

## Poultry Nutrition

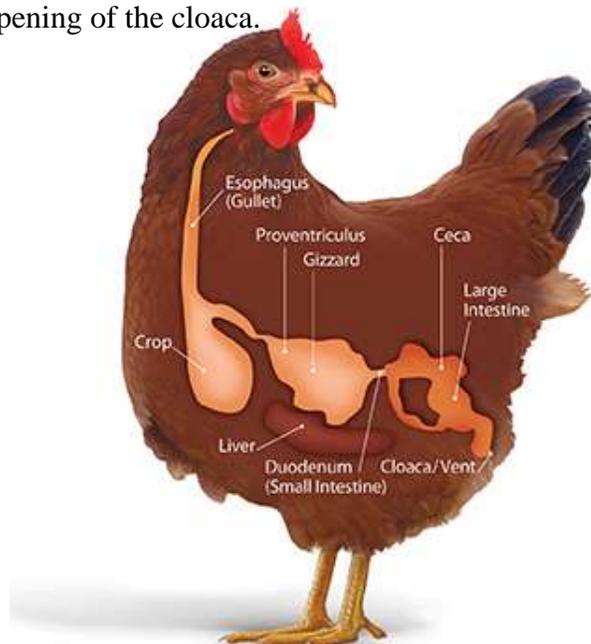
Poultry diets are made up of a mixture of several different feedstuffs including cereal grains, soybean meal, animal by-product meals, fats, and vitamins and mineral premixes. Together with fresh water, these elements provide the energy and nutrients essential for the bird's growth, reproduction, and health.



Baileys Chicken Roxie  
(Breed: Barred Rock)

To understand poultry nutrition, first we need to understand their unique digestive system. First, food is taken in with the beak which is a perfect tool for pecking feed in crumble or pellet form, small grains, grass or insects. Chickens are omnivores, which means that, in addition to a commercial feed, they can eat meat (grubs, worms, the occasional mouse) and vegetation (grass, weeds, and other plants). A small bit of saliva and digestive enzymes are added as the food moves from the mouth to the esophagus. From the esophagus food moves to the crop, an expandable storage compartment located at the base of the chicken's neck, where it can remain up to 12 hours. The food trickles from the crop into the bird's stomach (proventricular or gizzard) where digestive enzymes are added to the mix and physical grinding occurs. Since chickens do not have teeth, the gizzard is essentially how they chew their food. It is a muscular part of the stomach and uses grit (small,

hard particles of pebbles or sand) to grind grains and fiber into smaller, more digestible particles. From the gizzard, food passes into the small intestines, where nutrients are absorbed. The residue then passes through the ceca, a blind sac along the lower intestinal tract, where bacteria help break down undigested food. From the ceca, food moves to the large intestines, which absorbs water and dries out indigestible foods. The remaining residue passes through the cloaca where the chicken's urine (the white in chicken droppings) mixes with the waste. Both exit the chicken at the vent, the external opening of the cloaca.



Now we know how the chicken's body digests, we need to talk about what they require nutritionally. First off cool, clean water needs to be accessible to them at all times. The next requirement is carbohydrates as they are important sources of energy for poultry. Carbohydrates are found in corn, wheat, and other cereal grains. Proteins and amino acids are another nutrient requirement needed in poultry's diet. The dietary requirements for protein are actually requirements for the amino acids found in dietary proteins. Poultry use these amino acids to fulfil a number of functions, including using them to make

up the bulk of their structural and protective tissues such as skin, feathers, bones and ligaments. Amino acids also help form the soft tissue including the organs and muscles, as well as playing an important role in metabolization of feed into energy. Fat is another nutrient requirement for poultry. Fat is usually added to feed for meat birds to increase energy concentration, and thereby improve productivity and feed efficiency. Corn is particularly the best fat source because its fatty acids are mostly unsaturated, and it usually constitutes a large portion of existing poultry feed. Minerals are the next nutritional requirement as they are required for various functions within the bird. Calcium and phosphorus are vital in the formation of the skeletal, and sodium, potassium, magnesium and chloride function to stabilize the pH levels throughout the body. Calcium is used for bone formation, whereas the bulk of calcium rations in laying hens is usually used to form the eggshell. If a hen does not receive sufficient calcium in the diet for eggshell production, it may use reserves of calcium from its skeleton, but this resource will be rapidly depleted and the hen will stop laying. Oyster shells or ground limestone are a good source of calcium to add to the diet.



**Baileys Chicken Olive**  
 (Breed: Ameraucana)

Lastly, vitamins are required for poultry nutrition. Layers need to be well supplied with vitamin A precursors known as carotenoids gives the golden yellow yolk that consumers demand from their eggs. Vitamin C isn't usually required as an additional dietary supplement for poultry, as its already synthesized by them. However, it has been suggested that poultry under stress respond well to its addition in the diet. Including all of the nutritional requirements in a balanced diet will result in healthy high producing poultry.

## Product of the week

### "O" Poultry Premix

"O" Poultry Premix is a complete mineral and vitamin package designed to meet the specific nutritional needs of poultry.



**Bailey's Farm Fresh Eggs**

It contains sulfate forms of trace minerals. It also meets daily vitamin needs, including vitamins A, D3, E and B complex. Suppling most major mineral nutrients - calcium, phosphorus, sodium and chloride - its a perfect premix to meet poultry's nutritional requirements.