

**NATURAL RESOURCES CONSERVATION SERVICE
VIRGINIA TECHNICAL NOTE**

Agronomy – Forages/Pasture and Hayland Management #2

TERMS AND DEFINITIONS USED IN GRAZING LIVESTOCK PRODUCTION

Following are terms and definitions often used with grazing systems.

acid detergent fiber (ADF) - insoluble residue following extraction of herbage with acid detergent; cell wall constituents minus hemicellulose. It is neutral detergent fiber (NDF) minus the hemicellulose component. ADF is negatively correlated with digestibility, i.e., the higher the ADF, the less digestible.

alkaloid - a basic organic compound with nitrogen in its structure found in some forages (some fescues, some perennial ryegrasses, some reed canary grasses). It depresses livestock forage intake and may be harmful to health at high levels of intake. An example is perloine.

animal unit (AU) - the amount of dry matter one mature nonlactating, non-gaining cow weighing 1,000 pounds will consume in a year. The amount depends on the percent of body weight intake. For example, at 2.6% intake, the amount will be 9,490 pounds per year. This is based on an average forage consumption of 26 pounds of dry matter per day times 365 days per year ($26 \times 365 = 9,490$ pounds per year).

animal unit day (AUD) - the amount of dry forage consumed by one animal unit per 24 hour period. For example, at 2.6% intake rate, the amount is 26 pounds ($0.026 \times 1,000$ pounds = 26 pounds dry matter per day).

animal unit equivalent - the animal unit assigned to various classes of livestock. A 1,000 pound non-lactating and non-gaining cow is one animal unit equivalent. A lactating cow weighing 1200 pounds may be 1.4 animal unit equivalents. A 450 pound gaining stocker may be 0.5 animal unit equivalents.

animal unit month (AUM) - the amount of dry forage consumed by one animal unit for one month. For example, at 2.6% intake rate, the amount is 790.8 pounds per month ($0.026 \times 1,000 \times 365$ days/yr divided by 12 months = 790.8 pounds).

available forage - that portion of the forage, expressed as weight of forage per unit land area, that is accessible for consumption by specific kind, class, sex, size, age, and physiological status of grazing animals.

average daily gain - measurement of daily body weight change in an animal usually associated with animals in feed lots or on feed tests.

birth weight - the weight of a calf taken within 24 hours after birth.

bloat - excessive accumulation of gases in the rumen of animals because loss through the esophagus is impaired, causing distension of the rumen.

body condition - the amount of stored fat in an animal; a score is usually assigned to different degrees of fatness.

canopy cover - percent of soil surface covered by the vertical project of the vegetation canopy occupying a site.

carbohydrates, nonstructural - soluble carbohydrates found in plant cell contents. Assumed to be available to support life processes.

carbohydrates, structural - carbohydrates found in plant cell walls assumed to not be available to support life processes, i.e., hemicellulose, cellulose (see ADF, NDF).

carrying capacity - the maximum stocking rate (animals per acre or acres per animal) that will achieve a target level of animal performance in a specified grazing method that can be applied over a defined period of time without deterioration of the ecosystem.

concentrate - a feed or feed mixture which contains less than 18% crude fiber.

creep grazing - the practice of allowing juvenile animals to graze areas that their dams cannot access at the same time; forward creep grazing.

cropland - land where crops are grown for human and/or livestock consumption, primarily as stored feed. May be grazed seasonally or year around in some crop rotations.

daily dry matter intake - amount of dry matter ingested by an animal on a daily basis.

digestible dry matter (DDM) - dry weight of feed consumed minus dry weight of feces, expressed as percentage of feed dry matter consumed.

dry matter (DM) - the substance in a plant remaining after oven drying to a constant weight.

dry matter disappearance (DMD) - forage present at the beginning of a grazing period plus growth during the period, minus forage present at the end of the grazing period.

endophyte free (EF) - a term most often used with tall fescues that have been developed to remove the presence of a fungus referred to as endophytic fungus, i.e., endophyte free fescue.

endophyte friendly - an endophyte that provides agronomic benefits to the plant but without detrimental effects to the grazing animal.

endophytic fungus - a fungus that lives within a plant (most notably tall fescue). *Acremonium coenophialum*. Its presence results in the production of alkaloids which can be toxic to livestock.

endophyte infected (EI) - a term most often used with tall fescues that have the presence of an endophytic fungus, *Acremonium coenophialum*, i.e., endophyte infected fescue.

feed conversion (feed efficiency) - units of feed consumed per unit of body weight gained; the production (meat, milk) per unit of feed consumed.

fescue toxicity (summer slump) - syndrome caused by ingestion of endophyte infected tall fescue, causing a toxic response in the animal. Characterized by poor animal gains, reduced conception rates, intolerance to heat, failure to shed winter hair coat, elevated body temperature, and nervousness.

first - last grazing - utilizing two or more groups of animals, usually with different nutritional requirements, to graze in sequence on the same land area.

forage balance - the difference between forage produced and forage consumed, generally on a monthly basis.

forage inventory - a compilation of the carrying capacity in animal units and animal unit months for all management units within an enterprise or that part of the enterprise being evaluated.

forage moisture content - the percentage of plant weight that is water.

grazing cycle - the time elapsed between the beginning of one grazing period and the beginning of the next grazing period in the same paddock/field where the forage is regularly grazed and rested.

grazing management unit - the grazing land area used to support a group of grazing animals for a grazing season. It may be a single area or it may have a number of subdivisions.

grazing period - the length of time that livestock have access to forages in a specific area at one time; also referred to as residency period.

grazing season - the time period during which grazing can normally be practiced each year.

grazing system - a specialized grazing management that defines systematically recurring periods of grazing and deferment for two or more management units.

harvest efficiency - the percentage of annual production that can be consumed by a targeted animal or animals. Most often figured from the ground up. Primarily used in the west.

hayland - land where the primary use is for the harvesting of forages as hay or haylage.

heifer - a female of the cattle species less than three years of age that has not born a calf.

intensive grazing management - grazing management that attempts to increase production or utilization per unit area or production per animal through a relative increase in stocking rates, forage utilization, labor, resources, or capital. Increase in management. Many synonyms such as controlled grazing, management intensive grazing.

land use class - the classification of land based on the primary use and associated management practices (i.e., rangeland, pastureland, hayland, grazable woodland, grazable cropland).

mob grazing - grazing by a relatively large number of animals at a high stocking density for a short period of time.

neutral detergent fiber (NDF) - that portion of a forage that is insoluble in neutral detergent; synonymous with cell wall constituents. NDF values are negatively correlated with forage voluntary intake by the animal, i.e., the higher the NDF, the less the intake.

nutritive value - relative capacity of a given field to furnish nutrition for animals; may be prefixed by low, moderate, high, etc.

open - a term commonly used to indicate a non-pregnant female animal.

paddock - a grazing area that is a subdivision of a grazing management unit.

parturition - the act of giving birth; calving.

pastureland - land where the primary use is for grazing but requires agronomic and cultural inputs to maintain the vegetation.

plan map - usually an aerial photograph of a land area to which property boundaries, management units, physical farm facilities (water sources, pipelines, ponds, fences) and other information have been added that are pertinent to the planning process.

plant growth curve - the pattern of growth of available forage expressed as monthly percentages.

protein, crude - an estimate of protein content based on a determination of total nitrogen (N) content multiplied by 6.25 because proteins average about 16% N.

prussic acid - a poison produced as a glucoside by several plant species, especially sorghums. Also called hydrocyanic acid.

put and take stocking - the use of variable animal numbers during a grazing period or season in an attempt to maintain desired quantity of forage, degree of defoliation, or grazing pressure.

recovery period - length of time that a specific land area is allowed to recover, primarily for carbohydrate replenishment. Often referred to as rest period.

set stocking - allowing a fixed number of animals on a fixed area of land during the time when grazing is allowed.

stocker - young cattle, post weaning, generally being grown on forage diets to increase size before going to feedlots.

stocking density - relationship between the number of animals and the specific unit of land being grazed at any one point in time.

stocking rate - relationship between the number of animals and the grazing management unit utilized over a specified time period.

stockpiling forage - allowing forage to accumulate for grazing at a later period; usually fall and/or winter. Fescue is particularly well suited to this practice.

supplemental feeding - supplying concentrates or harvested forage to correct deficiencies of the pasture diet. Often incorrectly used to mean emergency feeding.

tetany (grass tetany, hypomagnesemia) - condition of cattle and sheep marked by tetanic staggers, convulsions, coma, and frequently death; characterized by a low level of blood magnesium.

total digestible nutrients (TDN) - sum total of the digestibility of the organic components of plant materials; for example, crude protein + NFE (nitrogen free extract) + crude fiber + fat.

utilization rate - the amount of available forage offered to grazing animals that is actually consumed; figured from a predetermined residual height (not from the ground). Most often used in pasture situations (as opposed to rangeland).

vegetative - non-reproductive plant parts (leaf and stem) in contrast to reproductive plant parts (flower and seed) in developmental stages of plant growth.

vegetative state - stage prior to appearance of fruiting structures or stem elongation in certain grasses.