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Factsheet

FEED TERMS DEFINED

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ACID DETERGENT FIBRE (ADF) – a term now used to identify most of the cell wall or fibre components in plants. It includes cellulose, lignin, lignified nitrogen and insoluble ash.

AMINO ACIDS – nitrogen-containing compounds that constitute the "building blocks" or units from which more complex proteins are formed.

ANIMAL PROTEIN – protein derived from meat-packing or rendering plants, surplus milk or milk products and marine sources. It includes proteins from milk, meat, poultry, eggs, fish, etc.

ANTIOXIDANT – a compound that prevents oxidative rancidity of polyunsaturated fats. Antioxidants are used to prevent rancidity in feeds.

BALANCED RATION – the 24-hour feed allowance which contains the right proportions of all nutrients for the proper nourishment of an animal.

BASAL DIET – feed that forms the bulk of an animal's ration. For most classes of ruminants forage and roughage are the basal diet.

BY-PASS NUTRIENTS – nutrients in ruminant feeds that are not or only partially degrade by rumen flora, and pass through the rumen more or less intact to be digested and absorbed from the small intestines, e.g. brewers grain, broken rice, cassava, fish meal and several legume forages.

CARBOHYDRATES – compounds containing carbon, hydrogen, and oxygen. They are composed largely of starches, sugars, cellulose, hemicelluloses, and lignin. Starch and sugar are readily digested by all livestock.

CELLULOSE – a carbohydrate which is the major part of the cell wall of plants. It is insoluble in water and makes up a part of the crude fibre.

COLOSTRUM – the yellow fluid produced by the mammary gland after delivery of the young and before the flow of milk. It contains nutrients, as well as antibodies to protect the young animal against diseases.

COMPLETE OR COMPOUND FEEDS – processed feedstuffs, made up to provide balanced proportions of protein, energy, minerals and vitamins. These are feeds given as rations to pigs and poultry or as a complement to forage for ruminants, e.g. dairy ration.

CONCENTRATES – a generic term to denote all non-forage feeds containing high amounts of one or more nutrients, e.g. complete or compound feeds, and protein and mineral supplements.

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CREEP FEED – feed given to very young animals, separate from their mothers. Such a feed is usually dry.

CRUDE FIBRE – the relatively insoluble parts of the feeds, specifically lignin and carbohydrates such as cellulose and hemicelluloses. These latter substances can be partly digested by microorganisms in the rumen of cattle, sheep, and goats.

DIGESTION – all changes which feed undergoes within the digestive tract to prepare it for absorption and use in the body.

DIGESTIBLE ENERGY – the part of gross energy of feed that is digested and absorbed. It is measured as gross energy minus faecal energy.

DIGESTIBLE NUTRIENT – the part of each feed nutrient that is absorbed by the animal.

DIGESTIBLE PROTEIN – that portion of the crude protein of a feed which is capable of being digested and absorbed by the animal.

DIGESTIBILITY – the percentage of a feed which is digested and absorbed by the animal.

DRY MATTER – the feed left after all water is removed. To calculate it, subtract the percentage of moisture content of a feed from 100.

EFFICIENCY OF FEED CONVERSION – this is expressed as units of feed per unit of product, meat, milk, or eggs.

ETHER EXTRACT – diethyl ether or petroleum ether extracted material from feeds. It is a measure of the crude fat content and it includes fats, oils, fatty acids, resins, etc.

FEEDSTUFFS – any product, of natural or artificial origin, that has nutritional value in the diet when properly prepared.

FEED LOT – large-scale facility for intensive feeding of ruminants for fattening prior to slaughter.

FLUSHING – the feeding of extra rations to the female animal prior to mating in order to encourage her to produce many eggs.

FULL-FEED – the term indicating that animals are being provided as much feed as they will consume safely without going off feed.

GROSS ENERGY – the total energy in a feed. It is determined by measuring the amount of heat produced when a feed sample is completely oxidized in a bomb calorimeter.

HAULMS – the after-math or field residues from the harvesting of peanuts (groundnuts) and peas.

HAY – a preserved dry feed produced by cutting and curing forage.

HULLS – the residues from the primary processing of seeds. They are mainly the seed coats but may also include parts of the germ and broken seeds.

INGREDIENT – a constituent feed material, e.g corn.

IN VITRO – simulation of the conditions in the live animal in the laboratory.

IN VIVO – in the live animal.

JOULE – a proposed international unit (4, 184 =1 calorie) for expressing mechanical, chemical or electric energy, as well as the concept of heat. It is one of the units for expressing the energy content of feeds.

LIGNIN – a practically indigestible compound which along with cellulose is a major component of the cell wall of certain plant materials, e.g. wood, hay, etc.

MACRO (MAJOR)) MINERALS – the major minerals. Calcium, phosphorous, sodium, chlorine, potassium, magnesium and sulphur.

MEALS – mixtures of concentrate feeds, usually in which all of the ingredients are ground.

METABOLISM – all of the changes which take place in the nutrients atter they are absorbed from the digestive tract.

METABOLIZABLE ENERGY – the gross energy minus faecal energy, minus energy lost in urine, minus energy lost in the combustible gases (methane).

MINERAL MATTER (ash) – the percentage of mineral matter is determined by burning a sample of feed until the ash is free from carbon. The ash remaining consists of the minerals in the feed.

MINERAL SUPPLEMENT – a rich source of one or more of the inorganic elements needed to perform certain essential body functions.

MOISTURE – a term used for the water contained in all air-dried feeds (8 – 15%).

NET ENERGY – the gross energy minus faecal energy, minus energy lost in the urine, minus energy lost in combustible gases minus heat loss.

NEUTRAL DETERGENT FIBRE (NDF) – a term now used to identify the total cell wall or fibre components in plants. It is made up of the constituents of ADF plus hemicellulose. NDF and ADF are preferred to crude fibre in the description of the fibre component of feeds.

NITROGEN-FREE EXTRACTIVES – the fraction of feed which together with crude fibre constitutes the carbohydrate part of the feed. It is determined by subtracting the sum of the percentages of moisture, ash, crude protein, ether extract and crude fibre from 100.

NON-PROTEIN NITROGEN (NPN) – compounds such as urea which contain no protein, but do contain some nitrogen. The bacteria in the rumen of ruminants (cattle, sheep and goats) are able to make protein from this nitrogen in the urea. A readily available source of carbohydrates must also be present in the ration for the above process to take place.

NUTRIENT – any feed constituent or group of feed constituents that will nourish an animal (water, carbohydrates, proteins, fats, vitamins and minerals).

ORGANIC MATTER – the carbon-containing part of the feed which is left after all the water and ash (mineral matter) are removed.

PALATABILITY – the taste appeal and acceptability of feedstuffs by animals.

PALATABILITY FEEDS – Feeds that are well liked and eaten with relish (e.g. molasses, brewers grain).

PROTEIN SUPPLEMENTS – Products that contain more than 20% protein or protein equivalent.

PROXIMATE ANALYSIS – a system of analysis or classification that divides feeds into six fractions - moisture, mineral matter (ash), total crude protein, ether extract (crude fat), crude fibre and nitrogen-free extracts.

RATION – the amount of feed allowed for a given animal during a 24-hour period.

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RUMINANTS – animals which have a compound stomach, the first compartment of which is called the rumen (e.g. cattle, sheep and goat). The rumen contains millions of micro-organisms which can break down part of the crude fibre for digestion.

RUMEN "FILL" – the "fill" in the rumen places a ceiling on feed intake. Since low-quality roughages pass through the rumen at a slower rate than high-quality roughages, they can limit the amount of total feed that the animal can consume in a 24-hour period.

RUMEN FLORA – the micro-organisms of the rumen.

ROUGHAGES – feeds low in energy (or TDN) and high in fibre content (18% crude fibre, e.g. haulms, hay, hulls, silage, stover, straw).

SILAGE – a preserved feed produced by a fermentation process in the absence of air.

STEAMING UP – the feeding of extra rations to the pregnant animal prior to parturition in order to promote rapid growth of the foetus, and to stimulate milk production.

STOVER – the aerial parts of corn, sorghum and millet without the ears, husks or heads.

SUPPLEMENTS – feeds or feed mixtures used to improve the nutritional value of basal feeds. Supplements are usually rich in protein, minerals, vitamins, antibiotics, or a combination of these, and are usually combined with basal feeds to produce a complete feed (e.g. protein supplement - soybean meal).

TRACE (MICRO) MINERALS – mineral elements such as iodine, cobalt and zinc required in the ration of animals only in very small amounts.

TOTAL CRUDE PROTEIN – all the compounds or nutrients in a feed which contain nitrogen.

TOTAL DIGESTIBLE NUTRIENTS (TDN) – a term which indicates the energy value of feedstuffs. It is calculated by adding the percentage of digestible carbohydrate, digestible protein and (digestible fat x 2.25).

VITAMINS – essential organic compounds required by the animal in amounts too small to be considered useful as sources of energy. All vitamins must be present in the ration for normal functioning except for B vitamins in the ruminants (cattle, sheep and goats), and vitamin C.