

The most common ingredient use in poultry diet

Generally the raw of feed material use for producing energy like seeds, fats and oils, or for producing protein like plant meals, animal protein sources and yeast In addition to the minerals and vitamins.

Raw material types:

1. Seed and seed products: Corn, barley, wheat and wheat bran.
2. Plant Sources of protein: Soybean meal, cottonseed meal, Sunflower meal, flaxseed meal and black seed meal.
3. Animal Sources of protein: Fish meal, meat meal and blood powder
4. Secondary products for slaughter house: Powder of blood, guts, feathers, heads and legs

Seed and seed products

Corn:

Corn is the main Components in the poultry diets, the ratio of corn in the poultry diet reach to 75%, it contain 7-9 % crud protein , 3350 kcal metabolic energy, 3.1% Fat, and 2% fibers. Also contain beta carotene that it will change to vitamin A in the Birds body.

Barley:

The using of barley in poultry diet is limited because of contain some complex sugar they are difficult for digestion like β -glucan. The ratio of protein in the barley 9-12%, the fiber is 6%. It contains low amount of essential amino acid, especially Lysine that it has an effect on growth. The ratio of barley in poultry diets must be no more than 25% with adding some enzyme's like (β -glucanase) for analyze β -glucan also adding necessary amino acids.

Wheat:

The ratio of protein in wheat is between 11-14%, and fiber is between 3-4%. Generally it use like human foods but broken wheat has been used in poultry feed and it can be replacing with corn and it can use by 25% of poultry feed but if it is used by more than this ratio should add some enzymes such as Xylanase enzyme. This enzyme increases the digestibility of wheat.

Wheat bran:

Wheat bran content 12.5-15% of Crude protein and 8-12% fiber. Metabolic energy is relatively low it is (1300 kcal) and we can add it to the diets for the adult birds by the ratio of 10% but for ducks and geese 25%.

Plant Sources for protein

The Plant Sources are rich source of protein it Constitute by 60 - 70% of the total protein in poultry feed. There are many factors that have an effect on the nutritional value of plant sources for proteins that are Include:

- 1-Anti-nutritive factors content like gossypol in cotton seed meal that reduce growth.
- 2- Availability of essential amino acids.
- 3- Effect of manufacturing processes.

The most of important plant protein

Soybean meal:

It is most important plants protein that used in poultry feeds because it's contain most of amino acids that poultry need and by the balanced proportions. Crude protein contain in soybean meal is amount 44-48%, metabolic energy 2250-2400 Kcal/kg and fiber 4-7%. Soybean meal can be use as a single protein sources in poultry feeds. Using Soybean seed in

poultry feed is not recommended because it has some factors that reduce the birds growth like inhibitor trypsin that destroy trypsin enzyme and reduce the digestibility of another amino acids such as methionine and cysteine. Full fat Soy bean seed content 35% crude protein and 16-21% of the fat.

Cotton seed meal:

The use of cotton seed meal in poultry diets must be no more than 5% because it contain a gossypol (0.2-0.3%) and its toxic to monogastric animals. chicks growth is affected if the free gossypol ratio increased from 0.4-0.6% and egg production is affected if the rate increased from 0.3% in the feed. in addition to the deficiency in some essential amino acids like lysine, methionine and threonine. When gives layer at more than 5 % level in the diet has bad effect on the quality of eggs. Cotton seed meal can be used in poultry diets as a protein source because it have 42% crude protein with condition doesn't use more than 5% and covering missing amino acids

Sunflower meal:

A low content of lysine and tryptophan protein ratio amount 25-40% with fiber ratio 10-25%. Recent studies showed that it can be added by up to 20% of the diets, and can be replacing it with soybean meal partly or completely without any negative impact on poultry performance.

Sources of animal protein

Although, there is preference to use all his animal origin in poultry diets. Because it is not a natural food, but breeders use it because it has high protein content and it increases the nutritional value of the diet and the body weight of the birds . Now the prevailing in the world is 100% vegetarian diets in poultry feed in order to preserve human health. Animal protein used by a few to supplement the shortage of essential amino acids in the vegetable protein

concentrates, as well as contributing to the amount of minerals and vitamins such as vitamin B-Complex group. As well as used in limited quantities due to higher prices.

Fish meal:

It is the product of manufacturing, drying and grinding whole fish or parts of different types with appropriate temperatures so do not affect the nutritional value. Fish powders crude protein amount 55-85% and fat ratio 5 - 10%. It also advises not to add it in the late period of fattening diets or in egg production due to transfer the smell of fish to carcass and eggs.

Meats powder:

It is the product of drying and milling of the carcass of animals or parts of the carcass except for hooves, horns, hair and internal parts. Meats powder without bones contain 60-65% crude protein, while meat and bone meal containing 45-60% crude protein and uses in poultry diets in the range 4 to 10%. Meat and bone powder, is a good source of calcium, phosphorus, riboflavin, choline and vitamin B12, also it's a good source of lysine and poor in methionine and tryptophan, The percentage of fat in the meat powders ranging from 5% to 20%, due to the emergence of some diseases that may transfer from animal to humans such as salmonella and others, it is advisable to limit its use in animal and poultry diets.

Blood powders

Manufactured by passage of steam through the blood until the temperature reaches 100 °C in order to ensure the sterilization process was completed and then dried and milled. Blood powders contain 80% crude protein and contain of high level of lysine and low of isoleucine, glycine and methionine. It's used in poultry diets amount 2-3%. Blood powders also susceptible to contamination by salmonella and other pathological causes, therefore advised not to use it.