Livestock Production Terminology

Understanding livestock terminology and measurements of performance are an essential component to be able to measure success.
The document contains a list of different common terms.

Nutrition

Ad Lib: Also known as Free Choice. Sufficient Feed is made available at all times to enable the animal to eat as much as it can eat.

Air Dry Basis: A parameter stating "the nutrient value" of feed ingredients or feed that has naturally dried in the open air until it cannot dry or dissipate any more moisture (usually around 10-12% moisture)

Amino Acids: Building Blocks of Protein.

Animal Protein Product (APP): The protein ingredient made from Meat, Bone meal, Carcasses, Blood, Feathers of any animal and/or Fish that is treated at very high temperatures. Ingredients that our consumers do not wish to see fed to the animals supplying the meat that they eat.

As Fed Basis: Weight of the feed or ingredient ***including*** moisture (water) content.

Balanced Ration: To be balanced a ration must contain the 5 essential elements - Water, Protein, Energy, Vitamins and Minerals in the proper amount and ratios for the specie being fed. A specific formula designed for a specific task - i.e.. Meat Production, Egg Production, Body Maintenance

Complete Feed: A ration that provides ALL the nutrients required. This can be purchased or it can be made up on farm

Daily Feed Intake: See Total Daily Nutrient Intake

Deficient/Deficiencies: Short of certain nutrients

Density: When applied to the rations, describes the amount of nutrients within a measurement unit of the total ration.

Digestible: Easily digested by the animal

Dry Matter: The portion of the feed remaining after removal of the moisture.

Dry Feeds: Complete feeds, Hay and supplements - Feeds that are around 90% Dry Matter

Farm Management: The attention to detail on all aspects of managing the total farm operation.

Feed Formula: The list of ingredients and their inclusion levels making up a ration.

Feed Cost Unit: Using the lowest cost feed possible with production not a relevant factor.

Feeding Rate: The amount in pounds or kilos that a specific feed must be fed per bird per day or per bird per feeding.

Feed Ingredient Group: Ingredients fall into different categories – i.e. Grain, Forage, Protein, Fat, Vitamin or Mineral

Feed Label/Feed Tag: The details of a specific ration that should contain information such as Animal the feed is designed to be fed to, Ration purpose (grower, layer, maintenance), Nutrient Levels, Ingredients, Feeding Rate, Special warnings, Batch Number

Feed Management: The attention to detail on all aspects of feeding an animal

Feed Production Value: The design of a feed formula has an inherent production potential/value. High Production will be a feed formula that uses quality ingredients and high supplemented levels of vitamins, minerals and other additives such as Amino Acids. Medium Production will be a feed formula that uses quality ingredients but medium to low supplemented levels of vitamins and minerals. Low Production will be a feed formula that uses poor quality ingredients, many by products, least cost formulation and low supplemented levels of vitamins and minerals.

Flushing: A system that used to be used in Livestock Nutrition. It is the feeding of a ration to prepare for the next production season for production animals that have been fed a poor ration during their 'off season'. Modern Nutrition Technology provides 'production' livestock with 'replenisher' rations during the 'off season'.

Ground Feed: A ration fed in meal form and not pelleted. It is a courser chop than 'meal feed'.

Inclusion Level: The amount in pounds or kilos that a specific ingredient is included within a ration. This will be measured in pounds, kilograms, parts per million (ppm), International Units (IU) etc. dependent on the specific ingredient referenced.

Indigestible: Not easily digested by the animal.

Ingredients: The components that make up a ration - such as Lucerne, Maize, Soyameal

Inorganic: The source of the nutrient is a "mined from the earth" Mineral or Trace Mineral.

Interrelationships: All nutrients in a ration depend on other nutrients in a ration to be utilised correctly.

IU/International Units: A unit used to measure the activity (that is, the effect) of many vitamins and drugs.

Limit Fed: Rations fed at a specific amount per animal per day.

Major Minerals/Macro Minerals: Minerals such as Calcium and Phosphorous that are included in a ration in relatively large amounts. Usually measured in Grams/day

Meal Feed: A finely ground feed.

Metabolised: The process whereby the food is digested to enable the animal to utilise the nutrients

Minor Minerals/Trace Minerals: Minerals such as Copper and Zinc that are included in a ration in very small amounts. Usually measured in 1/1000 of a gram or fractions of a milligram per head per day.

Nutrition: The study of the materials that nourish an organism and of the manner in which the separate components are used for maintenance, repair, growth, and reproduction.

Nutrients: Items such as Protein, Fat, Fibre, Energy, Minerals, Trace Minerals, and Vitamins.

Organic: The source of a nutrient is Vegetable or Animal Origin

Pelleted: A ration that goes through the process to compact the ration into a pellet.

Performance: The measurement of production achieved. e.g. Eggs/hen; Feed Conversion Ration (FCR), Cost per kilo of Gain

Premix: A very broad term to describe a mixture of more than one component. It may be a number of vitamins. Generally when discussing a complete ration - the premix will include all the Vitamins, Trace Minerals, Amino Acids and other additives such as yeast that are in specific quantities and ratios for that particular ration for the particular specie. Some premixes will include the major minerals as well.

Production Unit: Treating livestock as Production Units when evaluating costs of feed. The producer evaluates the cost of feed by costs per Units of Production. With Ostrich Units of Production are Fertile Eggs, Slaughter Birds, Kilos of Meat, Kilos of Fat and quality of all end products.

Ration: A ration may be fed as a complete ration - or it may be made up of Grazing plus a balancing supplement.

Roughage: A misleading term that is often used to describe the Fibre content of a diet. This is misleading farmers to believe that the fibre portion of the ration's only purpose is to aid digestion, without reference to the digestibility of that fibre source. A quality fibre source will carry valuable nutrients also.

Source: All ingredients contribute a number of nutrients to a ration. An example - Protein sources can be Soyameal, Lucerne, APPs, Grains. It can also be used to describe where an ingredient came from - its origin.

Supplement: This is a fairly broad term and can have a number of different applications:

1. A specific ration designed to be fed to Grazing animals or animals on hay or silage fed separately. This will include the protein, energy (grain), supplemented vitamins, minerals, amino acids to balance with forage portion of the diet

2. A specific ration as above to be added to the Grain and Forage on farm to make up a complete feed

3. Any nutrient fed in addition to the basic ration is also a supplement to the overall rations and will contribute to the overall Total daily Nutrient Intake. Example is vitamin packs that can be added to the water.

Supplementation: Vitamins, Minerals, Amino Acids, Probiotics etc. are fed in addition to those available from the main ingredients when included within a Premix that forms part of the ration.

Total Daily Nutrient Intake: EVERY nutrient that an animal consumes in a day has a contribution towards the total daily nutrient needs of that animal.

Utilisation: The ability of the animal to make use of all the nutrients within the ration

Wet Feeds: Feeds such as Fresh Grass or Lucerne (grazed or fed chopped) and Silage. Ingredients with a high moisture content

Effects of Nutrition/Measurements of Performance

Boneless Meat: The weight of all saleable meat

Carcass Weight: The weight of a bird at slaughter after de-skinning and evisceration. Same as Rail Weight

Feed Conversion Ratio: (FCR) - The amount of feed intake to make 1 kilo or pound of weight gain. Usually referenced to Liveweight

Fertility: Percentage of all eggs set that are Fertile - capable of developing an embryo

Genetic Potential: Every animal has a certain inherited ability to produce eggs, develop muscle etc.

Growth Rate: Rate at which an animal achieves certain weights between two dates.

Hatchability: The percentage of eggs that hatch successfully. This maybe expressed as a percentage of all eggs laid, it may be expressed as a percentage of all Fertile Eggs

Kill Out Percentage: See Liveweight to Kill out Percentage

Leg Weight: The weight of Leg Muscle Assemblies, bone in and including OS1060

Live Weight: Total weight of any live animal at any stage of development

Live Weight to Kill Out Percentage: Meat Produced expressed as a percentage of Liveweight

Malnutrition: Insufficient Nutrition

Nutritional History: The quality of feeding in previous months and years.

Mortality: The percentage of chicks surviving hatch/or adult birds that die.

Survivability: The percentage of all Chicks hatch that develop to slaughter or adulthood

Feed Products

There are many different terms used to describe different feed products manufactured. It is important to understand what is meant by all these terms. The hard part is that terms and names will vary from feed mill to feed mill and country to country. In general, the following descriptions will be true:

Premix or Premixes: Many different products are manufactured under the name of "Premix". The following products are most relevant to the Ostrich Farmer:

- Vitamin and Mineral Premix Without Macro Minerals. Most usually contains vitamins, micro minerals (trace minerals) and amino acids. Salt, yeast, calcium, and phosphorus will be added during the mixing process by the farm or mill.
- Vitamin and Mineral Premix With Macro Minerals. Most usually contains all required vitamins, minerals, micro minerals (trace minerals), salt, yeast, and amino acids. This is a complete vitamin/mineral/additive package that can be mixed with feedstuffs for a complete ration.

Most animal feed companies will purchase either of these two products from specialist feed companies. Some work closely with the Premix development company for ration formulations. Others simply add the products to their own formulations.

Farmers mixing on the farm also use either of the above products. The supplying Premix Company provides the required ration formulations based on the suitable ingredients the farmer has available either grown on the farm, or purchased locally.

Protein Supplements/Concentrates: Feed mills manufacture these products. They will include all the vitamins, minerals and additives and also the protein ingredient of a ration formulation. They are designed for the farmer to add to his own grown grain and forage ingredients. Care needs to be taken when using these supplements that particle sizes of the individual ingredients in the complete ration match. For example: If a farm is adding Lucerne (alfalfa) pellets, the supplement

must be pelleted and the maize (corn) fed whole. If a farm is feeding chopped Lucerne (alfalfa), the supplement should be ground with the maize (corn) also ground. This helps prevent birds selectively choosing different ingredients and eating too much of one particular ingredient.

Grazing and Forage Supplements or Concentrates: Also manufactured by feed mills and will include vitamins, minerals, and additives. They will also include the protein ingredients and sufficient grain ingredients to match the forage source used on the farm. Take great care that such supplements are designed to be fed with the forage available on the farm. Example: Do not use a supplement designed to be fed with Grass when using Lucerne (alfalfa). Do not use a supplement designed to be fed with Lucerne (alfalfa) when feeding Grass.

Farmers may also mix their own Grazing & Forage Supplement or Concentrate using a purchased vitamin and mineral Premix.

Note: The authors do not recommend this method of feeding Ostriches if optimum performance is to be achieved.

Complete Feeds: These products supply ALL the nutrients required to provide a complete balanced ration to the birds. These complete feeds can be pelleted feeds or meal (ground) feeds. Under no circumstances should anything further be fed to the birds when using complete feed products.

Mineral Licks: A mineral lick is a mineral product that provides "free choice" mineral supplementation to grazing animals.

The Authors do no recommend the use of mineral lick product as they DO NOT fit into our policy of providing cost effective balanced rations with high performance for Ostrich. They do not form part of 'production' nutrition. It is the authors' opinion that Ostriches should never have "free-choice" of any mineral product as imbalances in the diet will result.

Miscellaneous

Capital Costs – Items of a Capital Nature. One off payments for items that last a number of years. Examples: Land, Buildings, Vehicles.

Debone – Removal of muscles from the Bone only as far as whole muscle assemblies . See Muscle Out

Evisceration – Removal of Heart, Lungs, Intestines, Kidney, Gizzard – all internal organs, fat and offal.

Fixed Costs – Any cost of operating a business that has to be paid regardless of level of production. Examples: Rent, Salaries, Telephone, Capital Depreciation

Incubation – The process eggs go through to turn from egg to chick. With Ostrich this process takes 42 Days. An Incubator is used to Incubate eggs

HACCP – Hazard Analysis and Critical Control Points - A system of analysing and putting into place systems in the production line to minimise risks of bacterial infection and cross contamination of food products.

Hatching - The process of chick exiting the egg. Eggs can be hatched in the Incubator if they can be prevented from turning. Usually eggs are moved to a Hatcher for the hatching process.

Multi-Specie – More than one Specie. Example: A slaughter plant that slaughters pigs, sheep and cattle.

Muscle Out - Separating the muscles from the muscle assemblies. The muscles will be demembraned and ready for further processing, portion control or simply packing as whole muscles ready for wholesale market.

Setting – See Incubation - an Incubator can be called a Setter.

Variable Costs – The costs of operating a business relevant to actual Production. They will therefore vary according to the level of production. Also called Production Costs. Examples: Feed, Wages, Heat, Water

Skins

Crown – The diamond area or main body area with the follicle cover.

Follicles – The bumps made by the feathers on the skin

Hair Follicles - A hair follicle is caused by the occurrence of hair routes and is natural.

Pin Holes – Small holes in the skin left by hair follicles

Quill – The lower end of the feather. The part of the feather that attaches to the skin