

# Glossary

## A

---

**abdominal cavity** - The largest body cavity in humans and many animals and holds the bulk of the viscera.

**abnormal behavior** - Vices; not normal for the species.

**abomasum** - Fourth stomach compartment of ruminant animals that corresponds to the true stomach of monogastric animals.

**abortion** - Unexpected delivery of fetus between conception and a few days before normal parturition.

**abscess** - Localized collection of pus in a cavity formed by disintegration of tissues.

**absorption** - The passage of liquid and digested (soluble) food across the gut wall.

**absorptive cells** - The single layer of epithelial cells lining the surface of the small intestine selectively absorbs food molecules from the gut into the bloodstream.

**accessory sex glands** - The seminal vesicles, prostate and Cowper's glands in the male. These glands add their secretions to the sperm to form semen.

**Acid Detergent Fiber (ADF)** - Least digestible plant components, including cellulose and lignin.

**acquired immunity** - Associated with the presence of antibodies from another immune animal or from exposure to the disease.

**active immunity** - Acquired through direct contact with the specific disease-causing organism that causes the body to develop antibodies to combat invasion.

**acute** - Relatively sudden appearance of symptoms (within 24 hours).

**adenosine triphosphate (ATP)** - Molecule involved in the “energy currency” of the cell; energy is released when a phosphate group is broken off forming ADP (adenosine diphosphate).

**adipocyte** - A single fat cell

**adipose tissue** - Fat cells or fat tissue.

**afterbirth** - The membranes attached to the fetus that are expelled after parturition.

**agnostic behavior** - Includes fighting or flight and other reactions involving conflict.

**AI** - See artificial insemination.

**air dry** - Refers to feeds in equilibrium with air; they would contain approximately 10% water or 90% dry matter.

**albumen** - The white of an egg.

**alimentary canal** - Passageway for food and waste products through the body.

**alleles** - Genes occupying corresponding loci in homologous chromosomes that affect the same hereditary trait but in different ways.

**allelomimetic behavior** - Doing the same thing. Animals tend to follow the actions of other animals.

**allopatric species** - Related species which cannot interbreed because of geographical separation.

**alveolus (plural alveoli)** - A hollow cluster of cells. In the mammary gland, these cells secrete milk.

**amino acid** - Any of a class of 20 molecules that are combined to form proteins in living things.

**amnion** - A fluid-filled membrane located next to the fetus.

**ampulla** - The dilated or enlarged upper portion of the vas deferens in bulls, bucks and rams, where sperm are stored for sudden release at ejaculation.

**anabolic** - A constructive, or "building up," metabolic process.

**anaerobic** - Able to survive or function where there is no atmospheric oxygen.

**analogous** - Comparable to.

**anaphase** - Continuing mitosis, pairs of identical chromosomes separate from one another.

**anatomy** - Science of animal body structure and the relation of the body parts.

**androgen** - A male sex hormone, such as testosterone.

**anemia** - Deficiency of hemoglobin, often accompanied by a reduced number of red blood cells. Usually results from an iron deficiency.

**anestrous** - Period of time when female is not in estrus; the nonbreeding season.

**animal rights** - Rights believed to belong to animals to live free from use in medical research, hunting and other services to humans.

**animal welfare** - Physical and psychological well-being of animals

**antemortem** - Before death.

**anterior** - Situated in front of, or toward the front part of, a point of reference; toward the head of an animal.

**anterior pituitary** - The part of the pituitary gland, located at the base of the brain, that produces several hormones.

**anthelmintic** - A drug or chemical agent used to kill or remove internal parasites.

**anthropomorphism** - Attributing human characteristics to animals.

**antibiotic** - A product produced by living organisms, such as yeast, which destroys or inhibits the growth of other microorganisms, especially bacteria.

**antibody** - A specific protein molecule that is produced in response to a foreign protein (antigen) that has been introduced into the body.

**antigen** - A foreign substance that, when introduced into the blood or tissues, causes the formation of antibodies. Antigens may be toxins or native proteins.

**anti-inflammatory** - An agent that acts to decrease inflammation and associated pain, heat, and swelling.

**antiseptic** - A chemical agent used on living tissue to control the growth and development of microorganisms.

**antiserum** - To help the animal's body fight the virus until the animal's system makes its own antibodies.

**antitoxin** - An antibody that is capable of neutralizing poisons from animal and vegetable sources.

**appendicular skeleton** - Includes the four legs, used for locomotion and connects with the axial skeleton by muscles.

**aquaculture** - Raising of aquatic animals or the cultivation of aquatic plants for food.

**artery** - Vessel through which blood passes from the heart to all parts of the body.

**arthropod** - Invertebrate animal with exoskeleton, jointed appendage and segmented body.

**artificial insemination (AI)** - The introduction of semen into the female reproductive tract (usually the cervix or uterus) by a technique other than natural service.

**artificial vagina** - A device used to collect semen from a male when he mounts in a normal manner to copulate. The male ejaculates into this device, which simulates the vagina of the female in pressure, temperature, and sensation to the penis.

**as fed** - Refers to feeds that contain their normal amount of moisture.

**ascaris** - Any of the genus (*Ascaris*) of parasitic roundworms.

**aspirate** - Pull back on the syringe plunger to be sure the needle is not in a blood vessel.

**assimilation** - Process of transforming food into living tissue.

**ATP** - Adenosine triphosphate, a fully charged energy unit.

**atrophy** - Shrinking or wasting away of a tissue or organ.

**autopsy** - A postmortem examination in which the body is dissected to determine the cause of death.

**avian** - Refers to birds, including poultry.

**axial skeleton** - Includes the skull and spinal column.

**axon** - Elongated fiber of the nerve.

## **B**

---

**bacteria** - Constitute a large domain of prokaryotic microorganisms.

**Bacterial Crude Protein (BCP)** - Protein supplied to an animal by rumen microbes.

**bacterin** - A suspension of killed or attenuated bacteria for use as a vaccine.

**balance sheet** - A statement of assets owned and liabilities owed in dollar terms that shows the equity or net worth at a specific point in time (e.g., net worth statement).

**balanced ration** - Contains more than one feed, so proper quantities of essential nutrients will be provided.

**balling gun** - Administers large pills for dosing animals.

**band** - (1) A relatively large group of range sheep; (2) method of identification (e.g., put a band around the leg of a chicken).

**barren** - Not capable of producing offspring.

**barrow** - A male swine that was castrated before reaching puberty.

**basal metabolism** - The chemical changes that occur in an animal's body when the animal is in a thermoneutral environment, resting, and in a postabsorptive state. It is usually determined by measuring oxygen consumption and carbon dioxide production.

**base pair** - Two nitrogenous bases (adenine and thymine or guanine and cytosine) held together by weak bonds. Two strands of DNA are held together in the shape of a double helix by the bonds between base pairs.

**beef** - The meat from cattle (bovine species) other than calves (the meat from calves is called **veal**).

**beriberi** - A disease caused by a deficiency of vitamin B<sub>1</sub>.

**bilateral symmetry** - The body is divided into equivalent right and left halves by only one plane.

**binomial nomenclature** - A formal system of naming species of living things by giving each a name composed of two parts, both of which use Latin grammatical forms.

**biologicals** - Medicinal products used primarily to prevent disease, including serums, vaccines, antigens, and antitoxins.

**biosecurity** - Procedures intended to protect animals against disease or harmful biological agents).

**biotechnology** - The use of microorganisms, plant cells, animal cells, or parts of cells (such as enzymes) to produce industrially important products or processes.

**blemish** - Any defect or injury that mars the appearance of, but does not impair the usefulness of, an animal.

**bloat** - An abnormal condition in ruminants characterized by a distention of the rumen, usually seen on an animal's upper left side, owing to an accumulation of gases.

**blood spots** - Spots in the egg caused by a rupture of one or more blood vessels in the yolk follicle at the time of ovulation.

**boar** - A male swine of breeding age.

**bog spavin** - A soft enlargement of the anterior, inner aspect of the hock.

**bolus** - (1) Regurgitated food; (2) a large pill for dosing animals.

**bone spavin** - A bony (hard) enlargement of the inner aspect of the hock.

**bots** - Any of a number of related flies whose larvae are parasitic in horses and sheep.

**bovine** - A general family grouping of cattle.

**break joint** - Denotes the point on a lamb carcass where the foot and pastern are removed at the cartilaginous junction of the front leg.

**bred** - Female has been mated to the male. Usually implies the female is pregnant.

**breech** - A presentation at birth is where the rear portion of the fetus is presented first.

**breed** - Animals of common origin with characteristics that distinguish them from other groups within the same species.

**breeder** - A person who breeds livestock, racehorses, other animals, or plants.

**breeding value** - A genetic measure for one trait of an animal, calculated by combining into one number several performance values that have been accumulated on the animal and the animal's relatives.

**British thermal unit** - (Btu) The quantity of heat required to raise the temperature of 1 lb of water 1°F or near 39.2°F.

**broiler** - A young meat-type chicken of either sex (usually 6 to 8 weeks of age) weighing 3 to 5 lb. Also referred to as a fryer or young chicken.

**brood** - Mother

**brooder** - Fish that have reached reproductive maturity.

**broodiness** - The desire of a female bird to sit on eggs (incubate).

**browse** - Woody or brushy plants. Livestock feed on tender shoots or twigs.

**brucellosis** - A contagious bacterial disease that results in abortions; also called Bang's disease.

**BST (Bovine Somatotropin)** - Growth hormone produced from pituitary gland of cattle.

**buck** - A male sheep or goat. This term usually denotes animals of breeding age.

**bulbourethral** - (Cowper's) gland An accessory gland of the male that secretes a fluid which constitutes a portion of the semen.

**bull** - A bovine male. The term usually denotes animals of breeding age.

**by-product** - A product of considerably less value than the major product. For example, in U.S. meat animals, the hide, pelt and offal are by-products, whereas meat is the major product.

## C

---

**C-section** - See cesarean section.

**CAFOs** - Confined Animal Feeding Operations

**calcification** - Normally occurs in the formation of bone, but calcium can be deposited abnormally in soft tissue, causing it to harden.

**calf** - A young male or female bovine animal under 1 year of age.

**calorie** - The amount of heat required to raise the temperature of 1 g of water from 15°C to 16°C.

**calve** - In cattle, giving birth; same as parturition.

**calving interval** - Amount of time (days or months) between the birth of a calf and the birth of a subsequent calf, both from the same cow.

**candling** - Shining of a bright light through an egg to see if it contains a live embryo.

**canter** - A slow, easy gallop.

**capacitation** - One of the last steps in the maturation of mammalian spermatozoa and is required to render them competent to fertilize an oocyte (egg).

**capon** - Castrated male chicken. Castration usually occurs between 3 and 4 weeks of age.

**carbohydrates** - Any foods, including starches, sugars, celluloses and gums, that are broken down to simple sugars through digestion.

**cardiac** - Pertaining to the heart.

**carnivores** - Animals that feed on flesh.

**carnivorous** - Subsisting or feeding on animal tissues.

**carotene** - The orange pigment found in carrots, leafy plants, yellow corn and other feeds, which can be broken down to form two molecules of vitamin A.

**carotenoids** - Natural pigments found in plants and animals.

**carrying capacity** - Number of people, other living organisms, or crops that a region can support without environmental degradation.

**casein** - Major protein of milk.

**cash-flow statement** - A financial statement summarizing all cash receipts and disbursements over the period of time covered by the statement.

**castration** - To remove the testicles.

**catalysts** - A substance that increases the rate of a chemical reaction without itself undergoing any permanent chemical change.

**caudal** - At or near the tail or the posterior part of the body.

**cecal fermenters** - Digest nutrients by means of the cecum rather than by a multi-chambered stomach such as the rabbit and horse.

**cecum (ceca)** - Large, sock-shaped pouch between the horse's small and large intestines; important in cellulose digestion.

**cell** - A specific, separate mass of living material that is surrounded by a semi-permeable membrane.

**cell wall** - (not membrane) Composed of two layers which provide support and protection for the cell.

**cellulose** - An insoluble substance that is the main constituent of plant cell walls and of vegetable fibers such as cotton.

**centriole** - See centrosome

**centrosome** - Near the nucleus and functions in cell division.

**cervix** - Portion of the female reproductive tract between the vagina and the uterus. It is usually sealed by thick mucus except when the female is in estrus or delivering young.

**cesarean section** - Delivery of fetus through an incision in abdominal and uterine walls. (See c-section)



**chevon** - Meat from goats.

**chick** - A young chicken that has recently been hatched.

**choice** - Most economical and most desirable carcass grade.

**chromosome** - Self-replicating genetic structure of cells containing the cellular DNA that bears in its nucleotide sequence the linear array of genes.

**chronic** - That which develops more slowly, lingers and will frequently reappear.

**cilia** - A short, microscopic, hair like vibrating structure.

**class** - A group of animals categorized primarily by sex and age.

**clitoris** - Ventral part of the vulva of the female reproductive tract that is homologous to the penis in the male. It is highly sensory.

**clutch** - Eggs laid by a hen on consecutive days.

**coccidia** - A protozoan organism that causes an intestinal disease called coccidiosis.

**coccidiosis** - A morbid state caused by the presence of organisms called coccidia, which belong to a class of sporozoans.

**coccygeal** - Referring to the coccyx, the small tail-like bone at the bottom of the spine.

**cock** - A male chicken; also called a rooster.

**cockerel** - Immature male chicken.

**cod** - Scrotal area of steer remaining after castration.

**codons** - A triplet (3) of nucleotides bases.

**colic** - A nonspecific pain of the digestive tract.

**collagen** - Main structural protein found in animal connective tissue, yielding gelatin when boiled.

**colloidal suspension** - A mixture in which small particles of a substance are dispersed throughout a gas or liquid.

**colon** - The large intestine from the end of the ileum and beginning with the cecum to the anus.

**colostrum** - First milk given by a female after delivery of her young. It is high in antibodies that protect young animals from invading microorganisms.

**colt** - A young male of the horse or donkey species.

**comb** - Fleshy outgrowth on the top of a chicken's head, usually red in color, with varying sizes and shapes.

**commercial** - (1) A carcass grade of cattle; (2) livestock that are not registered or pedigreed by a registry (e.g., breed) association.

**commercial herds** - Large group of animals kept together as livestock

**companion animal** - Used to indicate that a human is frequently in the company of an animal.

**comparative anatomy** - Comparison of parts, organs, etc. of different species.

**complete feed** - A nutritionally adequate feed for animals specifically formulated to be fed as the sole ration and capable of maintaining life and/or promoting production without any additional substance, except water, being consumed.

**composite breed** - A breed that has been formed by crossing two or more breeds; also called synthetic breed.

**concentrate** - A feed used with another to improve the nutritive balance of the total, and intended to be further diluted and mixed to produce a supplement or a complete feed.

**conception** - Fertilization of the ovum (egg).

**conditioning** - Growing program for feeder cattle from the time calves are weaned until they enter a feedlot to be finished on a high protein ration; also called backgrounding.

**conformation** - Physical form of an animal; its shape and arrangement of parts.

**contagious disease** - Infectious disease; a disease that is transmitted from one animal to another.

**contaminants** - Presence of a minor and unwanted constituent in a material such manure, grease, blood, yolk, etc.

**coronary band (coronet)** - Boundary between the top of the hoof wall and the skin at the bottom of the pastern where hoof growth begins.

**corpus luteum** - A yellowish body in the mammalian ovary. The cells that were follicular cells develop into the corpus luteum, which secretes progesterone. It becomes yellow in color from the yellow lipids that are in the cells.

**cortex** - An outer layer of tissue immediately below the epidermis of a stem or root.

**cotyledon** - An area of the placenta that interfaces with the uterine lining to allow nutrients and wastes to pass from the mother to the developing young. Sometimes referred to as button.

**cow** - A sexually mature, female bovine animal; usually one that has produced a calf.

**cow hocked** - A condition in which the hocks are close together but the feet stand apart.

**cow-calf operation** - A management unit that maintains a breeding herd and produces weaned calves.

**Cowper's gland** - Either of a pair of small glands that open into the urethra at the base of the penis and secrete a constituent of seminal fluid.

**cranial** - Applied to the front or head of an animal; directional terms are anterior and superior.

**creep** - An enclosure in which young can enter to obtain feed but larger animals cannot enter; called creep feeding.

**creep feeding** - Supplemental feeding

**crimp** - Waves, or kinks, in a wool fiber.

**crossbred** - An animal produced by crossing two or more breeds.

**crossbreeding** - Mating animals from genetically diverse groups (i.e., breeds) within a species.

**Crude Fiber(CF)** - Traditional measure of fiber content in feeds.

**Crude Protein(CP)** - Measures the nitrogen content of a feedstuff, including both true protein and non-protein nitrogen.

**cryptorchidism** - Retention of one or both testicles in the abdominal cavity in animals that typically have the testicles hanging in a scrotal sac.

**cud** - Bolus of feed a ruminant animal regurgitates for further chewing.

**cull** - To eliminate one or more animals from the breeding herd or flock.

**curd** - Coagulated milk.

**cutability** - Fat, lean, and bone composition of meat animals; used interchangeably with yield grade.

**cuticle** - The outer layer of the wool fiber.

**cwt** - An abbreviation for hundredweight (100 lb).

**cycling** - Infers that nonpregnant females have active estrous (heat) cycles.

**cytoplasm** - Part between the outer cell membrane and the nuclear membrane.

## D

---

**dam** - Female parent.

**daughter cells** - Either of the two cells formed when a cell undergoes cell division by mitosis.

**Degradable Intake Protein (DIP)** - The fraction of the crude protein which is degradable in the rumen and provides nitrogen for rumen microorganisms to synthesize bacterial crude protein (BCP) which is protein supplied to the animal by rumen microbes.

**dehorn** - To remove the horns from an animal.

**dehydrated** - Body is lacking water.

**demeanor** - Outward behavior.

**dendrites** - A short branched extension of a nerve cell, along which impulses received from other cells at synapses are transmitted to the cell body.

**deoxyribonucleic acid (DNA)** - A complex double-stranded molecule consisting of deoxyribose (a sugar), phosphoric acid, and four nitrogen bases (a gene is a piece of DNA). This molecule encodes genetic information; it is held together by weak bonds between base pairs of nucleotides.

**depreciation** - An accounting procedure by which the purchase price of an asset with a useful life of more than 1 year is prorated over time.

**dermatitis** - Inflammation and redness of skin.

**detoxifies** - Removes toxic substances or qualities.

**dewclaws** - Hard horny structures above the hoof on the rear surface of the legs of cattle, swine and sheep.

**dewlap** - Loose skin under the chin and neck of cattle.

**DHIA Dairy Herd Improvement Association** - An association which dairy producers participate in keeping dairy records. Sanctioned by the National Cooperative Dairy Herd Improvement Program.

**DHIR Dairy Herd Improvement Registry** - A dairy record-keeping plan sponsored by the breed associations.

**diestrus** - A period of sexual inactivity between recurrent periods of estrus.

**diet** - Feed ingredients or mixture of ingredients (including water), which are consumed by animals.

**Diethylstilbestrol (DES)** - A synthetic (estrogen) compound recognized by the estrogen receptors as a steroid; no longer used in production.

**differentiate** - Process by which a less specialized cell becomes a more specialized cell type

**diffusion** - Movement of a substance from a place where it is found in high concentration (relatively large amounts) to a place of low concentration (relatively small amounts)

**digesta** - Partially digested food.

**digestibility** - Quality of being digestible. If a high percentage of a given food taken into the digestive tract is absorbed into the body, that food is said to have high digestibility.

**digestible nutrient** - That portion of a nutrient which may be broken down (digested) and absorbed and used by the body

**Digestible Protein (DP)** - Reported by some laboratories but protein digestibility is influenced by external factors.

**digestion** - The reduction in particle size of feed so that the feed becomes soluble and can pass across the gut wall into the vascular or lymph system.

**diploid** - Having the normal, paired chromosomes of somatic tissue as produced by the doubling of the primary chromosomes of the germ cells at fertilization.

**disease** - Any deviation from a normal state of health.

**disinfect** - To kill, or render ineffective, harmful microorganisms and parasites.

**disinfectant** - A chemical that destroys disease-producing microorganisms or parasites.

**distal** - Position that is distant from the point of attachment of an organ.

**distended** - Swollen

**DM** - See dry matter.

**DNA** - See deoxyribonucleic acid.

**DNA sequence** - The relative order of base pairs, whether in a fragment of DNA, a gene, a chromosome, or an entire genome.

**dock** - (1) To cut off the tail; (2) the remaining portion of the tail of a sheep that has been docked; (3) to reduce or lower in value.

**doe** - A female goat or rabbit.

**dominance** - (1) A situation in which one gene of an allelic pair prevents the phenotypic expression of the other member of the allelic pair; (2) a type of social behavior in which an animal exerts influence over one or more other animals.

**dominant gene** - A gene that overpowers and prevents the expression of its recessive allele when the two alleles are present in a heterozygous individual.

**dorsal** - Of, on, or near the back of an animal.

**draft horse** - Large horses that usually stand taller than 16 hands at the withers

**dressings percentage** - Percentage of the live animal weight that becomes the carcass weight at slaughter. It is determined by dividing the carcass weight by the liveweight, then multiplying by 100. Used interchangeably with yield.

**dry (cow, ewe, sow, mare)** - Refers to a nonlactating female.

**dry matter (DM)** - Feed after water (moisture) has been removed (100% dry).

**drylots** - No pasture; daily feed and water is provided by the caretaker.

**dwarfism** - State of being abnormally undersized. Two kinds of dwarfs are recognized: proportionate and disproportionate.

**dystocia** - Difficult birth.

## E

---

**edema** - Abnormal collection of fluid in body tissues that causes soft swelling.

**ejaculation** - Discharge of semen from the male.

**eliminative behavior** - Involves voiding of feces and urine.

**emasculator** - Tool used for castration.

**embryo** - Very early stage of individual development within the uterus. The embryo grows and develops into a fetus. In poultry, the embryo develops within the eggshell.

**embryo transfer (ET)** - The transfer of fertilized eggs from a donor female to one or more recipient females.

**embryology** - The study of body before birth.

**endocrine gland** - A ductless gland that secretes a hormone into the bloodstream.

**endocrinology** - Science that deals with the study of the endocrine glands and their secretions, the hormones.

**endometrium** - Mucous membrane that lines the uterus.

**endoplasmic reticulum** - A network of membranous tubules within the cytoplasm of a eukaryotic cell, continuous with the nuclear membrane. It usually has ribosomes attached and is involved in protein and lipid synthesis.

**enterotoxemia** - A disease of the intestinal tract caused by bacterial secretion of toxins.

**environment** - Sum total of all external conditions that affect the well-being and performance of an animal.

**enzyme** - A complex protein produced by living cells that causes changes in other substances in the cells without being changed itself and without becoming a part of the product.

**epididymis** - Long, coiled tubule leading from the testis to the vas deferens.

**epididymitis** - An inflammation of the epididymis.

**epimeletic behavior** - Caregiving and care-seeking behaviors.

**epinephrine** - Adrenaline

**epiphysis** - A piece of bone separated from a long bone in early life by cartilage, which later becomes part of the larger bone.

**epistasis** - A situation in which a gene or gene pair masks (or controls) the expression of another nonallelic pair of genes.

**equine** - Refers to horses.

**equine encephalomyelitis** - An inflammation of the brain of horses.

**erythrocytes** - Red blood cells.

**esophageal groove** - A groove in the reticulum between the esophagus and omasum. Directs milk in the nursing young ruminant directly from the esophagus to the omasum.

**esophagus** - Muscular tube that connects the pharynx to the stomach

**essential amino acids** - Those which cannot be made in the body from other substances, or which cannot be made in sufficient amounts for physiological (body function) needs.

**essential nutrient** - A nutrient that cannot be synthesized by the body and must be supplied in the diet.

**Estradiol benzoate** - A natural type of estrogen (female hormone) combined with the chemical benzoate.

**estrogen** - Any hormone (including estradiol, estriol, and estrone) that causes the female to come physiologically into heat and to be receptive to the male. Estrogens are produced by the follicle of the ovary and by the placenta.

**estrous** - An adjective meaning "heat," which modifies such words as cycle. The estrous cycle is the heat cycle, or time from one heat to the next.

**estrous synchronization** - Controlling the estrous cycle so that a high percentage of the females in the herd express estrus at approximately the same time.

**estrus** - The period of mating activity in the female mammal. Same as heat.

**ET** - See embryo transfer.

**ethology** - The study of animal behavior



**eukaryote** - Cell or organism with membrane-bound, structurally discrete nucleus and other well-developed subcellular compartments. Eukaryotes include all organisms except viruses, bacteria, and blue-green algae.

**euthanized** - Put to death humanely.

**eviscerate** - Removal of the internal organs during the slaughtering process.

**evolution** - A change in the genetic makeup of a population with time.

**ewe** - A sexually mature female sheep. A ewe lamb is a female sheep before attaining sexual maturity.

**excretion** - Expelling of waste products not useful in the animal's body.

**exocrine gland** - Gland that secretes fluid into a duct.

## **F**

---

**fallopian tubes** - Found at the anterior end of each uterine horn.

**farrow** - To deliver, or give birth to pigs; same as parturition.

**fat** - Adipose tissue.

**fat-soluble vitamins** - Any vitamin that is soluble in fats.

**FDA** - See Food and Drug Administration.

**feces** - Bowel movements, excrement from the intestinal tract.

**feed additive** - Ingredient (such as an antibiotic or hormone-like substance) added to a diet to perform a specific role (e.g., to improve gain or feed efficiency).

**feed efficiency** - (1) The amount of feed required to produce a unit of weight gain or milk; for poultry, this term can also denote the amount of feed required to produce a given quantity of eggs; (2) The amount of gain made per unit of feed.

**feed mill** - Convert raw materials into finished feed according to very specific formulas developed by nutritionists.

**feeder** - Animals (e.g., cattle, lambs, pigs) that need further feeding prior to slaughter.

**felting** - Intermingling of wool fibers

**feral** - Domesticated animals that return to nature to survive and reproduce.

**fermenting** - An anaerobic process that converts sugar to acids, gases and/or alcohol.

**fertility** - The capacity to initiate, sustain, and support reproduction. With reference to poultry, the term typically refers to the percentage of eggs that, when incubated, show some degree of embryonic development.

**fertilization** - Process in which a sperm unites with an egg to produce a zygote.

**fetus** - Later stage of individual development within the uterus. Generally, the new individual is regarded as an embryo during the first half of pregnancy, and as a fetus during the last half.

**filly** - A young female horse.

**fingerlings** - Young fish, usually 1 to 6 in. long.

**finish** - Degree of fatness of an animal.

**fistula** - A running sore at the top of the withers of a horse, resulting from a bruise followed by invasion of microorganisms.

**fleece** - Wool shorn at one time from all parts of the sheep.

**flehmen** - A pattern of behavior expressed in some male animals (e.g., bull, ram, stallion) during sexual activity. The upper lip curls up and the animal inhales in the vicinity of the vulva or urine.

**floating** - Filing horses teeth.

**flock** - A group of sheep or poultry.

**flushing** - Placing females (typically sheep and swine) on a gaining level of nutrition before breeding to stimulate greater ovulation rates; also, a behavior in fish whereby diseased fish rub against objects in tanks or ponds.

**foal** - A young male or female horse (noun) or the act of giving birth (verb).

**follicle** - A blister-like, fluid-filled structure in the ovary that contains the egg.

**follicle-stimulating hormone (FSH)** - A hormone produced and released by the anterior pituitary that stimulates the development of the follicle in the ovary.

**Food and Drug Administration (FDA)** - A U.S. government agency responsible for protecting the public against impure and unsafe foods, drugs, veterinary products, and other products.

**food nutrient** - A substance that provides nourishment for growth or metabolism.

**footrot** - A disease of the foot in sheep and cattle. In sheep, it causes rotting of tissue between the horny part of the foot and the soft tissue underneath.

**forages** - Plant material, leaves and stems.

**forb** - Weedy or broadleaf plants, as contrasted to grasses, that serve as pasture for animals.

**founder** - Nutritional ailment resulting from overeating. Lameness in front feet with excessive hoof growth usually occurs.

**freemartin** - Female born twin to a bull (approximately 9 of 10 will not conceive).

**freshen** - To give birth to young and initiate milk production. This term is usually used in reference to dairy cattle.

**fundus** - The part of a hollow organ (such as the uterus or the gallbladder) that is farthest from the opening.

**fungi** - Large group of spore-producing organisms that includes microorganisms such as yeasts and molds.

**furrowing** - The cell pinches in on all sides until two daughter cells are formed.

## **G**

---

**gait** - The paces of an animal, especially a horse or dog.

**gallop** - A three-beat gait in which each of the two front feet and both of the hind feet strike the ground at different times.

**gametes** - Male and female reproductive cells; the sperm and the egg.

**gametogenesis** - Process by which sperm and eggs are produced.

**gastric enzymes** - Enzymes that are secreted in the stomach.

**gelding** - A male horse that has been castrated.

**gene** - Fundamental physical and functional unit of heredity.

**genetic** - Of or relating to genes or heredity.

**genetic code** - Sequence of nucleotides, coded in triplets (codons) along the mRNA, that determines the sequence of amino acids in protein synthesis.

**genitalia** - Male and female anatomy.

**genome** - Sum total of a living organism's genetic material. The genome is divided into chromosomes, which contain genes, and genes are made of DNA.

**genomics** - Study of genes and their function.

**genotype** - Genetic constitution, or makeup, of an individual. For any pair of alleles, three genotypes (e.g., **AA**, **Aa**, and **aa**) are possible.

**gestation** - Time from breeding or conception of a female until she gives birth to her young.

**gilt** - A young female swine prior to the time that she has produced her first litter.

**gizzard** - An organ found in the digestive tract of a chicken.

**glycogen** Storage form of starch in body.

**goiter** - Enlargement of the thyroid gland, usually caused by iodine-deficient diets.

**Golgi apparatus/bodies** - Site of accumulation for cells that synthesize and secrete lipids and proteins.

**gomer bulls** - An intact male that has undergone a penile deviation, penile removal, or vasectomy to render him incapable of physically breeding cows

**gonad** - Testis of the male; ovary of the female.

**gonadotropin** - Hormone that stimulates the gonads.

**grade** - (1) A designation of live or carcass merit (e.g., choice grade); (2) livestock not registered with registry (e.g., breed) association.

**grooming behavior** - Seen between animals or as they groom themselves.

**gross anatomy** - That which can be seen with the naked eye.

**growth** - Increase in protein over its loss in the animal body. Growth occurs by increases in cell numbers, cell size, or both.

**growth promotants** - Used to help increase the efficiency of animal production by increasing weight gain and product output.

## H

---

**half-life** - Time it takes for the body to eliminate half of the substance - it is a common measure for use in describing how long substances stay in an animal's body

**hand** - Used in measuring the height of horses, equivalent to four inches.

**handmating** - Bringing a female to a male for service (breeding), after which she is removed from the area where the male is located; same as handbreeding.

**hank** - A measurement of the fineness of wool. A hank is 560 yards of yarn. More hanks of yarn are produced from fine wools than coarse wools.

**haploid** - Having a single set of unpaired chromosomes.

**hardware stomach** Reticulum

**hatchery** - A place where the hatching of fish or poultry eggs is artificially controlled for commercial purposes.

**hay** - Harvested forage such as alfalfa hay.

**heat** - See estrus.

**heat increment** - Increase in heat production after consumption of feed when an animal is in a thermoneutral environment. It includes additional heat generated in fermentation, digestion, and nutrient metabolism.

**heaves** - A respiratory defect in horses during which the animal has difficulty completing the exhalation of inhaled air.

**heifer** - A young female bovine cow before the time that she has produced her first calf.

**helminths** - A parasitic worm; a fluke, tapeworm, or nematode.

**hemoglobin** - Iron-containing pigment of the red blood cells. It carries oxygen from the lungs to the tissues.

**hen** - An adult female domestic fowl, such as a chicken or turkey.

**herbivorous** - Subsisting or feeding on plants.

**herd** - A group of animals. Used with beef, dairy, or swine.

**hereditary** - Passing to offspring through genes.

**heritability** - Traits passed from generation to generation.

**hernia** - Protrusion of some of the intestine through an opening in the body wall (also commonly called rupture). Two types of hernias, umbilical and scrotal, occur in farm animals.

**heterosis** - Performance of offspring that is greater than the average of the parents; usually the amount of superiority of the crossbred over the average of the parental breeds. Also referred to as hybrid vigor.

**heterozygous** - A term designating an individual that possesses unlike genes for a particular trait.

**heterozygous genotype** - An organism that has both the dominant and the recessive gene.

**hinny** - Offspring that results from crossing a stallion with a female donkey(jenny).

**histology** - Study of tissues.

**homeostasis** - A state of equilibrium, as in an organism or cell, maintained by self-regulating processes.

**homogenized** - Milk that has had the fat droplets broken into very small particles so that the milk fat stays in suspension in the milk fluids.

**homologous** - Corresponding in type of structure and derived from a common primitive origin.

**homozygous** - A term designating an individual whose genes for a particular trait are alike.

**hormone** - A chemical substance secreted by a ductless gland; usually carried by the bloodstream to other places in the body where it has its specific effect on another organ.

**host-specific** - Only live in certain types of animals.

**hundred-weight** - cwt; 100 pounds.

**husbandry** - Management and care of farm animals.

**hybrid vigor** - See heterosis.

**hydrolyze** - Decompose by reacting with water.

**hypothalamus** - A portion of the brain found in the floor of the third ventricle. It regulates reproduction, hunger and body temperature and has other functions.

**hypoxia** - A condition resulting from deficient oxygenation of the blood.

## I

---

**ileum** - Distal portion of the small intestine.

**immune response** - Generate antibodies to protect against specific diseases.

**immunity** - Ability of an animal to resist or overcome an infection.

**immunoglobulins** - Any of a class of proteins present in the serum and cells of the immune system, that function as antibodies.

**impaction** - Obstructive lodging of food in the intestine.

**implant** - To graft or insert material to intact tissues.

**implantation** - A attachment of the fertilized egg to the uterine wall.

**imprinting** - Learning associated with maturational readiness.

**inbreeding** - Mating of individuals who are more closely related than the average individuals in a population. Inbreeding increases homozygosity in the population but it does not change gene frequency.

**incisor** - A front tooth.

**incomplete dominance** - A form of intermediate inheritance in which one allele for a specific trait is not completely dominant over the other allele.

**incubation period** - Time between which an egg is placed into an incubator and the young is hatched.

**infection** - Invasion of the body tissues by microbial agents or parasites other than insects.

**infectious** - Capable of invading and growing in living tissues; describes various pathogenic microorganisms such as viruses, bacteria, protozoa, and fungi.

**ingest** - Anything taken into the stomach.

**ingesta** - Substances taken into the body as nourishment.

**ingestive behavior** - Includes the mechanics of eating and chewing, obtaining food and water - the daily patterns of feeding.

**inheritance** - Transmission of genes from parents to offspring.

**insemination** - Deposition of semen in the female reproductive tract.

**instinct** - Inborn behavior.

**insulin** - Hormone secreted by the pancreas to control blood sugar level and utilization of sugar in the body.

**integration** - Bringing together of all segments of a livestock or poultry production program under one centrally organized unit.

**intelligence** - Ability to learn to adjust successfully to situations.

**interphase** - Resting phase between successive mitotic divisions of a cell, or between the first and second divisions of meiosis.

**interstitial cells** - Cells between the seminiferous tubules of the testicle that produce testosterone.

**interstitial fluid** - A solution that bathes and surrounds the cells of multicellular animals.

**intravenous** - Within the vein. An intravenous injection is an injection into a vein.

**invertebrates** - Animals lacking a backbone.

**investigative behavior** - Shown when animals explore or investigate a new environment or object.

## **J**

---

**jennet** - A female donkey.

**jenny** - A female donkey.

## **K**

---

**kemp** - Coarse, opaque, hairlike fibers in wool.

**ketosis** - A condition (also called acetonemia) that is characterized by a high concentration of ketone bodies in the body tissues and fluids.

**kid** - Young goat.



**kilocalorie (kcal, Kcal)** - An amount of heat equal to 1,000 calories. See also calorie.

**kingdom** - First and largest division of living things - plants and animals.

**kosher meat** - Meat from ruminant animals with split hooves where the animals have been slaughtered according to Jewish law.

## **L**

---

**lactalbumin** - A nutritive protein of milk.

**lactation** - Secretion and production of milk.

**lactation curve** - Period during which the mammary glands secrete milk.

**lactoglobulin** - A crystalline protein fraction.

**lactose** - Milk sugar; when digested, it is broken down into one molecule of glucose and one of galactose.

**lamb** - (1) A young male or female sheep, usually less than 1 year of age; (2) to deliver, or give birth to, a lamb.

**lambling** - Act of giving birth. Same as parturition.

**lambling jug** - A small pen in which a ewe is put for lambling. It is also used for containing the ewe and her lamb until the lamb is strong enough to run with other ewes and lambs.

**laminitis** - Inflammation of the sensitive plates of soft tissue (laminae) within the horse's foot caused by physical or physiologic injury. Severe cases of laminitis may result in founder, an internal deformity of the foot. Acute laminitis sets in rapidly and usually responds to appropriate, intensive treatment; chronic laminitis is a persistent, long-term condition that may be unresponsive to treatment.

**layer** - A hen that is kept for egg production.

**legume** - Any plant of the family *Leguminosae*, such as pea, bean, alfalfa and clover.

**lethargic** - Sluggish

**leukocytes** - White blood cells.

**LH** - See luteinizing hormone.

**libido** - Sex drive or the desire to mate on the part of the male.

**lice** - Small, flat, wingless insect with sucking mouthparts that is parasitic on the skin of animals.

**ligaments** - Strong white fibrous tissues that connect bone to bone.

**lipid** - An organic substance that is soluble in alcohol or ether but insoluble in water; used interchangeably with the term fat.

**litter** - The young produced by multiparous females such as swine. The young in a litter are called littermates.

**liver flukes** - A parasitic flatworm found in the liver.

**lobules** - A small lobe.

**locus** - Place on a chromosome where a gene is located.

**longevity** - Life span of an animal; usually refers to a long life span.

**lumbar group** - Lower back.

**luteinizing hormone (LH)** - A protein hormone, produced and released by the anterior pituitary, which stimulates the formation and retention of the corpus luteum. It also initiates ovulation.

**lymph** - Transparent, nutritive yellow liquid that exudes from blood vessels into tissue spaces and is drained back into the veins through lymph vessels. Lymph plays an important role in fighting infection and maintaining the body's fluid balance.

**lysosomes** - Small bodies where large numbers of enzymes are stored.

## **M**

---

**macrominerals** - Minerals a body needs in larger amounts, includes: calcium, phosphorus, magnesium, sodium, potassium, chloride and sulfur.

**maintenance** - A condition in which the body is maintained without an increase or decrease in body weight and with no production or work being done.

**mammary gland** - Gland that secretes milk.

**mandible** - Lower jaw or jawbone.

**marbling** - Distribution of fat in muscular tissue; intramuscular fat.

**marbling scores** - Amount of fat interspersed in the muscle.

**mare** - A sexually developed female horse.

**marrow** - Soft center of the bone.

**masticate** - To chew food.

**mastitis** - Inflammation of the mammary gland.

**masturbation** - Ejaculation by a male by some process other than sexual intercourse.

**maturity scores** - Reflects age of animal at slaughter.

**mean** - (1) Statistical term for average; (2) term to describe animals having bad behavior.

**medulla** - Inner region of an organ or tissue, especially when it is distinguishable from the outer region or cortex.

**meiosis** - A special type of cell nuclear division that is undergone in the production of gametes (sperm in the male, ova in the female). As a result of meiosis, each gamete carries half the number of chromosomes of a typical body cell in that species.

**melengestrol acetate (MGA)** - A feed additive that suppresses estrus in heifers and is widely used in the feedlot industry.

**messenger RNA (mRNA)** - RNA that serves as a template for protein synthesis.

**metacarpal bones** - Extend from the knee to fetlock.

**metabolism** - (1) The sum total of chemical changes in the body, including the "building up" and "breaking down" processes; (2) the transformation by which energy is made available for body uses.

**Metabolizable Protein (MP)** - Protein available to the animal including microbial protein synthesized by the rumen microorganisms.

**metacarpal bones** - Extend from the knee to fetlock.

**metaphase** - Second stage of cell division, between prophase and anaphase, during which the chromosomes become attached to the spindle fibers.

**metestrus** - Period immediately following estrus.

**metritis** - Inflammation (infection) of the uterus.

**MGA** - See melengestrol acetate.

**microclimate** - A small, special climate within a macroclimate created by the use of such devices as shelters, heat lamps and bedding.

**micromineral** - A mineral that is needed in the diet in relatively small amounts. The quantity needed is so small that such a mineral is often called a trace mineral; for example: iron, iodine, zinc and selenium.

**micronutrients** - Required in small amounts.

**milk fat** - Fat in milk; synonymous with butterfat.

**milk letdown** - Release of milk into the teat cisterns.

**milk-ejection reflex** - An example of endocrine gland activity.

**mimicry** - Animals simply doing what the other animals in the herd or group are doing.

**mites** - Very small arachnids that are often parasitic upon animals.

**mitochondria** - An organelle found in large numbers in most cells, in which the biochemical processes of respiration and energy production occur.

**mitosis** - A process in which a cell divides to produce two daughter cells, each of which contains the same chromosome complement as the mother cell from which they came.

**Modified Live Viruses(MLV)** - Products which contain a live virus but have been changed or modified so as to not cause the disease but still stimulate antibody formation against the disease.

**mohair** - Fleece of the Angora goat.

**monogastric** - Having only one stomach or only one compartment in the stomach. Examples are swine and poultry.

**monorchid** - A male with one fertile testicle.

**morbidity** - Measurement of illness; morbidity rate is the number of individuals in a group that become ill during a specified time.

**mortality** - State of being subject to death.

**motility** - Ability to move under their own power.

**mottled** - Spotted or blotched.

**mouth** - Initial opening of the alimentary canal.

**mucous membranes** - An epithelial tissue that secretes mucus which lines many body cavities and tubular organs including the gut and respiratory passages.

**mule** - Hybrid that is produced by mating a male donkey with a female horse. They are usually sterile.

**mutation** - A change in a gene.

**mutton** - Meat from a sheep that is over 1 year old.

**mutualism** - Specific type of symbiosis between man and animal.

**muzzle** - Nose of horse, cattle, or sheep.

**myofibrils** - Primary component part of muscle fibers.

## **N**

---

**nasal cavity** - Cavity in which the olfactory organs of vertebrate animals are located.

**natural breeds** - Selected by human preference or regional diversity.

**natural immunity** - Refers to the protection an animal has when it is born.

**natural selection** - Sequence of events that lead to a certain characteristic being selected by the environment.

**navel** - Area where the umbilical cord was formerly attached to the body of the offspring.

**necropsy** - Perform a postmortem (after death) examination.

**net energy** - Metabolizable energy minus heat increments; the energy available to the animal for maintenance and production.

**neuron** - A nerve cell which transmits messages from one part of the body to another.

**Neutral Detergent Fiber(NDF)** - Useful measures of feeding value, and should be used to evaluate forages and formulate rations.

**nipple** - See teat.

**Nitrogen-Free Extract (NFE)** - Represents carbohydrates, sugars, starches and a major portion of materials classed as hemicellulose in feeds.

**nitrogenous** - Contains the element nitrogen.

**nomenclature** - Giving and using of names.

**Nonprotein Nitrogen (NPN)** - Nitrogen in feeds from substances such as urea and amino acids, but not from preformed proteins.

**nonruminant** - Simple-stomached or monogastric animal.

**NPN** - See nonprotein nitrogen.

**nucleotide** - Subunit of DNA composed of a five-carbon sugar, a nitrogenous base, and a phosphate group.

**nucleus** - Contains the hereditary, genetic, information and is the control center for the cell.

**nutrient** - (1) A substance that nourishes the metabolic processes of the body; (2) the end product of digestion.

**nutrition** Science dealing with the utilization of feed/food by the body and all body processes which transform feed/food into body tissues and activities.

**nutrient density** - Amount of essential nutrients relative to the number of calories in a given amount of food.

## O

---

**offal** - All organs and tissues removed from inside the animal during the slaughtering process.

**omasum** - One of the stomach components of ruminant animals that has many folds.

**omnivorous** - Feeding on both animal and vegetable substances.

**oocyte** - Ovulated while in the metaphase of meiosis II.

**oogenesis** - Process by which eggs, or ova, are produced.

**organelle** - A structure or part that is enclosed within its own membrane inside a cell and has a particular function.

**osmosis** - Passage (diffusion) of water across a membrane as a result of different concentrations on the two sides of the membrane; movement of water from area of higher concentration to area of lower concentration.

**osteoblasts** - Cells that form layers of bone in the early stages of ossification (bone formation).

**ova** - Plural of ovum, meaning eggs.

**ovary** - Female reproductive gland in which the eggs are formed and progesterone and estrogenic hormones are produced.

**oviduct** - A duct leading from the ovary to the horn of the uterus.

**ovine** - Refers to sheep.

**ovulation** - Shedding, or release, of the egg from the follicle of the ovary.

**ovum** - Egg produced by a female.

**oxytocin** - A hormone released by the pituitary gland that causes increased contraction of the uterus during labor and stimulates the ejection of milk into the ducts of the mammary glands

## **P**

---

**pace** - A lateral two-beat gait in which the right rear and front feet hit the ground at one time and the left rear and front feet strike the ground at another time.

**paired structures** - Similar right and left structures.

**palpation** - Feeling by hand.

**papillae** - Any small, nipple-like process or projection.

**parasite** - An organism that lives a part of its life cycle in or on, and at the expense of, another organism. Parasites of farm animals live at the expense of the farm animals.

**parent cell** - A cell that is the source of other cells.

**parrot mouth** - Upper jaw is longer than lower jaw; also called overshot jaw.

**parturition** - Process of giving birth.

**passive immunity** - Acquired by transferring of antibodies from an immunized animal to an unimmunized one.

**pasteurization** - Process of heating milk to 161°F and holding it at that temperature for 15 seconds to destroy pathogenic microorganisms.

**pasture rotation** - Moving of animals from one pasture to another so that some pasture areas have no livestock on them in certain periods.

**pathogen** - Biologic agent (i.e., bacteria, virus, protozoa, nematode) that may produce disease or illness.

**pathogenic** - Infectious agents causing disease.

**Pearson square** - Helps to formulate seed rations.

**pedigree** - Record of the ancestry of an animal.

**pellets** - A small, condensed formed feed.

**pelt** - Natural, whole-skin covering, including the wool, hair, or fur (e.g., a sheep pelt has the wool left on).

**pelvic cavity** - Contains the terminal part of the digestive system and all of the internal portions of the urogenital system not in the abdominal cavity.

**pen mating** - A cohort of females is brought into the boar's pen and he services them all while they are in the pen.

**penis** - Male organ of copulation. It serves both as a channel for passage of urine from the bladder as an extension of the urethra, and as a copulatory organ through which sperm are deposited into the female reproductive tract.

**per capita** - Per person.

**performance test** - Evaluation of an animal according to its performance.

**pericardium** - A double-walled sac containing the heart and the roots of the great vessels.

**peristaltic movement** - Muscular contractions that move food through the intestines.

**pet** - A domestic or tamed animal or bird kept for companionship or pleasure and treated with care and affection.

**phalanges** - Corresponds to the hand of humans.

**pharynx** - A short, funnel shaped muscular sac between the mouth and esophagus.



**phenotype** - Characteristics of an animal that can be seen and/or measured (e.g., the presence or absence of horns, the color, or the weight of an animal).

**pheromones** - Chemical substances that attract the opposite sex.

**photoperiod** - Time during which light is present.

**phylum** - Each new group within a Kingdom

**physiology** - Science that pertains to the functions of organs, organ systems, or the entire animal.

**pin bones** - In cattle, the posterior ends of the pelvic bones that appear as two raised areas on either side of the tail head.

**pituitary** - Small endocrine gland located at the base of the brain.

**placenta** - Vascular organ that unites the fetus to the uterus.

**plant code** - A code is printed on every carton produced in a processing plant.

**poikilothermic** - Having body temperature that varies with the environment.

**polar bodies** - Minute cell produced and ultimately discarded in the development of an oocyte.

**poll evil** - An abscess behind the ears of a horse.

**polled** - Naturally or genetically hornless.

**polytocus** - Giving birth to several offspring at one time.

**Porcine Stress Syndrome (PSS)** - A genetic defect in swine inherited as a simple recessive. It is associated with heavily muscled animals that may suddenly die when exposed to stressful conditions. Their muscle is usually pale, soft and exudative (PSE).

**posterior** - Toward the rear end of an animal.

**postgastric fermentation** - Fermentation of feed that occurs in the cecum, behind the area where digestion has occurred.

**postnatal** - See postpartum.

**postpartum** - After birth.

**postpartum interval** - Length of time from parturition to when the dam is again pregnant.

**poult** - A young turkey of either sex, from hatching to approximately 10 weeks of age.

**poultry** - Term that includes chickens, turkeys, geese, pigeons, peafowls, guineas and game birds.

**PQA-Plus** - Pork Quality Assurance Plus

**predisposing** - Inclined to.

**pregastric fermentation** - Occurs in the rumen of ruminant animals, before feed passes into the portion of the digestive tract in which digestion actually occurs.

**pregnancy testing** - Evaluation of females for pregnancy through palpation or using an ultrasound machine.

**premix** - A uniform mixture of one or more micro ingredients with diluent and/or carrier. Premixers are used to facilitate uniform dispersion of the micro ingredients in a large mix.

**prenatal** - Prior to being born; before birth.

**primary breeder** - Responsibility is to develop and reproduce strains of chicken that meet the requirements of chicken producer/processing companies.

**Prime** - Superior marbling, proper carcass conformation and adequate maturity.

**probe** - A device used to measure backfat thickness in pigs and cattle.

**proestrus** - Phase of the estrous cycle just before heat (estrus).

**progeny testing** - An evaluation of an animal on the basis of performance of its offspring.

**progesterone** - A hormone produced by the corpus luteum that stimulates progestational proliferation in the uterus of the female.

**prokaryote** - Cell or organism lacking a membrane-bound, structurally discrete nucleus and other subcellular compartments. Bacteria are prokaryotes.

**prolapsed** - Turned inside out.

**pronuclei** - Either of a pair of gametic nuclei, in the stage following meiosis but before their fusion leads to the formation of the nucleus of the zygote.

**prophase** - First stage of cell division, before metaphase, during which the chromosomes become visible as paired chromatids and the nuclear envelope disappears.

**prostaglandins** - Chemical mediators that control many physiological and biochemical functions in the body. One prostaglandin (PGF<sub>2</sub> alpha) can be used to synchronize estrus.

**prostate** - A gland of the male reproductive tract that is located just back of the bladder. It secretes a fluid that becomes part of semen at ejaculation.

**protein** - A large molecule of one or more chains of amino acids in a specific order, the order is determined by the base sequence of nucleotides in the gene coding for the protein.

**protein supplement** - Any dietary component containing a high concentration(at least 25%) of protein.

**protoplasm** - Viscid or semi-liquid and jello-like substance which makes up the living cell.

**protozoa** One-celled, mobile organisms with a nucleus.

**proventriculus** - Acts as the true stomach of a bird.

**proximal** - Nearest; the position that is closest to the point of attachment for a limb or bone.

**PSE** - See pale, soft, exudative.

**Psitticosis (parrot fever)** - Acute or chronic disease characterized by respiratory and systemic infection.

**PSS** - See Porcine Stress Syndrome

**ptyalin** - A form of amylase found in the saliva of humans and some other animals.

**puberty** - Age at which the reproductive organs become functionally operative.

**pullet** - Young female chicken from day of hatch through onset of egg production; sometimes the term is used through the first laying year.

**purebred** - An animal eligible for registry with a recognized breed association.

**pylorus** - Opening from the stomach into the duodenum (small intestine).

## Q

---

**qualitative trait** - A trait expressed categorically because of a sharp distinction between phenotypes (e.g., black and red). Usually only one or a few pairs of genes are involved in the expression of a qualitative trait.

**quality grades** - Animals grouped according to value as prime, choice, etc., based on conformation and fatness of the animals.

**quantitative trait** - A trait expressed on a continuous/numerical scale because of a gradual variation from one phenotype to another (e.g., weaning weight). Usually many gene pairs and environmental influences are involved in the expression of such traits.

## R

---

**rabies** - A disease-causing virus transmitted through bites.

**race** - Considered simply a subdivision of a species which breeds true except for minor variations.

**rack** - (1) A rapid four-beat gait of a horse; (2) a wholesale cut of lamb located between the shoulder and loin.

**ram** - A male sheep that is sexually mature.

**ram power** - Number of rams/number of ewes.

**rancid** - Spoiled

**ration** - Amount of total feed fed to an animal over a 24-hour period.

**reactive behavior** - An animal reacting to its surroundings such as communicating and visual contact with the rest of the herd, a reflex to pain and discomfort or seeking shelter.

**receptor cells** - Other cells that will respond to a hormone in a target gland or organ.

**recessive gene** - A gene that has its phenotype masked by its dominant allele when the two genes are both present in an individual.

**recombinant DNA (rDNA)** - Isolated DNA molecules that can be inserted into the DNA of another cell. rDNA is used in the genetic engineering process.

**registered** - Recorded in the herd book of a breed.

**regurgitate** - To cast up digested food to the mouth as is done by ruminants.

**reproduction** - Production of live, normal offspring.

**reproductive glands** - Include the testes and ovaries; produce germ or “sex” cells for reproduction and the hormones testosterone and progesterone.

**retained placenta** - Placenta remains within the reproductive tract after parturition has occurred.

**reticulum** - One of the stomach components of ruminant animals that is lined with small compartments, giving a honeycomb appearance.

**rhinopneumonitis** - Equine herpesvirus-1; it produces acute mucus upon primary infection.

**ribonucleic acid (RNA)** - An essential chemical component of living cells, composed of long chains of phosphate, ribose sugar, and several bases; found in the nucleus and cytoplasm of cells and plays an important role in protein synthesis and other chemical activities of the cell.

**ribosomes** - A minute particle consisting of RNA and associated proteins, found in large numbers in the cytoplasm of living cells.

**rickets** - A disease of disturbed ossification of the bones caused by a lack of vitamin D or unbalanced calcium/phosphorus ratio.

**ringbone** - An ossification of the lateral cartilage of the foot of a horse all around the foot.

**riparian** - An area next to water (stream, river, or lake) where more vegetation grows (compared to a greater distance from the water source) because of the added moisture from the water. Grazing animals usually inhabit this area more frequently than others, thus increasing the possibility of overgrazing.

**RNA** - See ribonucleic acid.

**roughage** - A feed that is high in fiber, low in digestible nutrients, and low in energy. Such feeds as hay, straw, silage and pasture are examples.

**rumen** - The large fermentation pouch of the ruminant animal in which bacteria and protozoa break down fibrous plant material that is swallowed by the animal; sometimes referred to as the paunch.

**ruminant** - A mammal whose stomach has four parts (rumen, reticulum, omasum, and abomasum). Cattle, sheep, goats, deer, and elk are ruminants.

**rumination** - Regurgitation of undigested food and chewing it a second time, after which it is again swallowed.

## **S**

---

**salivary glands** - Exocrine glands that secrete juices in the mouth that are mixed with the food.

**salmonella** - Gram-positive, rod-shaped bacteria that cause various diseases such as food poisoning in animals.

**sanitation** - Cleanliness

**satellite farms** - Production facilities located at a different location from the processing facility.

**scale** - (1) Size; (2) equipment on which an animal is weighed.

**scrotum** - A pouch that contains the testes. It is also a thermoregulatory organ that contracts when cold and relaxes when warm, thus tending to keep the testes at a lower temperature than that of the body.

**scurvy** - Swollen and painful joints and bleeding gums in humans and brittleness of bones.

**secondary sex characteristics** - Those that begin to show with the onset of puberty.

**secretion** - Production of substances useful for the cells in other parts of the body.

**secretory cells** - Produce products that are subsequently deposited in either the blood stream or a special duct to an organ, where they are used.

**seedstock herds** - Breeding cattle typically registered with a breed association.

**selection** - Differentially reproducing what one wants in a herd or flock.

**semen** - Fluid containing the sperm that is ejaculated by the male. Secretions from the seminal vesicles, the prostate gland, the bulbourethral glands, and the urethral glands provide most of the fluid.

**seminal vesicles** - Accessory sex glands of the male that provide a portion of the fluid of semen.

**seminiferous tubules** - Minute tubules in the testicles in which sperm are produced. They comprise about 90% of the mass of the testes.

**sequencing** - Putting the amino acids in correct order; determining genetic make-up.

**Sertoli cells** - Serve a protective and nutritional role for the germ cells (spermatogonia or sex cells).

**service** - To breed or mate.

**settle** - To become pregnant.

**sex-linked inheritance** - Phenotypic expression of an allele related to the chromosomal sex of the individual.

**sexual behavior** - Involves the courtship, mating and maternal behavior and is controlled by hormones but may be learned.

**shearing** - Process of removing the fleece (wool) from a sheep.

**shoat** - A young pig of either sex.

**shoe boil** - Blemish of the horse caused by the horseshoe putting pressure on the elbow when the horse lies down.

**shrink** - Loss of weight, commonly used in the loss in live weight when animals are marketed or loss in weight from grease wool to clean wool.

**sigmoid flexure** - S-shape of the retracted penis in livestock.

**silage** - Forage, corn fodder, or sorghum preserved by fermentation that produces acids similar to the acids that are used to make pickled foods for people.

**simple stomach** - Extensive intestinal system with an enlarged cecum.

**sinuses** - Hollow walled spaces.

**sire** - Male parent.

**skins** - Hides from smaller animals such as pigs, sheep, goats and wild animals; a beef hide weighs less than 30 lb.

**smooth muscle cells** - Spindle-shaped cells that are not striated; they contain one centrally located nucleus per cell.

**SNF** - See solids-nonfat.

**solids-nonfat** - Total milk solids minus fat, includes protein, lactose and minerals.

**somatic** - Body cells.

**somatic cell count** - An indicator of the quality of milk.

**somatotropin** - Growth hormone from the anterior pituitary that stimulates nitrogen retention and growth.

**sound** - A horse who has no lameness or illness.

**sow** - A female swine that has farrowed one litter or has reached 12 months of age.

**spawn** - Act of fish laying eggs.

**spay** - To remove the ovaries.

**spermatid** - Haploid germ cell prior to spermiogenesis, the formation of sperm.

**spermatogenesis** - Process by which spermatozoa are formed.

**spermatogonia** - Sperm producing cells.

**spermatozoa** - Viable male sex cells.

**spermiogenesis** - Process by which the spermatid loses most of its cytoplasm and develops a tail to become a mature sperm.

**spontaneous mutations** - New breeds that showcase a mutation.

**stags** - Castrated male sheep, cattle, goats, or swine that have reached sexual maturity prior to castration.

**stallion** - A sexually mature male horse.

**standard grade** - Usually older animals and thin animals.

**staple length** - Length of wool fibers.

**steer** - A castrated bovine male that was castrated early in life before puberty.

**sterile** - Inability to produce offspring.

**steroid** - Artificially produced drug similar to the natural hormone that controls inflammation and regulates water balance.

**stocker (cattle)** - Weaned cattle that are fed high-roughage diets (including grazing) before going into the feedlot.



**stocker (fish)** - Usually 6 to 12 inches in length and less than 0.75 lb.

**strangles** - An infectious disease of horses, characterized by inflammation of the mucous membranes of the respiratory tract.

**streptococcus** - Spherical, gram-positive bacteria that divide in only one plane and occur in chains. Some species cause serious disease.

**stress** - An unusual or abnormal influence causing a change in an animal's function, structure, or behavior.

**striated muscle cells** - Voluntary muscle cells that produce movement; connected to bones and contraction causes movement.

**strongyles** - Any of various roundworms living as parasites, especially in domestic animals.

**stud** - Usually the same as stallion. Also a place where male animals are maintained (i.e., bull stud).

**subcutaneous** - Situated beneath, or occurring beneath, the skin. A subcutaneous injection is an injection made under the skin.

**subspecies** - A subdivision or smaller part of a group of animals (those in a species).

**superior** - Above or over.

**superovulation** - Hormonally induced ovulation of a greater than normal number of eggs.

**supplement** - A feed used with another to improve the nutritive balance of performance of the total and intended to be (1) fed undiluted as a supplement to other feeds, (2) offered free choice with other parts of the ration separately available, or (3) further diluted and mixed to produce a complete feed.

**surfactants** - Ingredients that reduce surface tensions of liquids and are used to reduce and stop foaming to prevent bloat.

**symbiosis** - A biological situation in which at least two different kinds of organisms interact; these can include plants, animals, or plant and animal.

**sympatric species** - Those which can interbreed, but in practice do not because of differences in behavior, breeding, food sources, etc.,

**Synovex H** - Synthetic steroid used in meat production.

**synovial fluid** - Secreted by the synovial membrane; helps lubricate the joint.

**synthetic** - Made by chemical synthesis, especially to imitate a natural product.

**synthesized** - Formed

## T

---

**tack** - Equipment used for riding or driving horses.

**tags** - (1) Wool covered with manure; (2) abbreviated form of ear tags, used for identification.

**tail docking** - Intentional removal of part of an animal's tail.

**taming** - On the path to domestication, but a tamed animal is not a domestic animal.

**taxonomy** - Science of classification and the arrangement of plants and animals into groups based on their natural relationships.

**TDN** - See Total Digestible Nutrients.

**teat** - Protuberance of the udder through which milk is drawn.

**telophase** - Final phase of cell division, between anaphase and interphase, in which the chromatids or chromosomes move to opposite ends of the cell and two nuclei are formed.

**temporal bone** - Either of a pair of compound bones forming the sides and base of the skull.

**tendon** - Tough, fibrous connective tissue at ends of muscle bundles that attach muscle to bones or cartilage structures.

**testicle** - Male sex gland that produces sperm and testosterone.

**testosterone** - Male sex hormone that stimulates the accessory sex glands, causes the male sex drive, and causes the development of masculine characteristics.

**testosterone propionate** - A natural hormone which has been combined with a chemical, propionic acid, to increase its half-life.

**tetanus** - Rigid paralytic disease caused by *Clostridium tetani*, an anaerobic bacterium that lives in soil and feces.

**tetrad** - A group of four similar chromatids formed by the splitting longitudinally of a pair of homologous chromosomes during meiotic prophase.

**thermal** - Temperature

**thoracic cavity** - Chest cavity

**thoracic limbs** - Arms or front legs (including the scapula, arm, radius, ulna, manus, carpus and digits)

**thrombocytes** - Platelets in the blood.

**thrush** - Foot disease characterized by degeneration of the hoof frog and a thick, foul-smelling discharge.

**thyroid gland** - Two-lobed endocrine gland in the neck that controls the rate at which basic body functions proceed.

**thyroxine** - Main hormone produced by the thyroid gland, acting to increase metabolic rate and so regulating growth and development.

**tibia** - Corresponds with the shin bone of humans.

**toeing in** - Toes of front feet turn in; also called pigeon-toed.

**toeing out** - Toes of front feet turn out; also called splayfooted.

**tom** - A male turkey.

**tongue** - A tool of prehension that is used to grasp the food or to guide it in the mouth and on to the throat.

**Total Digestible Nutrients (TDN)** - Includes the total amounts of digestible protein, nitrogen-free extract, fiber, and fat (multiplied by 2.25), all summed together.

**toxoids** - An inactivated, altered toxins (the poison that is produced by pathogenic bacteria) used to stimulate immunity.

**trot** - A diagonal two-beat gait in which the right front and left rear feet strike the ground in unison, and the left front and right rear strike the ground in unison.

**tuberculosis** - Caused by bacteria and usually settles in the lungs.

**turbidity** - Muddiness created by stirring up sediment or having foreign particles suspended.

**turbinates** - Cartilaginous bone (not hard) covered by highly vascular (many blood vessels) mucosa which serves to clean and warm the air as the animal breathes in.

## U

---

**udder** - Encased group of mammary glands of animals.

**Undegradable Intake Protein (UIP)** - Commonly called "bypass protein" because it bypasses rumen breakdown and is mainly digested in the small intestine.

**undershot jaw** - Lower jaw is longer than upper jaw.

**unsoundness** - Any defect or injury that interferes with the usefulness of an animal.

**urea** - Often used as a protein substitute in ruminants. It is a source of nitrogen which the rumen "bugs" can use to make bacterial protein.

**urogenital system** - Refers to the urinary tract and the accompanying genitalia (male and female anatomy).

**uterine horns** - Two branches of the uterus.

**uterus** - That portion of the female reproductive tract where the young develop during pregnancy.

## V

---

**vaccination** - Act of administering a vaccine or antigens.

**vaccine** - Suspension of attenuated or killed microbes or toxins administered to induce active immunity.

**vacuoles** - Storage bodies for water, minerals, etc. and can be large in plant cells.

**vagina** - Copulatory portion of the female's reproductive tract. The vestibule portion serves for passage of urine during urination; also serves as a canal through which young pass when born.

**variation** - Deviation from the normal biological form, function, or structure.

**vas deferens** - Duct that carries sperm from the epididymis to the urethra.

**vasectomy** - Removal of a portion of the vas deferens. As a result, sperm are prevented from traveling from the testicles to become part of the semen.

**veal** - Meat from very young cattle, under 3 months of age.

**vein** - Vessel through which blood passes from various organs or parts back to the heart.

**ventral** - Lower or abdominal surface of an animal.

**ventral cavity** - Contains most of the viscera or guts.

**vertebrate** - Having a spinal column.

**vertical integration** - A style of business management that allows for maximum control of the products produced.

**villi** - Projections of the inner lining of the small intestine.

**virus** - Ultramicroscopic bundle of genetic material capable of multiplying only in living cells. Viruses cause a wide range of disease in plants, animals, and humans, such as rabies and measles.

**viscera** - Internal organs and glands contained in the thoracic and abdominal cavities.

**vitamin** - An organic catalyst, or component thereof, that facilitates specific and necessary functions; for example: the B-vitamins, vitamins A, D, E and K.

**vulva** - External genitalia of a female mammal.

## **W**

---

**walk** - A four-beat gait of a horse in which each foot strikes the ground at a time different from each of the other three feet.

**water-soluble vitamins** - Carried to the body's tissues but are not stored in the body; the B-vitamins and vitamin C.

**weaner** - An animal that has been weaned or is nearing weaning age.

**weaning** - Separating young animals from their dams so that the offspring can no longer suckle.

**wether** - A male sheep castrated before reaching puberty.

**white cells (leukocytes, white blood cells)** - Colorless blood cells active in the body's defense against infection or other assault; five types are neutrophils, lymphocytes, eosinophils, monocytes and basophils.

**white muscle disease** - A muscular disease caused by a deficiency of selenium or vitamin E.

**withers** - Top of the shoulders.

**wool** - Fibers that grow from the skin of sheep.

**Wool Act** - The Wool Act of 1699 is an Act of the Parliament of England which attempted to heighten taxation and increase control over colonial trade and production.

**wool staple** - A cluster of wool fibers.

**woolen** - A type of yarn that is created from carded wool. It is light, soft and stretchy. It can be used to make blankets, hosiery and flannels.

**worsted wool** - Made from the long fibers that have been combed to make sure the fibers run the same direction and not carded but washed.

## **X-Y-Z**

---

**yearling** - Animals that are approximately 1 year old.

**yield** - See dressing percentage.

**yield grade** - Grouping of animals according to the estimated trimmed lean meat that their carcass would provide; used interchangeably with cutability.

**yolk** - (1) The yellow part of the egg; (2) the natural grease (lanolin) of wool.

**yolk sac** - Layer of tissue encompassing the yolk of an egg.

**Zeranol (Ralgro)** - A synthetic compound (not a steroid) and is recognized in the target cells as estrogen.

**Zona pellucida** - A protective covering around the ova, egg.

**zygote** - Cell formed by the union of two gametes.