daughters to produce a calf after age 6 years.
- 566 The Yearling Weight Trait Leader in the 2009 Sire Summary is WVR Lester 27L with a Yearling Weight EPD of 127.
- 567 The Gestation Length Trait Leader in the 2009 Sire Summary is SLC Freedom 178F ET with GL EPD of -5.9.
- 568 The Calving Ease Trait Leader in the 2009 Sire Summary is ELK Bk Pld Cheyenne 3072F ET with a Calving Ease EPD of 135.
- 569 The Scrotal Circumference Trait Leader in the 2009 Sire Summary is KIT Tabasco J26 ET with a SC EPD of 2.2.
- 570 In 2007, the AGA released the 2 newest EPDs. They are Carcass Value (CV) and Days to Finish (DtF).
- 571 The AGA's carcass related EPDs incorporate ultrasound data, as well as carcass data collected on a sire's progeny.
- 572 The Days to Finish (DtF) EPD is expressed in days to reach a constant fat endpoint, which is commonly used in the feedlot to determine when an animal is finished with the appropriate amount of fat cover. When evaluating two potential sires with comparable EPDs for other traits, the sire with the lesser value for DtF will produce progeny that will finish sooner with potentially lower feed costs. The DtF EPD replaced the previous Fat Thickness EPD.
- 573 The feedlot merit (FM) EPD is expressed in dollar value per head, value passed to progeny. The feedlot merit EPD measures the dollar value associated with the expected gain and feedlot efficiency of progeny when fed in a "typical" feedlot arrangement.
- 574 The Carcass Value (CV) EPD is expressed in dollar value per head, comparing progeny of one animal to another in dollar differences when progeny are sold on a grid. This value is a true economic comparison; it is not grid merit at a standard carcass weight as many breeds calculate. Projected carcass weight, penalties for "out" weight carcasses (too heavy or light), quality grade premiums and discounts are all included in calculating this \$EPD value.
- 575 In January 2003 the AGA adopted the MBE or Multi-Breed Evaluation method to calculate EPDs. The MBE provides producers with more accurate EPDs since it accounts for all of the genetics in an animal, not just Gelbvieh genetics.

Bovine Anatomy

- 576 * The anatomical structure in cattle that is comparable to the human knee is the stifle.
- 577 * The cervix in the cow's reproductive tract creates the most difficulty for the artificial inseminator.
- 578 The vulva is the external opening of the vagina.
- 579 * The calf fetus develops within layers of membrane called the placenta through which it receives nourishment from the mother.
- 580 The stomach of a beef animal has 4 compartments: rumen, reticulum, omasum and abomasum.
- 581 * The abomasum (true stomach) portion of a cow's stomach is most similar to the human stomach.
- 582 In a beef cow, the rumen compartment of the stomach has the greatest volume.
- 583 * Another name for the reticulum (one of the four stomachs of cattle) is honeycomb.

Statement

- 584 A cow has no upper incisors.
- 585 * The esophageal groove in calves allows milk to bypass the rumen and reticulum for digestion in the abomasum.
- 586 The cecum is located in the first section of the large intestine.
- 587 In referring to cattle, the term "hooks" refers to hipbones.
- 588 The dewlap is the loose skin that hangs between the throat and brisket on cattle.
- 589 The poll is on top of the head.
- 590 The dewclaw is above the pastern on the back of the leg.
- 591 Femininity is the refined appearance of a female while masculinity is the rugged appearance of a male.
- 592 Both characteristics, femininity and masculinity are usually evaluated by observing the head, neck and shoulder region.
- 593 The USDA uses dentition to determine an animal's age. Cattle over 30 months are evidenced by the eruption of at least one of the second set of permanent incisors.
- 594 "Post legged" refers to an animal with straight back legs.
- 595 "Parrot mouth" is a condition when the top jaw overlaps the lower jaw.
- 596 A scur refers to a rudimentary horn growth that may or may not become attached to the skull at maturity.
- 597 Conformation is the physical form of an animal; its shape and arrangement of parts.
- 598 Two of the best places on a calf that indicate natural muscling are the lower round and the forearm.
- 599 The amount of fat on a market animal is called finish.
- 600 Tripe is made from the rumen of a bovine.
- 601 * Peristalsis is the name for the rhythmic muscular contractions which occur in the rumen.

COOL

- 602 *Under COOL Legislation, the supplier of a covered commodity that is responsible for initiating a country of origin declaration (the packer) must possess or have legal access to records that are necessary to substantiate that claim. In the case of beef or veal, a producer affidavit is considered acceptable evidence on which the slaughter facility may rely to initiate the origin claim, provided it is made by someone having first-hand knowledge of the origin of the animal(s).
- 603 *Under COOL legislation, if animals that were born in Mexico and others born in Canada were commingled through the raising or slaughter process, all possible combinations of countries must be accounted for when the meat is processed. Under this scenario, the resulting product would be labeled as "Product of US, Canada and Mexico."
- 604 *The 2002 and 2008 Farm Bills amended the Agricultural Marketing Act of 1946 to require retailers to notify their customers of the country of origin of muscle cut and ground meats including beef, veal, lamb, pork, chicken, and goat meat; wild and farm-raised fish and shellfish; perishable agricultural commodities; peanut, pecans, and macadamia nuts; and ginseng. This legislation is commonly referred to as COOL (Country of Origin Labeling).
- 605 *Legislation delayed the implementation of mandatory country of origin labeling (COOL) until March 16, 2009.
- 606 *COOL for covered meat commodities must take into account all the production steps (born, raised, and slaughtered) for animals that the meat is derived from. Many animals are exclusively, born raised and slaughtered in the United States and may be labeled with "Product of US."

Statement

607 *Other animals may have been born in another country and ultimately, raised and slaughtered in the United States. In this case, a multiple country designation must be declared (e.g., US and Mexico; US and Canada).