

# Choosing the right feed for your chickens

By Marinda Louw-Coetzee | 14 June 2022 | 2:16 pm

*The best-quality meat demands the best-quality feed, according to Dr Elsje Pieterse, senior lecturer in the Department of Animal Science at Stellenbosch University, and Brett Roosendaal, head nutritionist at Epol. They spoke to Marinda Louw-Coetzee about feeding requirements for producing chicken products.*



Chickens require highly digestible, well-balanced feed with the correct balance of vitamins, minerals, energy and amino acids, says Dr Elsje Pieterse of Stellenbosch University.

*Photo: FW Archive*

## How does a chicken's physiology and social nature influence the choice of feed?

**Dr Elsje Pieterse (EP):** The chicken is a single-stomached animal, so high-fibre diets are not digested and can reduce performance. It's not a grazer, and although it will feed on young growth on grazing, this cannot be the primary source of nutrients. A

chicken requires highly digestible, well-balanced feed with the correct balance of vitamins, minerals, energy and amino acids (proteins).

**Brett Roosendaal (BR):** Poultry are sensitive to temperature, light, access to water and feed, type of housing, and conditions that may cause stress, such as stocking density. The cornerstone of chicken nutrition is attaining high voluntary feed intake of a diet that provides the prerequisite quantities of nutrients and energy daily.

## **Which diseases and conditions are chickens sensitive to, and how can diet improve this?**

**EP:** A well-fed chicken kept in a proper environment will have a healthy immune system and will not get sick as easily as a malnourished, poorly managed bird. Chickens can get respiratory infections, digestive upsets, and inflammation and infections associated with injuries.

**BR:** Diet is fundamental to the majority of these diseases, either through the addition of functional ingredients to target specific disease status, or basic construction of the diet formulation that mitigates many of the disease conditions encountered.

## **Many diseases lead to a reduction in feed intake, which results in underperformance. Diagnosing a health problem accurately, together with good nutrition, is imperative for sustainable poultry production. Are growth hormones or antibiotics added to chicken feed?**

**EP:** Growth hormones are not necessary, as chickens have the genetics to grow extremely fast, and a farmer needs to manage the environment and feed to optimise this. Alternatives to antibiotics are being researched and implemented. It should be kept in mind that the antibiotics used in animal feeds are not similar to the ones used for humans, and that the industry is very sensitive to the possibility of resistant bacteria. Antibiotics may only be prescribed by a qualified veterinarian.

**BR:** Growth hormones have never been used in poultry in South Africa. The development of prebiotics, probiotics, phytogenics (natural growth promoters) and the increased use of organic acids in poultry feed over the past 10 to 15 years has

offered nutritionists alternatives to improve gut health without the use of subtherapeutic antibiotics.

### **Does the addition of certain ingredients reduce the necessity for certain medications or growth enhancers?**

**EP:** A well-fed chicken has a better immune system to withstand disease pressure. However, the addition of some antioxidants, vitamins, micro- minerals and organic compounds could add value.

### **How important is clean water in a chicken's diet?**

**EP:** Clean and cool water is essential. A bird needs to consume around two litres of water for every one kilogram of feed. If the water is hot, polluted or insufficient, the birds will not drink and will therefore not feed. Insufficient water can cause crop compaction, dehydration and death. Contaminated water is also a source of pathogens that can lead to the spread of diseases.

**BR:** High water intake under heat stress conditions can lead to wet litter and should be managed accordingly. Diet composition and the use of functional raw ingredients can mitigate these conditions.

### **What is the best way to feed chickens?**

**EP:** Chickens should have free access to clean food and water. The best feeder is one where they cannot get into the feeder, scratch the feed out or defecate in it. The feed should be replenished whenever it runs out, and drinkers should be cleaned and filled at least twice a day and whenever they are dirty.

**BR:** Feeding practices of broilers (meat) and laying stock (eggs) are different. Broilers are fed continuously, while laying stock receive a set amount, usually early in the morning. Broilers are usually fed in pans that are height-adjusted depending on their age, whereas laying stock are fed in tracks with chain conveyors. The feed form for broilers is crumbles or pellets, while layers receive a mash diet.

### **Should small farmers buy ready-made chicken feed or can they mix their own feed?**

**EP:** Ready-made chicken feed is perfectly balanced, and although the small-scale farmer will be able to access the main ingredients, raw material prices fluctuate, so home mixes can easily end up being more expensive than, and inferior to, commercially made feed.

**BR:** For producers of broiler chickens, it's advisable to buy commercially manufactured crumbles and pellets. You achieve higher feed intakes and faster growth, making this type of feeding economically viable. For laying hens, some feed factories produce concentrates or macro packs of ingredients, where a farmer only needs to add maize.

**Please tell us more about raw materials to be included in chicken feed.**

**EP:** Chickens need energy and protein as well as vitamins and minerals. The proteins should have a certain amino acid composition, and the feed should be highly digestible and not contain any anti-nutrients or toxins.

**BR:** Poultry feed comprises cereal grains, cereal by-products, proteinaceous raw materials, oil, vitamins, macro and micro trace elements, and medication. The ratios of these ingredients differ from one type of feed to another.

**Are there any ingredients which should never be included?**

**EP:** Mouldy, wet ingredients contaminated with herbicides and pesticides, urine or faecal matter should never be used. Raw soya bean meal and cottonseed meal contain toxins, while raw meat or food scraps can be a source of microbial pathogens.

**BR:** Quality control of raw ingredients is essential to prevent contaminants such as mycotoxins, heavy metals, pesticides, dioxins or biogenic amines. Under the Fertilizers, Farm Feeds, Seeds and Remedies Act No. 36 of 1947, raw ingredients should be registered through the Department of Agriculture, Land Reform and Rural Development.

**When buying ready-made food, should anything else be added to a chicken's diet?**

**EP:** Ready-made feed is properly balanced, so it should be used as is. It should never be diluted.

**BR:** Commercially manufactured feed is well balanced and complete, and shouldn't require any additional raw ingredients or additives. Most feed companies will add additional products to their rations if requested by a farmer.

**Is there pressure from consumers to supply more 'green' or health-conscious feeding formulations?**

BR: Most definitely. Consumers are requesting alternatives to subtherapeutic antibiotics as well as anticoccidials. There are also requests for prebiotics and probiotics, as well as essential oils in combination with organic acids.

**Is there a difference in the feed formulation of so-called 'free-range' chickens?**

**BR:** Normally, anticoccidial and subtherapeutic antibiotics are replaced with more 'green' feed additives. In some cases, the free-range producers have lower stocking densities and may feed for a longer period before processing.

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