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by Alan NafzgerMay 21, 2025 Cattle, scientifically known as Bos taurus, are large domesticated ungulates primarily raised for their meat (beef), milk, and hides, as well as for draft purposes. They belong to the Bovidae family, which includes other ruminants like sheep, goats, and antelope. The domestication of cattle dates back approximately 10,500 years, originating from wild aurochs in regions that are now modern-day Turkey and Iran. Over centuries, cattle have been selectively bred to enhance specific traits, leading to a variety of breeds suited for different agricultural needs.Helpful Content: Fall off the barn roof and busted your keister? Life on the farm or ranch can be tough on the bum. Need a break? Laugh it off at FarmerCowboy.com, the #1 farm humor site. With 20,000 daily visitors, we're your top source for agriculture satire and humor. Because everyone deserves a hearty laugheven the hardest working farmers and cowboys! Join us and turn those long days into fun tales at FarmerCowboy.com. Historical Background: The domestication of cattle marked a significant shift in human civilization, allowing for settled agricultural societies. Early domesticated cattle were utilized for milk, meat, and as draft animals. Ancient civilizations such as the Egyptians, Sumerians, and Indus Valley people heavily relied on cattle for their agricultural practices and religious rituals.Cattle Breeds: There are over 800 recognized cattle breeds globally, each adapted to specific climates and purposes.Dairy Breeds: Holstein-Friesian, Jersey, Guernsey, and Ayrshire are known for their high milk production.Beef Breeds: Angus, Hereford, Charolais, and Limousin are popular for their superior meat quality.Dual-purpose Breeds: Some breeds like Shorthorn and Simmental are valued for both milk and meat production.Cattle Anatomy and Physiology: Cattle are ruminants, possessing a complex stomach with four compartments: the rumen, reticulum, omasum, and abomasum. This specialized digestive system allows them to break down fibrous plant material through microbial fermentation. They have a robust skeletal structure, strong muscular build, and are typically covered in short hair. Cattle vision is dichromatic, meaning they can see two primary colors, which affects their perception of the environment.Reproduction and Lifespan: Cows (female cattle) reach sexual maturity around 12-14 months of age. After mating, the gestation period lasts about 9 months, typically resulting in a single calf. Twins are rare but possible. Calves are weaned at around 6-8 months of age. The average lifespan of a cow can be 15-20 years, though dairy cows are often culled after 6-8 years due to declining milk production.Cattle Products:Meat: Beef from cattle is a significant source of protein and other nutrients. Cuts of beef include steak, roast, and ground beef, among others.Dairy: Milk from dairy cows is processed into products like cheese, butter, yogurt, and ice cream.Leather: Cattle hides are processed into leather, used in clothing, furniture, and accessories.By-products: Other parts of cattle, such as bones and blood, are used in various industries, including pharmaceuticals and cosmetics.Cattle Farming Practices:Dairy Farming: Focuses on the production of milk and dairy products. Dairy cows are often kept in barns and fed a controlled diet to maximize milk yield.Beef Farming: Involves raising cattle primarily for meat. Beef cattle are typically raised on pastures and later moved to feedlots for fattening before slaughter.Mixed Farming: Some farms manage both dairy and beef cattle, optimizing resources and diversifying income.Behavior and Welfare: Cattle are social animals that form complex social structures within herds. Proper handling and humane treatment are crucial for their welfare. Stress-free environments and adequate veterinary care are essential for maintaining healthy and productive cattle.Environmental Impact: Cattle farming significantly impacts the environment, including methane emissions, deforestation, and water usage. Innovations like rotational grazing, methane capture technology, and sustainable farming practices aim to reduce these environmental footprints.Economic Importance: The cattle industry is a major economic driver, providing livelihoods for millions worldwide. It encompasses a vast supply chain from farmers to processors, retailers, and consumers. Cattle farming also contributes to rural development and supports numerous related industries.Challenges and Future Prospects:Disease Management: Controlling diseases like foot-and-mouth disease, bovine tuberculosis, and mad cow disease is crucial for cattle health and trade.Sustainability: Addressing environmental concerns through sustainable practices and technological innovations is vital for the future of cattle farming.Market Dynamics: Fluctuations in meat and dairy prices, trade policies, and consumer preferences significantly impact the cattle industry.Resources for Further Exploration: Cattle definition Cattle, scientifically known as Bos taurus, are large domesticated ungulates primarily raised for their meat (beef), milk, and hides, as well as for draft purposes.Originally posted 2024-06-11 02:35:18. Cattle (commonly called cows), are among humankind's most important domesticated animals. They are even-toed ungulates or hoofed mammals, of the species Bos taurus of the family Bovidae, or bovids. Through history, they have had a tremendous effect on human culture, economy, and religion. Cattle were originally identified by Carolus Linnaeus as three separate species. These were Bos taurus, the European cattle, including similar types from Africa and Asia; Bos indicus, the Zebu or humped cattle found in India; and the extinct Bos primigenius, the aurochs. The aurochs are considered ancestral to both Zebu and European cattle. More recently these three have been grouped as subspecies under one species: Bos taurus; although some have suggested using the names Bos primigenius taurus, Bos primigenius indicus, and Bos primigenius primigenius. This article refers to domesticated forms of both the European cattle and the Zebu. English terminologyThe word "cattle" did not originate as a name for this group of bovine animals. It derives from the Latin caput ("head"), and thus originally meant "unit of livestock" or "one head." The word is closely related to "chattel" (a unit of property) and to "capital" in the sense of "property."Older English sources, such as the King James Version of the Bible, refer to livestock in general as "cattle," and cattle as "kine" (which comes from the same English stem as cow). Other species of the genus Bos are also often called cattle or wild cattle. An adult female over two years of age (approximately) is called a cow. An adult, intact (not castrated) male is called a bull. Young cattle are called calves. A young male is called a bull calf; a young female before she has calved the second time is called a heifer (pronounced "heffer"). A young female that has had only one calf is sometimes called a "first-calf heifer." In the United States, male cattle bred for meat are castrated unless needed for breeding. The castrated male is then called a bullock or steer, unless kept for draft purposes, in which case it is called an ox (plural oxen), not to be confused with the related wild musk ox. A male is called a stag if it is castrated as an adult. The adjective applying to cattle is bovine.The term cattle itself is not a plural, but a mass noun. Thus, one may refer to some cattle, but not three cattle. There is no singular equivalent in modern English to cattle other than the various gender and age-specific terms (though "catron is occasionally seen as a half-serious proposal). Strictly speaking, the singular noun for the domestic bovine is ox: a bull is a male ox, and a cow is a female ox. That this was once the standard name for domestic bovines is shown in place names such as Oxford. But "ox" is now rarely used in this general sense. Today "cow" is frequently used incorrectly as a gender-neutral term, although it is meant to be used solely to mean females (females of other animals, such as whales or elephants, are also called cows). To refer to a specific number of these animals without specifying their gender, it must be stated as (for example) ten head of cattle.Some Australian, Canadian, New Zealand, and Scottish farmers use the term cattlebeast or simply "beast." Obsolete terms for cattle include neat (horned oxen, from which "neatsfoot oil" is derived), beef (young ox), and beefing (young animal fit for slaughtering). In common use, the term oxen does not signify a unique bovine, but rather large and heavy set breeds of Bos taurus cattle trained as draft animals. Often they are adult castrated males.The meat of cattle is called beef. If the meat is from young calves, it is called veal. Cattle raised for human consumption are called beef cattle. Within the beef cattle industry in parts of the United States, the older term beef (plural beeves) is still used to refer to an animal of either gender. Cows of certain breeds that are kept for the milk they give are called dairy cows.Taxonomy and cattle relativesCattle belong to the Bovidae family. There are about 140 species of bovids, including buffalo, bison, antelopes, gazelles, and both wild and domesticated sheep, goats, and water buffalo.Cattle belong to the biological subfamily Bovinae (or bovines). This includes a diverse group of about 24 species of medium-sized to large ungulates, including bison, the water buffalo, the yak, and the four-horned and spiral-horned antelopes. General characteristics include a cloven hoof and usually at least one of the sexes of a species having a true horn.Very closely related to cattle are the other members of the genus Bos. The yak, Bos grunniens, is native to the Himalaya Mountains of central Asia. Yaks are a very important domestic animal to the people of the area. They are also found wild. The gaur, Bos frontalis, is native to India and Southeast Asia. It is also found both wild and domesticated. The banteng, Bos javanicus, is native to Southeast Asia and the island of Bali, where it has been domesticated and is known as "Bali cattle." The kouprey, Bos sauveli, is very rare and is found only in a small area near the border of Thailand, Cambodia, and Laos. It is not known to have ever been domesticated. All of these species, as well as bison, Bison bison and Bison bonasus, can interbreed with domestic cattle. Interbreeding with domestic cattle is not known with certainly in the case of the kouprey (Huffman 2006; Clutton-Brock 1999).BiologyCattle, like other bovids, are ruminants. They have a unique digestive system that allows them to digest cellulose and other otherwise unpalatable plant materials with the aid of symbiotic microorganisms living in their rumen, or first stomach. Cattle eat mainly grasses and leaves. They need to eat about 70 kg (150 lbs) of food every day. They also need water every day and are dependent on a ready water supply. Like most bovids, both male and female cattle have two horns on their heads, which are used in fights between individual cattle as well as to fight off predators; modern hornless breeds are an exception to this. Like all mammals, cows produce milk to feed their young. Cows are very protective of their calves. The gestation period for a cow is nine months. A newborn calf weighs approximately 35 to 45 kg. Cattle can live as long as 25 years old. Cattle are social animals, naturally living in groups or herds. In a herd, individuals support each other by watching for predators, grooming each other, and helping each other find food and water. Among the cows in a herd, there is a system of dominance with one cow the most dominant and the others ranked down to the lowest individual. There is also often a cow that acts as a leader and initiates movement to new feeding areas (Budiansky 1992).HistoryThe extinct aurochs (pronounced ou' roks or our' oks) were found throughout much of Europe, Asia, and northern Africa. They arose about two million years ago in Asia, migrated into the Middle East and further into Asia, and reached Europe about 250,000 years ago. Some were domesticated about the sixth millennium B.C.E., becoming ancestral to modern cattle. The aurochs were heavily hunted by early humans and because of this, and because of the conversion of their habitat to farm land, they gradually became extinct. In historical times, their range was restricted to Europe, and the last one was killed by a poacher in Masovia, Poland, in 1627. Pottery bull from Iran, 1250 B.C.E.The auroch was a large animal. Bulls stood about 1.7 meters (5.6 ft) tall at the shoulders and weighed about 900 kg (2,000 lbs). Cows were about 25-percent smaller. Aurochs cows and calves were red, while the bulls were black. Aurochs mainly lived in partly forested areas near rivers or streams. They formed herds with one dominant male and several females and their young. Other males lived in herds of their own (Nowak 1983). The first evidence of the domestication of cattle comes from the Middle East about 8,000 years ago. Over time, domestic cattle became smaller than their wild ancestors. The most important early use of cattle was as draft animals, mainly to pull plows. They were also killed for their meat and sometimes as sacrificial animals. They were sometimes milked, but this was secondary in importance (Clutton-Brock 1999).The keeping of cattle spread over most of the world over time. In many societies, the ownership of cattle became an important measure of wealth and social status. They were also an important resource for poor farmers. Besides being used as a draft animal and for meat and milk, cattle also provided hide, bones, horns, and fat. Their manure was used as fertilizer, for fuel, and as a building material. John Webster, British expert on animal welfare says:You know, the great thing about the cow is that she can eat plants we don't, on land the farmer might not own, and convert milk into cash for the farmer. So a cow was often the most valuable thing a farmer owned. Even during a drought, they would hold some value. So cows became an icon for value; they were simply the most valuable animal around (PBS 2004).Different breeds of cattle came into being, mainly depending on environmental conditions in different locations. The Egyptian Longhorn was one of the first distinct breeds to develop and is pictured in the pyramids, and may be among the ancestors of modern African cattle. The Zebu breed, also called Braman, developed in India. Zebus have a greater resistance to heat and insects than other breeds. Cattle were brought to North America by the Spanish in the 1500s; from them developed the Texas Longhorn'. In the 1700s and 1800s, serious effort began to be made to improve the breeds of cattle by selection and cross-breeding. Modern cattle breeds are mostly specialized to provide milk or meat and are much more productive than those of earlier times. Among the most common modern cattle breeds are the Holstein-Friesian and the Jersey for milk, and the Angus and Hereford for meat (OSU 2006).Cattle and human cultureCattle have appeared in art from prehistoric times. Cattle have also been important in religious traditions in many cultures. A shrine in Turkey from around 8,000 years ago featured auroch horns set into the altar (Clutton-Brock 1999). In ancient Egypt, the cow was associated with the mother goddess Isis, and in ancient Greece, the bull was associated with the father god Zeus. In both Western and Chinese astrology, the bull or ox is one of the signs of the zodiac. In Judaism, cattle were among the animals that were sacrificed, and in Christianity, the ox, or calf, is one of the four beasts in Revelation and is associated with Saint Luke. Sculpture of Jersey cow on Island of JerseyIn Hinduism, cattle are considered sacred and are protected from harm. The Indian patriot and religious figure Gandhi explained the Hindu feelings about cattle this way:"The cow to me means the entire sub-human world, extending mans sympathies beyond his own species. Man through the cow is enjoined to realize his identity with all that lives. Why the ancient rishis selected the cow for apotheosis is obvious to me. The cow in India was the best comparison; she was the giver of plenty. Not only did she give milk, but she also made agriculture possible. The cow is a poem of pity; one reads pity in the gentle animal. She is the second mother to millions of mankind. Protection of the cow means protection of the whole dumb creation of God. The appeal of the lower order of creation is all the more forceful because it is speechless" (Yogananda 1946).Cattle have been used in sport as well. Bull-leaping, a central ritual in Bronze Age Minoan culture, still exists in southwestern France. In Portugal, Spain, and some Latin American countries, bulls are used in the sport of bullfighting, while a similar sport, Jallikattu, is seen in south India. Other sports such as calf roping and bull riding are part of North American rodeos.Present statusThe world cattle population is estimated to be about 1.3 billion head. India is the nation with the largest number of cattle, about 400 million, followed by Brazil and China, with about 150 million each, and the United States, with about 100 million. Africa has about 200 million head of cattle, many of which are herded in traditional ways and serve largely as tokens of their owners' wealth. Europe has about 130 million head of cattle (CT 2006, SC 2006).Cattle today are the basis of a many billion dollar industry worldwide. The international trade in beef for 2000 was over US$30 billion and represented only 23 percent of world beef production (Clay 2004). The production of milk, which is also made into cheese, butter, yogurt, and other dairy products, is comparable in size to beef production and provides an important part of the food supply for much of the world's people. Cattle hides, used for leather to make shoes and clothing, are another important product. In India and other poorer nations, cattle are also important as draft animals as they have been for thousands of years. Newly born Angus calf with motherConcerns have been expressed about the impact of cattle on the environment. Pasture land for cattle grazing is now the largest agricultural land use worldwide. The conversion of natural environments to pasture land has threatened native plants and animals in many places; this is especially a problem in Brazil where large areas of rainforest are being cut down for cattle pasture. Cattle naturally produce methane gas though their digestive process and, because of their large numbers, this is thought to contribute to the process of global warming. Cattle keeping also can contribute to water pollution, air pollution, and soil degradation (Clay 2004). Feral cattle, domestic cattle which have returned to the wild, are also an environmental problem in many places (ISSG 2005). A large part of the grains, legumes, and other crops grown worldwide are used to feed cattle. Cattle keeping is also a big user of water, gasoline, and other energy sources. It has sometimes been asked if it would benefit humanity more if the cattle population was less and more of these resources were used to feed people directly (Clay 2004).ReferencesISBN links support NWE through referral feesBhattacharya, S. 2003. Cattle Ownership Makes It a Man's World. Newscientist.com. Retrieved December 26, 2006.Cattle Today (CT). 2006. Website. Breeds of Cattle. Cattle Today. Retrieved December 26, 2006)Clay, J. 2004. World Agriculture and the Environment: A Commodity-by-Commodity Guide to Impacts and Practices. Washington, DC: Island Press. ISBN 1559633700Clutton-Brock, J. 1999. A Natural History of Domesticated Mammals. Cambridge: Cambridge University Press. ISBN 0521634954Huffman, B. 2006. The Ultimate Ungulate Page. UltimateUngulate.com. Retrieved December 26, 2006.Invasive Species Specialist Group (ISSG). 2005. Bos taurus. Global Invasive Species Database.Nowak, R. M., and J. L. Paradiso. 1983. Walker's Mammals of the World. Baltimore: Johns Hopkins University Press. ISBN 0801825253Oklahoma State University (OSU). 2006. Breeds of Cattle. Retrieved January 5, 2007.Public Broadcasting Service (PBS). 2004. Holy Cow. PBS Nature. Retrieved January 5, 2007.Rath, S. 1998. The Complete Cow. Stillwater, MN: Voyageur Press. ISBN 0896583759Raudiansky, S. 1992. The Covenant of the Wild. New York: William Morrow. ISBN 0688096107Spectrum Commodities (SC). 2006. Live Cattle. Spectrumcommodities.com. Retrieved January 5, 2007.Voelker, W. 1986. The Natural History of Living Mammals. Medford, NJ: Plexus Publishing. ISBN 0937548081Yogananda, P. 1946. The Autobiography of a Yogi. Los Angeles: Self-Realization Fellowship. ISBN 0876120834 Cattle breeding has been a cornerstone of agriculture for thousands of years, with various breeds developed to meet specific environmental conditions, production needs, and economic demands. Understanding different cattle breeds is essential for farmers, ranchers, and anyone involved in livestock management.In this blog post guide, we will explore the most popular cattle breeds worldwide, their unique characteristics, optimal uses, and how to select the right breed for your specific needs.Modern cattle breeds can be broadly categorized into dairy breeds, beef breeds, and dual-purpose breeds. Each category serves distinct purposes in agricultural systems, from milk production to meat quality and even draft work in some regions. The selection of appropriate breeds depends on factors such as climate, available resources, market demands, and management capabilities.Understanding Cattle Breed ClassificationsPrimary Categories of Cattle BreedsCattle breeds are systematically classified based on their primary production purposes and genetic characteristics. This classification system helps farmers and ranchers make informed decisions about which breeds will perform best in their specific situations.1. Dairy Breeds: These breeds are specifically selected and bred for high milk production, milk quality, and efficient feed conversion to milk. They typically have refined body structures, well-developed udders, and excellent reproductive efficiency.2. Beef Breeds: Developed primarily for meat production, these breeds exhibit superior muscle development, efficient feed conversion to meat, and desirable carcass characteristics. They generally have more muscular builds and better meat marbling.3. Dual-Purpose Breeds: These versatile breeds provide both milk and meat production, making them valuable for diversified farming operations. While they may not excel in either category compared to specialized breeds, they offer flexibility and economic stability.Top Dairy Cattle Breeds1. Holstein-FriesianThe Holstein-Friesian stands as the worlds most popular dairy breed, renowned for exceptional milk production capabilities. Originating from the Netherlands, these distinctive black and white cattle have become the foundation of modern dairy operations globally.Physical Characteristics: Holstein cattle are large-framed animals with mature cows weighing 580-700 kg (1,280-1,540 lbs) and standing 145-150 cm tall at the shoulder. Their characteristic black and white markings make them easily recognizable, though red and white variations exist.Production Performance: Holstein cows are unmatched in milk volume, with average annual production ranging from 6,000-10,000 kg (13,200-22,000 lbs) of milk. Top-producing animals can exceed 15,000 kg annually. Their milk typically contains 3.6-3.7% butterfat and 3.1-3.2% protein.Advantages: Superior milk production, excellent feed conversion efficiency, strong genetic base for breeding programs, and adaptability to various management systems make Holsteins the preferred choice for commercial dairy operations.Disadvantages: Higher nutritional requirements, susceptibility to heat stress, shorter productive lifespan compared to some breeds, and lower butterfat content relative to other dairy breeds.2. JerseyJersey cattle, originating from the Channel Island of Jersey, represent the epitome of efficiency in dairy production. These smaller, fawn-colored cattle are prized for their rich milk composition and excellent feed conversion ratios.Physical Characteristics: Jersey cattle are notably smaller than Holsteins, with mature cows weighing 350-450 kg (770-990 lbs). They typically display shades of fawn, ranging from light tan to dark brown, often with darker points on the legs, head, and tail.Production Performance: While Jersey cows produce less total milk volume (4,000-6,000 kg annually), their milk is exceptionally rich in butterfat (4.5-5.5%) and protein (3.6-3.8%). This high-quality milk is particularly valuable for cheese and butter production.Advantages: Exceptional milk quality, superior feed efficiency, heat tolerance, longevity, and lower maintenance costs make Jerseys ideal for specialized dairy operations and smaller farms.Disadvantages: Lower total milk volume, smaller calf size, and potential calving difficulties when crossbred with larger breeds.3. GuernseyGuernsey cattle, another Channel Island breed, are distinguished by their golden-colored milk and excellent grazing ability. These medium-sized cattle have gained popularity for their balanced milk production and quality.Physical Characteristics: Guernsey cattle are medium-sized with distinctive golden-fawn coloring, often with white markings. Mature cows typically weigh 450-500 kg (990-1,100 lbs) and are known for their gentle temperament and attractive appearance.Production Performance: Guernsey cows produce 5,000-7,000 kg of milk annually with butterfat content of 4.5-5.0% and protein levels of 3.4-3.6%. Their milk is naturally golden-colored due to high beta-carotene content.Top Beef Cattle Breeds1. Angus (Aberdeen Angus)Angus cattle, originating from Scotland, are globally recognized for producing high-quality beef with excellent marbling and tenderness. Both Black Angus and Red Angus varieties are highly valued in commercial beef production.Physical Characteristics: Angus cattle are naturally hornless (polled) with solid black or red coloring. They are medium to large-sized cattle with mature cows weighing 500-650 kg (1,100-1,430 lbs) and bulls weighing 850-1,000 kg (1,870-2,200 lbs).Production Performance: Angus cattle excel in feed conversion efficiency, with average daily weight gains of 1.4-1.8 kg. Their meat is renowned for superior marbling, tenderness, and flavor, commanding premium prices in the market.Advantages: Excellent meat quality, strong maternal instincts, adaptability to various climates, efficient feed conversion, and strong market demand for Angus beef.Disadvantages: Susceptibility to heat stress, higher feed costs for optimal performance, and potential for excessive fat deposition in some feeding programs.2. HerefordHereford cattle, developed in England, are among the most recognizable beef breeds with their distinctive red bodies and white faces. They have been instrumental in establishing beef industries worldwide.Physical Characteristics: Herefords are characterized by their red bodies with white faces, white markings on legs and underline, and naturally hornless or horned varieties. Mature cows weigh 550-650 kg (1,210-1,430 lbs).Production Performance: Herefords demonstrate excellent foraging ability and adaptability to extensive grazing systems. They produce high-quality beef with good marbling and are known for their efficient reproduction rates.Advantages: Excellent foraging ability, adaptability to harsh conditions, strong maternal instincts, longevity, and consistent performance in various environments.Disadvantages: Susceptibility to eye problems due to lack of pigmentation around eyes, potential for sunburn, and slower growth rates compared to some continental breeds.3. CharolaisCharolais cattle, originating from France, are large-framed beef cattle known for their impressive size, muscling, and lean meat production. They have become important terminal sires in crossbreeding programs.Physical Characteristics: Charolais are large, muscular cattle with cream to white coloring and pink skin. Bulls can weigh 1,000-1,200 kg (2,200-2,640 lbs), while cows typically weigh 650-800 kg (1,430-1,760 lbs).Production Performance: Charolais cattle exhibit rapid growth rates with daily weight gains often exceeding 2.0 kg. They produce lean beef with excellent muscling and are valued for their size and growth potential.Dual-Purpose Cattle Breeds1. SimmentalSimmental cattle, originating from Switzerland, represent one of the most successful dual-purpose breeds, excelling in both milk and beef production. Their versatility has made them popular worldwide.Physical Characteristics: Simmentals are large-framed cattle with golden-red coloring and white markings on the head, legs, and belly. They are among the largest cattle breeds, with cows weighing 650-800 kg (1,430-1,760 lbs).Production Performance: Simmental cows can produce 5,000-7,000 kg of milk annually while maintaining excellent beef characteristics. Their calves show rapid growth rates and produce high-quality beef.Advantages: Versatility in production, excellent mothering ability, adaptability to various climates, strong growth rates, and good feed conversion efficiency.Disadvantages: Higher nutritional requirements, potential calving difficulties due to large calf size, and need for adequate facilities to handle their size.2. ShorthornShorthorn cattle, one of the oldest improved breeds from England, have been developed into both dairy and beef types. They are known for their adaptability and ease of management.Physical Characteristics: Shorthorns display various color patterns including red, white, and roan. They are medium to large-sized cattle with good body depth and muscling.Production Performance: Dual-purpose Shorthorns can produce 4,000-6,000 kg of milk annually while maintaining good beef characteristics. They are known for their longevity and reproductive efficiency.Cattle Breed Comparison TablesDairy Breed ComparisonBreedAverage Milk Production (kg/year)Butterfat (%)Protein (%)Mature Weight (kg)OriginHolstein-Friesian8,000-10,0003.6-3.73.1-3.2580-700NetherlandsJersey4,500-6,0004.5-5.53.6-3.8350-450Jersey IslandGuernsey5,500-7,0004.5-5.03.4-3.6450-500Guernsey IslandAyrshire6,000-8,0003.8-4.03.3-3.4450-550ScotlandBrown Swiss6,500-8,5004.0-4.23.4-3.6600-700SwitzerlandBeef Breed ComparisonBreedMature Weight Bulls (kg)Mature Weight Cows (kg)Growth RatePrimary UseOriginAngus850-1,000500-650ExcellentPremium beefScotlandHereford800-1,100550-650GoodBeef productionEnglandCharolais1,000-1,200650-800ExceptionalTerminal sireFranceLimousin900-1,100600-700ExcellentLean beefFranceBrahman800-1,000500-600GoodHeat toleranceIndiaDual-Purpose Breed ComparisonBreedMilk Production (kg/year)Beef QualityAdaptabilityMature Weight Cows (kg)Best UseSimmental5,500-7,000ExcellentHigh650-800Large operationsShorthorn4,500-6,000GoodVery High500-650Small-medium farmsRed Poll4,000-5,500GoodHigh500-600Extensive systemsDexter2,500-3,500GoodExcellent300-400Small farmsClimate Adaptability and Regional Considerations1. Temperate Climate BreedsCattle breeds developed in temperate regions typically perform best in moderate climates with adequate rainfall and seasonal temperature variations. Holstein-Friesians, Jerseys, and most European breeds fall into this category.Optimal Conditions: These breeds thrive in temperatures between 5-25C (41-77F) with annual rainfall of 600-1,200mm. They require protection from extreme heat and cold.Management Considerations: Adequate shelter, ventilation systems, and cooling methods are essential during hot weather. These breeds may require additional energy supplementation during cold periods.2. Tropical and Subtropical AdaptationsBreeds adapted to tropical and subtropical climates have developed specific characteristics to handle heat stress, humidity, and disease pressures common in these regions.Heat-Adapted Breeds: Brahman, Nelore, and their crosses demonstrate superior heat tolerance through larger surface area, increased sweat gland density, and heat-dissipating body structures.Disease Resistance: Tropical breeds often show natural resistance to parasites and diseases prevalent in hot, humid climates, reducing veterinary costs and improving survival rates.3. Cold Climate ConsiderationsBreeds developed in cold climates have adapted to harsh winters and short growing seasons. These cattle typically have thicker hair coats, increased feed conversion efficiency, and strong foraging abilities.Cold-Hardy Breeds: Scottish Highland, Galloway, and some Scandinavian breeds excel in cold climates with their thick double coats and efficient metabolism.Selection Criteria for Choosing Cattle Breeds1. Production Goals AssessmentThe primary consideration in breed selection should align with your specific production objectives. Dairy operations require breeds with high milk production and quality, while beef operations need breeds with superior growth rates and meat quality.Questions to Consider:What is your primary income source: milk, beef, or both?What are your target markets and their quality requirements?Do you need breeding stock or commercial production animals?What is your expected production scale and timeline?2. Environmental FactorsEnvironmental conditions significantly impact breed performance and should be carefully evaluated before selection.Climate Considerations:Temperature extremes and seasonal variationsRainfall patterns and drought frequencyAltitude and terrain characteristicsForage availability and quality throughout the yearInfrastructure Requirements:Housing and shelter needsFeeding and water systemsHandling facilities and equipmentVeterinary and breeding services availability3. Economic FactorsEconomic considerations play a crucial role in breed selection, affecting both initial investment and long-term profitability.Cost Analysis:Initial purchase price and breeding costsFeed requirements and availabilityVeterinary and healthcare expensesInfrastructure development and maintenanceMarket prices for products and breeding stock4. Management CapabilityDifferent breeds require varying levels of management expertise and resources. Honest assessment of your management capabilities is essential for success.Management Factors:Experience level with cattle breeding and managementAvailable labor and time commitmentTechnical knowledge and learning willingnessFinancial resources for proper managementAccess to professional advice and supportBreeding and Genetic Considerations1. Crossbreeding StrategiesCrossbreeding can combine the best characteristics of different breeds while potentially reducing genetic defects through hybrid vigor (heterosis).Common Crossbreeding Systems:Two-breed cross: Simplest system combining two breedsThree-breed rotation: Maintains hybrid vigor over multiple generationsComposite breeds: Stabilized combinations of multiple breedsTerminal sire systems: Specialized breeding for specific market requirementsGenetic Evaluation and SelectionModern cattle breeding relies heavily on genetic evaluation tools to identify superior breeding animals and predict offspring performance.Key Evaluation Tools:Expected Progeny Differences (EPDs): Predict genetic merit of offspringGenomic testing: DNA-based selection for improved accuracyPerformance records: Actual production data for decision-makingPedigree analysis: Genetic diversity and relationship assessmentHealth and Management Considerations1. Disease Susceptibility by BreedDifferent breeds show varying susceptibility to specific diseases and health conditions, influencing management requirements and veterinary costs.Common Health Considerations:Metabolic disorders: Milk fever, ketosis, and displaced abomasum in high-producing dairy breedsReproductive issues: Calving difficulties in large-framed breedsHeat stress: Susceptibility in temperate breeds in hot climatesGenetic defects: Breed-specific inherited conditions2. Nutritional RequirementsNutritional needs vary significantly between breeds based on their production levels, body size, and metabolic efficiency.Nutritional Factors:Energy requirements: Higher for dairy breeds and fast-growing beef breedsProtein needs: Increased for lactating cows and growing animalsMineral requirements: Specific needs for bone development and milk productionVitamin supplementation: Necessary for optimal health and performanceFuture Trends in Cattle Breeding1. Sustainable Agriculture IntegrationModern cattle breeding increasingly focuses on sustainability, environmental impact, and efficiency improvements.Sustainability Trends:Reduced methane emissions through genetic selectionImproved feed efficiency and resource utilizationEnhanced disease resistance and reduced antibiotic useBetter adaptation to climate change effects2. Technological AdvancesTechnology continues to revolutionize cattle breeding through improved selection tools and management systems.Emerging Technologies:Genomic selection: Accelerated genetic improvementPrecision agriculture: Optimized feeding and managementAutomated monitoring: Health and performance trackingArtificial intelligence: Decision support systemsConclusionSelecting the right cattle breed is a critical decision that impacts the success and profitability of any cattle operation. This comprehensive guide has explored the characteristics, advantages, and considerations for popular cattle breeds across dairy, beef, and dual-purpose categories.The key to successful breed selection lies in matching breed characteristics with your specific production goals, environmental conditions, management capabilities, and market requirements. Whether choosing high-producing Holstein-Friesians for intensive dairy operations, hardy Herefords for extensive beef production, or versatile Simmentals for dual-purpose systems, understanding breed characteristics enables informed decision-making.As the cattle industry continues to evolve with changing consumer demands, environmental concerns, and technological advances, breed selection strategies must adapt accordingly. The future of cattle breeding lies in combining traditional breed knowledge with modern genetic tools, sustainable practices, and efficient management systems.Success in cattle breeding requires ongoing education, careful planning, and adaptation to changing conditions. By understanding the information presented in this guide and staying current with industry developments, producers can make informed decisions that lead to sustainable and profitable cattle operations.The diversity of cattle breeds available today offers opportunities for every type of operation, from small-scale family farms to large commercial enterprises. The key is matching the right breed to the right situation, ensuring optimal performance, animal welfare, and economic returns for years to come.This article needs additional citations for verification. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed.Find sources:"List of cattle breeds"news newspapers books scholar JSTOR (March 2019) (Learn how and when to remove this message)Over 1000 breeds of cattle are recognized worldwide, some of which adapted to the local climate, others which were bred by humans for specialized uses.[1]Cattle breeds fall into two main types, which are regarded as either two closely related species, or two subspecies of one species. Bos indicus (or Bos taurus indicus) cattle, commonly called zebu, are adapted to hot climates and originated in the tropical parts of the world such as India, Sub-saharan Africa, China, and Southeast Asia. Bos taurus (or Bos taurus taurus), typically referred to as "taurine" cattle, are generally adapted to cooler climates and include almost all cattle breeds originating from Europe and northern Asia.In some parts of the world further species of cattle are found (both as wild and domesticated animals), and some of these are related so closely to taurine and indicus cattle that interspecies hybrids have been bred. Examples include the Dwarf Lulu cattle of the mountains of Nepal with yak blood,[2] the Beefalo of North America with bison genes, the Selembu breed of India and Bhutan with gayal genes. The Madura breed of Indonesia may have banteng in its parentage.[3] In addition to these fertile hybrids, there are sterile hybrids such as the male Dzo of Nepal, a cattle-yak hybrid which is bred for agricultural work - like the mule and the hinny, they have to be continually bred from both of the parent species.BreedImageSubspeciesCountry/region of originMeatDairyDraughtOtherAberdeen AngusTaurusScotlandMeatDairyAbergeleEthiopiaMeatDairyDraughtAbigarTaurusEthiopiaDairyAbondanceTaurusFranceMeatDairyAbyssinian Shorthorned ZebuIndicusEthiopiaDraughtAcehIndicusIndonesiaMeatAchhamIndicusNepalDairyAdamawaTaurusNigeriaMeatDairyDraughtAdaptaurTaurus/Indicus hybridAustraliaMeatAfarIndicusEthiopiaMeatDairyAfricangusTaurus/Indicus hybridSouth AfricaMeatAfrikanerIndicusSouth AfricaMeatAgeroleseTaurusItalyDairyAlambadiIndicusIndiaAlatauTaurusKazakhstanMeatDairyAlbanianTaurusAlbaniaDairyDraughtAlberaTaurusSpain, FranceMeatSemi-feralAlderneyTaurusChannel IslandsDairyAlentejanaTaurusPortugalMeatDraughtAleutian wild cattleUnited StatesFeralAliad DinkaSouth SudanAlistana-SanabresaSpainAllmogekorTaurusSwedenMeatDraughtAlurDemocratic Republic of the CongoAmericanTaurus/Indicus hybridUnited StatesMeatAmerican AngusUnited StatesMeatAmerican Beef FriesianUnited StatesAmerican Brown SwissTaurusUnited StatesDairyAmerican Milking DevonTaurusUnited StatesMeatDairyDraughtAmerican White ParkTaurusUnited StatesMeatDairyAmerifaxTaurusUnited StatesMeatDairyAmrit MahalIndicusIndiaDeveloped from Hallikar cattle for war purposesAmsterdam Island cattleTaurusAmsterdam IslandFeralAnatolian BlackTaurusTurkeyMeatDairyDraughtAndalusian BlackTaurusSpainMeatEndangeredAndalusian BlondSpainAndalusian GreySpainAngelnTaurusGermanyDairyAngoniMalawiAnkinaUnited StatesAnkoleEast Africameatdairy Ankole-WatusiIndicusUnited StatesShowAracenaSpainAradoEthiopiaMeatDairyDraughtArgentine CriolloTaurusArgentinaMeatDairyArgentine FriesianArgentinaDairyArmoricanTaurusFranceMeatDairyArouquesaTaurusPortugalMeatDairyArsiEthiopiaAsturian MountainTaurusSpainMeatDairyAsturian ValleyTaurusSpainMeatDairyAubracTaurusFranceMeatDairyAulie-AtaTaurusKazakhstanDairyAure et Saint-GironsTaurusFranceMeatDairyDraughtAustralian BrafordTaurus/Indicus hybridAustraliaMeatAustralian BrangusTaurus/Indicus hybridAustraliaMeatAustralian CharbrayTaurus/Indicus hybridAustraliaMeatAustralian Friesian SahiwalTaurus/Indicus hybridAustraliaDairyAustralian LowlineTaurusAustraliaMeatAustralian Milking ZebuTaurus/Indicus hybridAustraliaDairyAustralian ShorthornAustraliaMeatAustrian SimmentalAustriaAustrian YellowAustriaAvtonouTogoAvilea-Negra IbricaSpainAweil DinkaSouth SudanAyrshireTaurusScotlandDairyAzaouakMaliAzebuadoBrazilAzerbaijan ZebuAzerbaijanAzoresPortugalBreedImageSubspeciesCountry/region of originMeatDairyDraughtOtherBachaur cattleIndicusIndiaDairyDraughtBaherie cattleIndicusEritreaMeatDairyBakosi cattleTaurusCameroonMeatRitualsBalancerTaurusUnited StatesMeatDairyGelbvieh/American Angus crossbreedBali cattleBantengIndonesiaMeatBaouleTaurusIvory CoastDairyBargur cattleIndicusIndiaDairyDraughtSemi-wild, native to Bargur forest region, bred and grazed by the local Lingayat communityBarrosTaurusPortugalMeatDraughtBarzonaTaurus/Indicus hybridUnited StatesMeatBazadaiseTaurusFranceMeatBeef FreisianTaurusUnited StatesMeatDairyBeefaloTaurus/American bison hybridUnited StatesMeatBeefmakerTaurus/Indicus hybridUnited StatesMeatBeefmasterTaurus/Indicus hybridUnited StatesMeatBegayEthiopiaMeatDairyDraughtBelgian BlueTaurusBelgiumMeatDairyBelgian RedTaurusBelgium, FranceMeatDairyDraughtEndangered breedBelgian Red PiedTaurusBelgiumMeatDairyBelgian White-and-RedTaurusBelgiumMeatDairyBelmont RedTaurus/Indicus hybridAustraliaMeatBelted GallowayTaurusScotlandMeatBerneseSwitzerlandBerrenda cattleTaurusSpainMeatDairyDraughtSportBetizuTaurusSpain, FranceMeatDraughtSemi-feralB

Biodiversity". www.biodiversityofindia.org.^ "Rathi - India: Suratgarh Rajasthan^ "A.K. Fazlul Haque Bhuiyan, Department of Animal Breeding & Genetics, Bangladesh Agricultural University, Mymensingh 2202, BANGLADESH"^ Sharma, Amit Kumar; etal. (2004). "Molecular Characterization of Rathi and Tharparkar Indigenous Cattle (Bos indicus) Breeds by RAPD-PCR". Asian-Australasian Journal of Animal Sciences. 17 (9): 12041209. doi:10.5713/ajas.2004.1204.^ Nair, Madhavan (31 July 2010). "Milk of the indigenous Vechur cow beneficial to health". The Hindu via www.thehindu.com.^ Pillai, R. Ramabhadran (8 January 2012). "Study points to medicinal value of Vechur cow milk". The Hindu via www.thehindu.com.^ "Medicinal property of Vechur cow milk confirmed". News18. 5 January 2012.Wikimedia Commons has media related to Cattle breeds.Breeds of Cattle Oklahoma State UniversityBreeds of Cattle Cattle.comBreeds of Cattle Cow World (archived 19 January 2017)Cattle Breeds Embryoplus.com (archived 29 November 2013)Breeds of Cattle Official 2nd EditionCattle Breeds of the WorldPortuguese Cattle Breeds (archived 17 January 2016)EuReCa Towards self-sustainable EUropean, REgional CAttle breedsNative cow varieties of IndiaRetrieved from " and highly social animals, cows have had a close relationship with humans for centuries.Intelligent and highly social animals, cows have had a close relationship with humans for centuries.Cows are gentle beasts that have co-existed with humans for centuries.1 Since their domestication, cows have played an invaluable role in aiding ancient humankinds transition from hunting gatherers to a more agricultural society.2India is the country with the largest number of milk-producing cows on the planet at over 61 million in 2023.3Depending on the breed, cows drink an average of 50-100 litres of water every day an entire bathtubs worth.4Cows have a keen sense of smell and can pick up scents from many miles away. They particularly love the smell of coffee!5Cattle lack the red retina receptorin their eyes and can only see shades of certain colours: yellow, green, blue, and violet.6Cows who listen to music may produce more milk.7Much like dogs, cows lick each other to express friendship and trust. One study found that pregnant cows get more licks than others in the same herd.8Every year, a single cow belches an average of 99kg of methane, adding to the greenhouse gases that are warming our planet.9Modern cows and bulls are the descendants of an ancient, extinct species called the aurochs, which lived two million years ago and survived until the 1600s.10 Aurochs were large, fierce animals that weighed about 1,000kg and wielded sharp horns.11The cows that we know are gentle, peace-loving and intelligent creatures. To date, more than 1,000 breeds of cattle have been catalogued around the world.12 Each country has its own distinctive, indigenous breeds.13To date, more than 1,000 breeds of cattle have been catalogued around the world. Daniel Quiceno | UnsplashOne of the most well-known cow breeds is the Holstein-Friesian, considered one of the best milk-producing cows in the world.14 It was imported to the US by Winthrop Chenery, a Massachusetts breeder.15 Other cows that are prized for their milk include the Jersey (light-brown cows originating in the island of Jersey in the English Channel) and the Guernsey (found widely across the US, UK and Australia).16India is home to the worlds largest number of milk-producing cows, with more than 50 registered breeds.17Of these, one of the most intriguing is the tiny Punganur dwarf cattle, which has a broad forehead, a prominent hump on its back, crescent-shaped horns, stubby legs and pointed ears.18 An indigenous breed native to the southern Indian state of Andhra Pradesh, Panganur cows are known for their abundant milk supply producing up to five litres a day. This milk is nutritionally rich, higher in fat and protein than the milk of many other breeds.19 Punganar cows are also efficient grazers, consuming far fewer resources than other cattle, which makes them a big hit with farmers.20Another Indian breed, the Nelore, made global headlines when one cow reached the jaw-dropping price of $4.8 million at an auction in Brazil.21 The cow, named Viatina-19, weighed 1,088kg at the time of the auction. According to reports, her record-breaking price was due to her exceptional growth, strong muscling and structural correctness. 22The sounds that a cow or bull makes is called a low, but is often referred to colloquially as a moo.23Mooing can be high-pitched and intense, or low and gravelly like a moan. But this isnt just barnyard babble. These are sounds that cows use to communicate.24 Researchers have found there are unique moos for different situations. For instance, when a cow is separated from her calf, her moos are loud and high-pitched, indicating deep distress. Studies have also shown that cows use mooing to help express complex emotions and can even identify one another based on their moos, just as we can recognise the voices of our loved ones.25Researchers have found there are unique moos for different situations. Luke Stackpoole | UnsplashYes, mature female cattle need to give birth before they can produce milk.26To ensure a steady supply of milk to meet global dairy demand, farmed cows are often artificially inseminated, or encouraged to conceive naturally, around three months after giving birth to maintain a regular cycle of milk production.27 On average, farm-reared dairy cows give birth to one calf per year, producing their first offspring when they are roughly two years of age.28 Calves are often separated from their mothers within a day after birth a practice known as early separation.29 Some studies suggest that bonding between the cow and calf intensifies after 24 hours. When separation occurs after this bond has formed, it can lead to increased anxiety in both animals. Cows and calves may vocalise more, show heightened activity and often attempt to reach out of their pens.30Although early separation may reduce short-term distress, studies have shown that prolonged contact can have positive long-term effects on the calf.3 On average, farm-reared dairy cows give birth to one calf per year. Victoria Duarte | UnsplashCows typically sleep for four hours a day. One hour of this time is spent in REM (Rapid Eye Movement), a deep phase of sleep that is restorative.32 While the amount of time a cow sleeps might seem limited, a great deal of the day is spent lying down and resting.Cows rest for nine to 11 hours each day for around an hour at a time, especially during the night. Studies have shown that lying down is very beneficial for a cows digestion and helps to increase milk production.33If time is limited, cows would choose to spend time lying down rather than eating.34 You can tell if a cow is asleep by the position of her head. During deep sleep, her head and neck will be motionless.35Cows rest for nine to 11 hours each day for around an hour at a time. Nyatsine | UnsplashResearchers have observed that increasing global temperatures have impacted the sleep pattern of cows, affecting their health and milk productivity.36A cow has only one stomach made up of four chambers, with each used in a different way to break down a cow's hard-to-digest diet of grass and vegetation.37 The first part of the stomach is the rumen. This is the largest chamber and can hold 95 litres of feed.38 The rumen has two main roles. It holds the chewed-up food and also acts as a fermentation vat, housing the many microbes used to break down food.39From the rumen, the broken-down food is passed to the second chamber, the reticulum. This is a pouch-like structure that acts as a filter, separating the larger, more unwieldy pieces of food. The filtered food is passed into the third chamber or the omasum, which is made up of folded tissue that resembles the pages of a book. Its the omasums job to absorb water before it passes into the fourth chamber. This is the abomasum and is often referred to as the true stomach as this is where the dietary proteins are digested and absorbed into the cows body.40The fact that the rumen is home to hundreds of trillions of microbes has fascinated researchers. This microbiome, which is composed of bacteria, fungi and protozoa, is vital to the cow's health.41 One study established that a cows microbiome was extremely complex, colonised by over 339 microbes that could be heritable or transmitted from parents to offspring.42By studying the microorganisms that live in a cows stomach, researchers hope to improve cattle health and productivity. This could also have an added benefit for the environment.By studying the microorganisms that live in a cows stomach, researchers hope to improve cattle health and productivity. Dylan Leagh | UnsplashOne microbe that cattle have in their rumen is called methanogen.43 This is the microbe that produces methane as a by-product of fermentation. The methane gas is then belched out by the cow which adds to the greenhouse gases that are already warming our planet.44 One area of study hopes to disrupt the methanogens methane production process using a vaccine, so less is released by the cow.45 Poor digestion can also increase a cows methane production, so changes in feed may also help to reduce how much a cow emits. Every year, a single cow belches an average of 99kg of methane.46Dairy cows spend an average of eight hours a day chewing cud, which is regurgitated food.47This amounts to 30,000 individual chews, and this is part of a process called rumination, which aids digestion.During rumination, the chewed-up cud is stored in the first part of the stomach, the rumen. The stored food is brought back up and then chewed again, mixing with saliva to form a ball-like bolus. Cows swallow this bolus and then regurgitate it, repeating the process again and again. But this is not just idle chewing. Rumination makes food easier to digest by the microbes living in the cows stomach.48Rumination makes food easier to digest by the microbes living in the cows stomach. Mark de Jong | UnsplashCows and bulls are not naturally aggressive. External provocation or perceived threats can result in a spike of aggressive tendencies in cows and bulls.49 Aggressive traits may also crop up due to hormonal conditions. And while they dont usually attack people, cows do have a tendency to fight among themselves, even more than bulls do.50 One reason bulls are considered more aggressive is down to the widely held belief that they charge at the sight of the colour red. However, this is just a myth.Cattle are, in fact, partially colour blind and red is one of the colours they can't see.51 When a bull charges at a matadors cape, it's usually because its irritated by the movement of the material, rather than its bright colour.External provocation or perceived threats can result in a spike of aggressive tendencies. Anand Thakur | UnsplashCows have a keen sense of smell and can pick up scents from many miles away.52 They have even been known to enjoy the scent of coffee.53In a study carried out by researchers from Denmark in 2017, and published in the journal Applied Animal Behavior Science, it was established that cows had a powerful sense of smell that served them in many ways. The test was conducted on individual animals, and in the farms and homes where they were housed. Researchers worked with 10 cows and 13 heifers. Coffee, orange juice and odourless tap water were presented to each of these cows in a bucket. Each odour was presented twice in a row, for two minutes each. There was a pause of two minutes, allowing the cows to sniff it. Researchers recorded the cows reactions, observing how long they sniffed, and whether they licked or bit at the buckets.They found that all animals sniffed at the coffee the longest, followed by orange juice. They showed the least interest in the odourless water. They licked and bit the buckets with the coffee the most, followed by the orange juice. The test showed that cows and heifers were able to distinguish between different complex odours and that they showed a clear preference to certain scents.A cows sense of smell however does a lot more for it in its daily life it influences its reproductive behaviour.A bull can detect if a cow is ready to mate or not based on a specific compound in the cows urine.54 The scent of a bulls pheromones can induce puberty in heifers.5The scent of a bulls pheromones can induce puberty in heifers. Stephen Wheeler| UnsplashCows are relatively friendly animals and research has shown that they have many traits that we humans can relate to. They play, have best friends among their herd and can be affectionate.56 These behaviours would suggest that they would be good pets.Cows are relatively friendly animals and have many traits that we humans can relate to. Alexander Dummer | UnsplashHowever, there are a number of reasons why keeping cows as pets is discouraged for most people, especially if you live in a city. Cows need lots of space and plenty of grass to graze on.57 They also need access to food, fresh water, and have to be kept in large barns or sheds that protect them from extreme weather. Cows are also social animals and tend to thrive when they live in herds.58 Keeping a single cow as a pet may not be a good idea but caring for several, if you have the space and the skills required, could be as rewarding as looking after cats or dogs.Researchers say that tweaking a cows diet so that digestion is more efficient such as adding more soya to their meals, replacing grass with maize or experimenting with probiotics could be key to limiting methane emissions.59 One more unusual suggestion is a methane-collecting backpack. Scientists from Argentinas National Institute of Agricultural Technology tried this back in 2008. They strapped balloon-like plastic bags onto the backs of cows to measure the extent of their flatulence and its impact on global warming.60 A tube attached through the skin to the animals stomachs collected the gas inside the backpack, which they were then able to measure. The results were quite surprising a standard 550kg cow produced between 800 and 1,000 litres of emissions every day. This led the scientists to infer that as much as 30% of Argentinas greenhouse gases could be caused by their 55 million cows.Researchers say that tweaking a cows diet so that digestion is more efficient could be key to limiting methane emissions. Feybien | UnsplashMany farmers and ranchers are now adopting an agricultural approach called precision livestock farming (PLF), which involves the use of technology to monitor and manage livestock.61 This involves reducing waste, greenhouse gas emissions and making efficient use of resources.Cattle wear sensors to track their vital signs, movement and behaviour in real-time, helping farmers to detect health issues early, improve their breeding, optimise milk output, all while monitoring their digestion closely to regulate their impact on the environment.Yes, it seems they do! Studies have established that relaxing melodies may have a positive effect on cattle, as long as they are interspersed with periods of silence.62Two music researchers, Adrian North and Liam MacKenzie, from the University of Leicester in the UK, put this theory to the test by playing two different kinds of music to 1,000 Holstein-Friesian cattle. Some cattle were exposed to fast-paced music of 120 beats per minute, others to slower melodies under 100bpm, while a final group experienced no music at all. The results indicated that the cows who heard music such as Beethovens Pastoral Symphony or Simon & Garfunkels Bridge over Troubled Water yielded 3% more milk than those exposed to faster-paced music such as Bananaramas song Venus.They also detected a small decline in milk production from those cows who experienced excessively loud music.63Studies have established that relaxing melodies may have a positive effect on cattle, as long as they are interspersed with periods of silence.Kamala ThiagarajanKamala Thiagarajan is a science journalist based in Madurai, Southern India. She reports on environmental issues, global health, and development.Cows are not an endangered species.However, there are some rare breeds whose numbers are limited, such as the Panganur cow. In 2012, there were only 2,000 of these miniature cows left in India, prompting scientists to find ways to keep this endangered breed alive.64 One method the Indian government tried to improve numbers was surrogacy. A hundred healthy and mature Panganur cows were identified as embryo donors, and 25 viable embryos were produced each year.65This seems to have had an effect, as a survey in 2022 revealed that numbers had grown to 8,806 cows.66Cows are not an endangered species.However, there are some rare breeds whose numbers are limited. Anipixels | UnsplashIts not always possible to revive a dying breed. Pineywoods is one of the oldest cattle breeds in the southeastern United States. These speckled brown and white cows with handlebar horns are now in danger of extinction as a result of excessive crossbreeding.67 Each crossbreed, while healthy, had its own distinctive traits and characteristics that made it very different from the parent breed. As a result, only 12 purebred Pineywoods are left.68Yes, cows do have predators. In the wild, cattle can be attacked by wolves, spotted hyenas, lions, leopards, tigers and grizzly bears.69Death loss statistics issued by the United States Department of Agriculture indicates that more calves are lost to predators than adult cattle.70 A rise in the predation of cattle by wolves at Yellowstone National Park in the US. has been a cause for concern and conflict.71 Ranchers have complained that livestock management around the park has been increasingly challenging, ever since the wolf population grew.72As a response to fear, threats from predators and even general stress and anxiety, cows rely on a technique called bunching, where they recognise danger and close ranks.73 Bunching begins when a dominant cow directs three or four others to form a close-knit group. Slowly, this stress and apprehension spreads to other members of the herd who start bunching as well. When faced with a predator in the wild, this technique helps the herd protect their vulnerable calves.74 Cows even have the innate ability to bunch when theyve been raised on farms.Cows have the innate ability to bunch when theyve been raised on farms. Niels and Marco| UnsplashRanchers are always alert to any signs of bunching as it can compromise a cows health and well-being, increasing stress and resulting in a loss of milk production.75Despite their weight and size, cows are natural swimmers. Thats because they have a long body and short legs, which provides them with natural buoyancy. They also have powerful leg muscles that can carry them for miles in the water.76 On a farm beside Strangford Lough, the largest inlet in Northern Ireland, cows have to swim across the waters every year to get to the greener pastures on the other side.77Necessity aside, cows do not swim unless they absolutely have to. Instead, they tend to prefer wet, low-lying areas and, given the opportunity, will wade into shallow water on a hot day.Cows prefer to wade into shallow water on a hot day. Lorenzo Lamonica | UnsplashFeatured image Jonas Koel | UnsplashFun fact image Subtle Cinematics | UnsplashQuick facts:1. What Eats Team, What Eats a Cow?, What Eats What?, October 8, 2024, Bernard M. Kissui, Department of Ecology, Evolution & Behavior, University of Minnesota, Livestock predation by lions, leopards, spotted hyenas, and their vulnerability to retaliatory killing in the Maasai steppe, Tanzania 2. Understanding Animal Research. Cattle, Accessed March 16, 2025, . ANN BIGGS OF GCI. Cattle Factsheet, n.d. Cattle+Factsheet4. Vechur | Dairy Knowledge Portal, n.d. Chianina, n.d., . Britannica Kids. Cattle, n.d. World Animal Protection US. Cow Facts, n.d. . Cattle Population by Country 2024, n.d. 8. Statista. Cattle Population Worldwide 2012-2022, August 9, 2024. . Base. 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Evening Standard. and highly social animals, cows have had a close relationship with humans for centuries.Intelligent and highly social animals, cows have had a close relationship with humans for centuries.kingdom: Animalia (Animals)phylum: Chordataclass: Mammaliaorder: Artiodactyla, Bovidaefamily: Bovidaegenus: Bosspecies: Bos taurus; Bos indicusyoung: Calfgroup: Cattle; herdprey: None. Cows are herbivores2predator: Wolves are the main predators of cows. Also, spotted hyenas, lions, leopards, tigers and grizzly bears.1life span: 20-30 years3size: The is dependent on breed from as little as 0.8m to the tallest being 1.6m 4weight: Depending on the breed, bulls weigh from 450 to 1,800kg. Cows weigh from 360 to 1,000kg.5locations: Cows live in every continent except Antarctica.6habitats: Coasts, Deserts, Forests, Freshwater, Grasslands, Jungles, Mountains, Plains, Subterranean, Urbanpopulation: The US department of Agriculture estimated that the cattle population worldwide was around 1.5 billion in 2024.8 Of these, over a billion are cows, the female of the species.9endangered status: Least ConcernPlease enable JavaScript to view/listen to this media"Cow" and "Cows" redirect here. For other uses, see Cattle (disambiguation) and Cow (disambiguation)."Taurus cattle" redirects here. For the breeding project, see Taurus Project.Cattle (Bos taurus) are large, domesticated, bovid ungulates widely kept as livestock. They are prominent modern members of the subfamily Bovinae and the most widespread species of the genus Bos. Mature female cattle are called cows and mature male cattle are bulls. Young female cattle are called heifers, young male cattle are oxen or bullocks, and castrated male cattle are known as steers. CattleA brown Swiss Fleckvieh cow wearing a cowbellConservation statusDomesticated Scientific classification Kingdom:AnimaliaPhylum:ChordataClass:MammaliaOrder:ArtiodactylaFamily:BovidaeSubfamily:BovinaeGenus:BosSpecies:B.taurusBinomial nameBos taurusLinnaeus, 1758Bovine distributionSynonymsBos primigenius taurusBos longifronsCattle are commonly raised for meat, for dairy products, and for leather. As draft animals, they pull carts and farm implements. Cattle are considered sacred animals within Hinduism, and it is illegal to kill them in some Indian states. Small breeds such as the miniature Zebu are kept as pets.Taurine cattle are widely distributed across Europe and temperate areas of Asia, the Americas, and Australia. Zebus are found mainly in India and tropical areas of Asia, America, and Australia. Sanga cattle are found primarily in sub-Saharan Africa. These types, sometimes classified as separate species or subspecies, are further divided into over 1,000 recognized breeds.Around 10,500 years ago, taurine cattle were domesticated from wild aurochs progenitors in central Anatolia, the Levant and Western Iran. A separate domestication event occurred in the Indian subcontinent, which gave rise to zebu. There were over 940 million cattle in the world by 2022. Cattle are responsible for around 7% of global greenhouse gas emissions. They were one of the first domesticated animals to have a fully-mapped genome.Further information: List of cattle terminologyThe term cattle was borrowed from Anglo-Norman catel (replacing native Old English terms like kine, now considered archaic, poetic, or dialectal),[1] itself from Medieval Latin capitale 'principal sum of money, capital', itself derived in turn from Latin caput 'head'. Cattle originally meant movable personal property, especially livestock of any kind, as opposed to real property (the land, which also included wild or small free-roaming animals such as chickensthey were sold as part of the land).[2] The word is a variant of chattel (a unit of personal property) and closely related to capital in the economic sense.[3][2] The word cow came via Anglo-Saxon c (plural c), from Common Indo-European gus (genitive gows) 'a bovine animal', cf. Persian: gv, Sanskrit: go-.[4] In older English sources such as the King James Version of the Bible, cattle often means livestock, as opposed to deer, which are wild.[2]SkeletonAnatomical model, showing the large 4-chambered stomachCattle are large artiodactyls, mammals with cloven hooves, meaning that they walk on two toes, the third and fourth digits. Like all bovid species, they can have horns, which are unbranched and are not shed annually.[5] Coloration varies with breed; common colors are black, white, and red/brown, and some breeds are spotted or have mixed colors.[6] Bulls are larger than cows of the same breed by up to a few hundred kilograms. British Hereford cows, for example, weigh 600800kg (1,3001,800lb), while the bulls weigh 1,0001,200kg (2,2002,600lb).[7] Before 1790, beef cattle averaged only 160kg (350lb) net. Thereafter, weights climbed steadily.[8][9]Cattle breeds vary widely in size; the tallest and heaviest is the Chianina, where a mature bull may be up to 1.8m (5ft 11in) at the shoulder, and may reach 1,280kg (2,820lb) in weight.[10]The natural life of domestic cattle is some 2530 years. Beef cattle go to slaughter at around 18 months, and dairy cows at about five years.[11]Further information: Digestive system of ruminantsBacteria dominate the rumen microbiome; composition can change substantially with diet.[12]Cattle are ruminants, meaning their digestive system is highly specialized for processing plant material such as grass rich in cellulose, a tough carbohydrate polymer which many animals cannot digest. They do this in symbiosis with micro-organisms bacteria, fungi, and protozoa that possess cellulases, enzymes that split cellulose into its constituent sugars. Among the many bacteria that contribute are Fibrobacter succinogenes, Ruminococcus flavefaciens, and Ruminococcus albus. Cellulolytic fungi include several species of Neocallimastix, while the protozoa include the ciliates Eudiplodinium maggie and Ostracodinium album.[13] If the animal's feed changes over time, the composition of this microbiome changes in response.[12]Cattle have one large stomach with four compartments; the rumen, reticulum, omasum, and abomasum. The rumen is the largest compartment and it harbours the most important parts of the microbiome.[12] The reticulum, the smallest compartment, is known as the "honeycomb". The omasum's main function is to absorb water and nutrients from the digestible feed. The abomasum has a similar function to the human stomach.[14]Cattle regurgitate and re-chew their food in the process of chewing the cud, like most ruminants. While feeding, cows swallow their food without chewing; it goes into the rumen for storage. Later, the food is regurgitated to the mouth, a mouthful at a time, where the cud is chewed by the molars, grinding down the coarse vegetation to small particles. The cud is then swallowed again and further digested by the micro-organisms in the cow's stomach.[14]A cow giving birthThe gestation period for a cow is about nine months long. The ratio of male to female offspring at birth is approximately 52:48.[15] A cow's udder has two pairs of mammary glands or teats.[16] Farms often use artificial insemination, the artificial deposition of semen in the female's genital tract; this allows farmers to choose from a wide range of bulls to breed their cattle. Estrus too may be artificially induced to facilitate the process.[17] Copulation lasts several seconds and consists of a single pelvic thrust.[18]Cows seek secluded areas for calving.[19] Semi-wild Highland cattle heifers first give birth at 2 or 3 years of age, and the timing of birth is synchronized with increases in natural food quality. Average calving interval is 391days, and calving mortality within the first year of life is 5%.[20] Beef calves suckle an average of 5 times per day, spending some 46 minutes suckling. There is a diurnal rhythm in suckling, peaking at roughly 6am, 11:30am, and 7pm.[21] Under natural conditions, calves stay with their mother until weaning at 8 to 11 months. Heifer and bull calves are equally attached to their mothers in the first few months of life.[22]Individual cattle differ in personality traits such as fearfulness and sociability.[23]Cattle have a variety of cognitive abilities. They can memorize the locations of multiple food sources,[24] and can retain memories for at least 48 days.[25] Young cattle learn more quickly than adults,[26] and calves are capable of discrimination learning,[27] distinguishing familiar and unfamiliar animals,[28] and between humans, using faces and other cues.[29] Calves prefer their own mother's vocalizations to those of an unfamiliar cow.[30] Vocalizations provide information on the age, sex, dominance status and reproductive status of the caller, and may indicate estrus in cows and competitive display in bulls.[31] Cows can categorize images as familiar and unfamiliar individuals.[28] Cloned calves from the same donor form subgroups, suggesting that kin discrimination may be a basis of grouping behaviour.[32] Cattle use visual/brain lateralisation when scanning novel and familiar stimuli.[33] They prefer to view novel stimuli with the left eye (using the right brain hemisphere), but the right eye for familiar stimuli.[34] Individual cattle have also been observed to display different personality traits, such as fearfulness and sociability.[23]Vision is the dominant sense; cattle obtain almost half of their information visually.[35] Being prey animals, cattle evolved to look out for predators almost all around, with eyes that are on the sides of their head rather than the front. This gives them a field of view of 330, but limits binocular vision (and therefore stereopsis) to some 30 to 50, compared to 140 in humans.[28] They are dichromatic, like most mammals.[36] Cattle avoid bitter-tasting foods, selecting sweet foods for energy. Their sensitivity to sour-tasting foods helps them to maintain optimal ruminal pH.[35] They seek out salty foods by taste and smell to maintain their electrolyte balance.[37] Their hearing is better than that of horses,[38] but worse at localising sounds than goats, and much worse than dogs or humans.[39] They can distinguish between live and recorded human speech.[40] Olfaction probably plays a large role in their social life, indicating social and reproductive status.[35][41] Cattle can tell when other animals are stressed by smelling the alarm chemicals in their urine.[42] Cattle can be trained to recognise conspecific individuals using olfaction only.[41]Spectators in Oman watch a fight between bulls.Cattle live in a dominance hierarchy. This is maintained in several

to keep greater distances between themselves and have fewer physical interactions than hornless cattle, resulting in more stable social relationships.[44] In calves, agonistic behavior becomes less frequent as space allowance increases, but not as group size changes, whereas in adults, the number of agonistic encounters increases with group size.[45]Dominance relationships in semi-wild highland cattle are very firm, with few overt aggressive conflicts: most disputes are settled by agonistic (non-aggressive, competitive) behaviors with no physical contact between opponents, reducing the risk of injury. Dominance status depends on age and sex, with older animals usually dominant to young ones and males dominant to females. Young bulls gain superior dominance status over adult cows when they reach about 2 years of age.[20]A Charolais bull grazingCows and calves grazing in a pasture in Ystad 2025.Cattle eat mixed diets, but prefer to eat approximately 70% clover and 30% grass. This preference has a diurnal pattern, with a stronger preference for clover in the morning, and the proportion of grass increasing towards the evening.[46] When grazing, cattle vary several aspects of their bite, i.e. tongue and jaw movements, depending on characteristics of the plant they are eating. Bite area decreases with the density of the plants but increases with their height. Bite area is determined by the sweep of the tongue; in one study observing 750-kilogram (1,650lb) steers, bite area reached a maximum of approximately 170cm2 (30sqin). Bite depth increases with the height of the plants. By adjusting their behavior, cattle obtain heavier bites in swards that are tall and sparse compared with short, dense swards of equal mass/area.[47] Cattle adjust other aspects of their grazing behavior in relation to the available food; foraging velocity decreases and intake rate increases in areas of abundant palatable forage.[48] Cattle avoid grazing areas contaminated by the faeces of other cattle more strongly than they avoid areas contaminated by sheep,[49] but they do not avoid pasture contaminated by rabbits.[50]Ear postures of cows indicate emotional state and overall welfare.[51]In cattle, temperament or behavioral disposition can affect productivity, overall health, and reproduction.[52] Five underlying categories of temperament traits have been proposed: shynessboldness, explorationavoidance, activity, aggressiveness, and sociability.[53] There are many indicators of emotion in cattle. HolsteinFriesian heifers that had made clear improvements in a learning experiment had higher heart rates, indicating an emotional reaction to their own learning.[54] After separation from their mothers, Holstein calves react, indicating low mood.[55] Similarly, after hot-iron dehorning, calves react to the post-operative pain.[56] The position of the ears has been used as an indicator of emotional state.[28] Cattle can tell when other cattle are stressed by the chemicals in their urine.[42] Cattle are gregarious, and even short-term isolation causes psychological stress. When heifers are isolated, vocalizations, heart rate and plasma cortisol all increase. When visual contact is re-instated, vocalizations rapidly decline; heart rate decreases more rapidly if the returning cattle are familiar to the previously isolated individual.[57] Mirrors have been used to reduce stress in isolated cattle.[58]Further information: Sleep in non-human animalsThe average sleep time of a domestic cow is about 4 hours a day.[59] Cattle do have a stay apparatus,[60] but do not sleep standing up;[61] they lie down to sleep deeply.[62]Further information: Bovine genomeGenomic analysis shows there are five main cattle sub-types, here labelled by continent.[63]In 2009, the National Institutes of Health and the US Department of Agriculture reported having mapped the bovine genome.[64] Cattle have some 22,000 genes, of which 80% are shared with humans; they have about 1000 genes that they share with dogs and rodents, but not with humans. Using this bovine "HapMap", researchers can track the differences between breeds that affect meat and milk yields.[65] Early research focused on Hereford genetic sequences; a wider study mapped a further 4.2% of the cattle genome.[63]Behavioral traits of cattle can be as heritable as some production traits, and often, the two can be related.[66] The heritability of temperament (response to isolation during handling) has been calculated as 0.36 and 0.46 for habituation to handling.[67] Rangeland assessments show that the heritability of aggressiveness in cattle is around 0.36.[68]Quantitative trait loci have been found for a range of production and behavioral characteristics for both dairy and beef cattle.[69]Cattle have played a key role in human history, having been domesticated since at least the early Neolithic age. Archaeozoological and genetic data indicate that cattle were first domesticated from wild aurochs (Bos primigenius) approximately 10,500 years ago. There were two major areas of domestication: one in central Anatolia, the Levant and Western Iran, giving rise to the taurine line, and a second in the area that is now Pakistan, resulting in the indicine line.[70] Modern mitochondrial DNA variation indicates the taurine line may have arisen from as few as 80 aurochs tamed in the upper reaches of Mesopotamia near the villages of ayn Tepesi in what is now southeastern Turkey, and Dja'de el-Mughara in what is now northern Syria.[71]Although European cattle are largely descended from the taurine lineage, gene flow from African cattle (partially of indicine origin) contributed substantial genomic components to both southern European cattle breeds and their New World descendants.[70] A study on 134 breeds showed that modern taurine cattle originated from Africa, Asia, North and South America, Australia, and Europe.[72] Some researchers have suggested that African taurine cattle are derived from a third independent domestication from the North African aurochs.[70] Whether there have been two or three domestications, European, African, and Asian cattle share much of their genomes both through their species ancestry and through repeated migrations of livestock and genetic material between species, as shown in the diagram.[73]See also: Bos and BovinaeCattle phylogeny and migrations involve two major species, at least two domestications, and migrations between these.[73]ubro, a European bisoncattle hybridCattle were originally identified as three separate species: Bos taurus, the European or "taurine" cattle (including similar types from Africa and Asia); Bos indicus, the Indicine or "zebu"; and the extinct Bos primigenius, the aurochs. The aurochs is ancestral to both zebu and taurine cattle.[74] They were later reclassified as one species, Bos taurus, with the aurochs (B. t. primigenius), zebu (B. t. indicus), and taurine (B. t. taurus) cattle as subspecies.[75] However, this taxonomy is contentious, and authorities such as the American Society of Mammalogists treat these taxa as separate species.[76][77]Complicating the matter is the ability of cattle to interbreed with other closely related species. Hybrid individuals and even breeds exist, not only between taurine cattle and zebu (such as the sanga cattle (Bos taurus africanus x Bos indicus), but also between one or both of these and some other members of the genus Bos yaks (the dzo or yattle[78]), banteng, and gaur. Hybrids such as the beefalo breed can even occur between taurine cattle and either species of bison, leading some authors to consider them part of the genus Bos, as well.[79] The hybrid origin of some types may not be obvious for example, genetic testing of the Dwarf Lulu breed, the only taurine-type cattle in Nepal, found them to be a mix of taurine cattle, zebu, and yak.[80]N'dama cattle in a livestock market in Mali The aurochs originally ranged throughout Europe, North Africa, and much of Asia. In historical times, its range became restricted to Europe, and the last known individual died in Mazovia, Poland, around 1627.[81] Breeders have attempted to recreate a similar appearance to the aurochs by crossing traditional types of domesticated cattle, producing the Heck breed.[82]A group of taurine-type cattle exist in Africa; they either represent an independent domestication event or were the result of crossing taurines domesticated elsewhere with local aurochs, but they are genetically distinct;[83] some authors name them as a separate subspecies, Bos taurus africanus.[84] The only pure African taurine breeds remaining are the N'Dama, Kuri and some varieties of the West African Shorthorn.[85]Feral cattle are those that have been allowed to go wild.[86] Populations exist in many parts of the world,[87][88] sometimes on small islands.[89] Some, such as Amsterdam Island cattle,[75] Chillingham cattle,[90] and Aleutian wild cattle have become sufficiently distinct to be described as breeds.[91]Further information: Animal husbandryIn concentrated animal feeding operations, the cattle are not allowed to wander and graze, as food is brought to them in a feedlot.[92]Cattle are often raised by allowing herds to graze on the grasses of large tracts of rangeland. Raising cattle extensively in this manner allows the use of land that might be unsuitable for growing crops. The most common interactions with cattle involve daily feeding, cleaning and milking. Many routine husbandry practices involve ear tagging, dehorning, loading, medical operations, artificial insemination, vaccinations and hoof care, as well as training for agricultural shows and preparations. Around the world, Fulani husbandry rests on behavioural techniques, whereas in Europe, cattle are controlled primarily by physical means, such as fences.[93] Breeders use cattle husbandry to reduce tuberculosis susceptibility by selective breeding and maintaining herd health to avoid concurrent disease.[94]In the United States, many cattle are raised intensively, kept in concentrated animal feeding operations, meaning there are at least 700 mature dairy cows or at least 1000 other cattle stabled or confined in a feedlot for "45 days or more in a 12-month period".[92]A Hereford being inspected for ticks. Cattle are often restrained in cattle crushes when given medical attention.A calf with a nose ring to prevent it from suckling, usually to assist in weaningCattle feedlot in New Mexico, United StatesCattle headcounts by country, as of 2021Historically, the cattle population of Britain rose from 9.8 million in 1878 to 11.7 million in 1908, but beef consumption rose much faster. Britain became the "stud farm of the world" exporting livestock to countries where there were no indigenous cattle. In 1929 80% of the meat trade of the world was products of what were originally English breeds. There were nearly 70 million cattle in the US by the early 1930s.[95]Cattle have the largest biomass of any animal species on Earth, at roughly 400 million tonnes, followed closely by Antarctic krill at 379 million tonnes and humans at 373 million tonnes.[96] In 2023, the countries with the most cattle were India with 307.5 million (32.6% of the total), Brazil with 194.4 million, and China with 101.5 million, out of a total of 942.6 million in the world.[97]Cattle are kept on farms to produce meat, milk, and leather, and sometimes to pull carts or farm implements.[98]Further information: Beef cattle and BeefThe meat of adult cattle is known as beef, and that of calves as veal. Other body parts are used as food products, including blood, liver, kidney, heart and oxtail. Approximately 300 million cattle, including dairy animals, are slaughtered each year for food.[99] About a quarter of the world's meat comes from cattle.[100] World cattle meat production in 2021 was 72.3 million tons.[101]The Hereford is a widespread beef breed, introduced in the 18th centuryAustralian Droughtmaster cattle on an extensive farm in Queensland, AustraliaAberdeen Angus, a popular small breed, here in Austria with a traditional cattle bellFAO data for 2021Beef is the third most commonly consumed meat worldwide.Beef (and buffalo meat) production has grown substantially over the recent 60 years.Production of beef worldwide, by country in 2021.Main articles: Dairy cattle and Dairy productCertain breeds of cattle, such as the Holstein-Friesian, are used to produce milk,[102][103] much of which is processed into dairy products such as butter, cheese, and yogurt. Dairy cattle are usually kept on specialized dairy farms designed for milk production. Most cows are milked twice per day, with milk processed at a dairy, which may be onsite at the farm or the milk may be shipped to a dairy plant for eventual sale of a dairy product.[104] Lactation is induced in heifers and spayed cows by a combination of physical and psychological stimulation, by drugs, or by a combination of those methods.[105] For mother cows to continue producing milk, they give birth to one calf per year. If the calf is male, it is generally slaughtered at a young age to produce veal.[106] Cows produce milk until three weeks before birth.[103] Over the last fifty years, dairy farming has become more intensive to increase the yield of milk produced by each cow. The Holstein-Friesian is the breed of dairy cow most common in the UK, Europe and the United States. It has been bred selectively to produce the highest yields of milk of any cow. The average in the UK is around 22 litres per day.[102][103]Dairy is a large industry worldwide. In 2023, the 27 European Union countries produced 143 million tons of cow's milk; the United States 104.1 million tons; and India 99.5 million tons.[107] India further produces 94.4 million tons of buffalo milk,[108] making it (in 2023) the world's largest milk producer; its dairy industry employs some 80 million people.[109]Holstein cattle are the primary dairy breed, bred for high milk production.The milking of cattle was once largely by hand. Demonstration at Cogges Manor Farm, OxfordshireA modern rotary milking parlour, GermanyFAO data for 2021World production of bovine milk (cow + buffalo)Further information: OxOxen used in traditional ploughing Karnataka Oxen are cattle trained as draft animals. Oxen can pull heavier loads and for a longer period of time than horses.[110] Oxen are used worldwide, especially in developing countries. There are some 11 million draft oxen in sub-Saharan Africa,[111] while in 1998 India had over 65 million oxen.[112] At the start of the 21st century, about half the world's crop production depended on land preparation by draft animals.[113]Cattle are not often kept solely for hides, and they are usually a by-product of beef production. Hides are used mainly for leather products such as shoes. In 2012, India was the world's largest producer of cattle hides.[114] Cattle hides account for around 65% of the world's leather production.[115][116]Further information: Veterinary medicineDrooling due to foot-and-mouth diseaseInfected hoof of the same heiferCattle are subject to pests including arthropod parasites such as ticks (which can in turn transmit diseases caused by bacteria and protozoa),[117] and diseases caused by pathogens including bacteria and viruses. Some viral diseases are spread by insectsi.e. bluetongue disease is spread by midges. Psoroptic mange is a disabling skin condition caused by mites. Bovine tuberculosis is caused by a bacterium; it causes disease in humans and in wild animals such as deer and badgers.[118] Foot-and-mouth disease is caused by a virus, affects a range of hoofed livestock and is highly contagious.[119] Bovine spongiform encephalopathy is a neurodegenerative disease spread by a prion, a misfolded brain protein, in contaminated meat.[120] Among the intestinal parasites of cattle are Paramphistomum flukes, affecting the rumen, and hookworms in the small intestine.[121]Main article: Effects of climate change on livestockMost of the top 10 beef-producing countries are likely to see lower production with greater temperatures (left) and heat stress (right).[122]Climate change is expected to exacerbate heat stress in cattle, and for longer periods.[123] Heat-stressed cattle may experience accelerated breakdown of adipose tissue by the liver, causing lipidosis.[124] Cattle eat less when heat stressed, resulting in ruminal acidosis, which can lead to laminitis. Cattle can attempt to deal with higher temperatures by panting more often; this rapidly decreases carbon dioxide concentrations at the price of increasing pH, respiratory alkalosis. To deal with this, cattle are forced to shed bicarbonate through urination, at the expense of rumen buffering. These two pathologies can both cause lameness.[124] Another specific risk is mastitis.[124] This worsens as Calliphora blowflies increase in number with continued warming, spreading mastitis-causing bacteria.[125] Ticks too are likely to increase in temperate zones as the climate warms, increasing the risk of tick-borne diseases.[126] Both beef and milk production are likely to experience declines due to climate change.[122][127]Cattle health is at once a veterinary issue (for animal welfare and productivity), a public health issue (to limit the spread of disease), and a food safety issue (to ensure meat and dairy products are safe to eat). These concerns are reflected in farming regulations.[128] These rules can become political matters, as when it was proposed in the UK in 2011 that milk from tuberculosis-infected cattle should be allowed to enter the food chain.[129] Cattle disease attracted attention in the 1980s and 1990s when bovine spongiform encephalopathy (mad cow disease) broke out in the United Kingdom. BSE can cross into humans as the deadly variant CreutzfeldtJakob disease; 178 people in the UK had died from it by 2010.[130]Main article: Environmental impact of cattle productionBeef has the highest greenhouse gas impact of any agricultural commodity, followed by mutton.The gut flora of cattle produce methane, a powerful[131] greenhouse gas, as a byproduct of enteric fermentation, with each cow belching out 100kg a year.[132] Additional methane is produced by anaerobic fermentation of stored manure.[133] The FAO estimates that in 2015 around 7% of global greenhouse gas emissions were due to cattle, but this is uncertain.[134] Reducing methane emissions quickly helps limit climate change.[134]Concentrated animal feeding operations in particular produce substantial amounts of wastewater and manure,[135][136] which can cause environmental harms such as soil erosion, human and animal exposure to toxic chemicals, development of antibiotic resistant bacteria and an increase in E. coli contamination.[137][138]In many world regions, overgrazing by cattle has reduced biodiversity of the grazed plants and of animals at different trophic levels in the ecosystem.[139] A well documented consequence of overgrazing is woody plant encroachment in rangelands, which significantly reduces the carrying capacity of the land over time.[140]Further information: Cruelty to animals Welfare concerns of farm animalsConfining calves for veal production in individual crates has attracted welfare concerns.Cattle husbandry practices including branding,[141] castration,[142] dehorning,[143] ear tagging,[144] nose ringing,[145] restraint,[146] tail docking,[147] the use of veal crates,[148] and cattle prods[149] have raised welfare concerns.[150]Stocking density is the number of animals within a specified area. High stocking density can affect cattle health, welfare, productivity,[151] and feeding behaviour.[152] Densely-stocked cattle feed more rapidly and lie down sooner, increasing the risk of teat infection, mastitis, and embryo loss.[153][154] The stress and negative health impacts induced by high stocking density such as in concentrated animal feeding operations or feedlots, auctions, and transport may be detrimental to cattle welfare.[155]To produce milk, most calves are separated from their mothers soon after birth and fed milk replacement in order to retain the cows' milk for human consumption.[156]Dairy cattle are frequently artificially inseminated.[157] Animal welfare advocates are critical of this practice, stating that this breaks the natural bond between the mother and her calf.[156] The welfare of veal calves is also a concern.[158]Two sports involving cattle are thought to be cruel by animal welfare groups: rodeos and bullfighting. Such groups oppose rodeo activities including bull riding, calf roping and steer roping, stating that rodeos are unnecessary and cause stress, injury, and death to the animals.[159] In Spain, the Running of the bulls faces opposition due to the stress and injuries incurred by the bulls during the event.[160]From early in civilisation, cattle have been used in barter.[161][162] Cattle play a part in several religions. Veneration of the cow is a symbol of Hindu community identity.[163] Slaughter of cows is forbidden by law in several states of the Indian Union.[164]The ox is one of the 12-year cycle of animals which appear in the Chinese zodiac. The astrological sign Taurus is represented as a bull in the Western zodiac.[165]Cattle in cultureSt Luke the evangelist depicted with a bull in the 1493 Nuremberg ChronicleA legend claims that monks carrying the body of Saint Cuthbert were led by a milk maid who had lost her dun cow. They built Durham Cathedral where it was found.[166]Dutch Golden Age painting: Young Herdsman with Cows by Aelbert Cuyp, 165560An Evening at the Hut of the Cow-Herdesses, Knud Bergslien, before 1858Bull in the coat of arms of Turin, ItalyCategory:Individual cattleBritish Cattle Health InitiativeBull-baitingBullockyBulls and Cows (game)Cattle age determinationCowboyList of cattle breeds^ "kine". Merriam-Webster. Retrieved 13 October 2024.^ a b c "cattle, n.". Oxford English Dictionary (Onlineed.). Oxford University Press. 13 October 2024. (Subscription or participating institution membership required.)^ Harper, Douglas. "chattel". Online Etymology Dictionary. Retrieved 13 October 2024.^ "cow, n.1.". Oxford English Dictionary (Onlineed.). Oxford University Press. 13 October 2024. (Subscription or participating institution membership required.)^ "Antelopes, Gazelles, Cattle, Goats, Sheep, and Relatives: Introduction" (PDF). Princeton University Press. pp.123. 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