

MAKING YOUR OWN FEEDS

With the rising cost of poultry feeds, farmers rearing chickens are increasingly finding it difficult to make profit from poultry keeping. While it is difficult for farmers to formulate feeds for hybrid chickens such as broilers and layers, they can do so for their indigenous chickens or dual-purpose breeds such as the improved kienyeji chicken, Kuroiler chicken, Kenbro chicken etc under intensive management system. However, this is only possible if farmers have the right quality of ingredients or raw material for formulating feeds.

There are various formulas out there but almost all of them makes use of Digestible Crude Protein (DCP) as the basic nutritional requirement for feed. The most common ingredients used are whole maize, maize germ, cotton seed cake, soya beans, sunflower or omena (fishmeal). Assuming that the farmer wants to make feed for their chickens using the Pearson Square method, they have to know the crude protein content of each of the ingredients used in feed making. The farmer may use whole maize (8.23 % DCP) Soya (45 % DCP) Omena (55 % DCP) and maize bran (7 % DCP) Sunflower (35 % DCP).

To make a 70 kg bag of feed for **LAYERS**, a farmer would require the following ingredients:

34 kg of whole maize

12 kg of Soya

8 kg of omena

10 kg of maize bran

6 kg of Lime (as a calcium source)

Each category of chickens has its own requirements in terms of nutrition. For example, feed for layers should have at least 18 per cent crude protein. If one were to formulate feed for layers, then they would have to calculate the percentage of digestible crude protein in each of the ingredients to ensure that the total crude protein content is at least 18 per cent to meet this nutritional requirement.

To find out if the feed meets this standard, a farmer can do a simple calculation as follows:

Whole maize = $34 \text{ kg} \times 8.23 \div 100 = 2.80\text{kg}$

Soya bean = $12 \text{ kg} \times 45 \div 100 = 5.40 \text{ kg}$

$$\text{Omena} = 8 \text{ kg} \times 55 \div 100 = 4.40 \text{ kg}$$

$$\text{Maize bran} = 10 \text{ kg} \times 7 \div 100 = 0.70 \text{ kg}$$

$$\text{Lime} = 6 \text{ kg} \times 0 \div 100 = 0.00 \text{ kg} (\text{Total crude protein } 13.30 \text{ kg})$$

To get the total crude protein content of all these ingredients in a 70 kg bag, you take the total crude protein content of the combined ingredients, divide by 70 and multiply by 100 thus, $(13.30 \div 70) \times 100 = 19.0\%$. This shows that the crude protein percentage in the above feed formulation is 19.0 % which is suitable for layers.

Before mixing the feed, whole maize including the other ingredients has to be broken into the right sizes through crushing or milling to make it palatable for the chickens. Add 250 g of table salt on every 70 kg bag of feed.

Feed for chickens meant for meat

Chickens meant for meat production require feed with a higher content of DCP. From the first to the fourth week, the chicks require feed with a DCP content of between 22 to 24 per cent. From the fourth to the eighth week, the chicks require feed with a protein content of 21 to 22 per cent crude protein. To attain this requirement, farmers can formulate feed using the same method given above.

To make a 70 kg bags of feed, they will need to have all the right the ingredients in the proportions given below:

$$\text{Whole maize} = 40 \text{ kg} \times 8.23 \div 100 = 3.20\text{kg}$$

$$\text{Omena} = 12 \text{ kg} \times 55 \div 100 = 6.60 \text{ kg}$$

$$\text{Soya beans} = 14 \text{ kg} \times 45 \div 100 = 6.30 \text{ kg}$$

$$\text{Lime} = 4 \text{ kg} \times 0 \div 100 = 0.00 \text{ kg} (\text{Total crude protein } 16.10 \text{ kg})$$

To determine if a 70 kg bag of feed has adequate crude protein content for birds meant for meat production, the same methods is used: $(16.10 \div 70) \times 100 = 23\%$. The feed given in this example has a total crude protein content of 23 % which is adequate to feed chicken in this category.

In every 70 kg bag of feed, add 250g of table salt.

Feed for Improved kienyeji chickens

Indigenous chickens are less productive in terms of egg and meat increase. They may not require intensive feeding and management. For this category of chickens, farmers can constitute feeds with a DCP of between 15 - 16 %.

They can use the following formulation to make feeds for the indigenous chickens:

Whole maize = $34 \text{ kg} \times 8.23 \div 100 = 2.80 \text{ kg}$

Soya bean = $12 \text{ kg} \times 45 \div 100 = 5.40 \text{ kg}$

Omena = $8 \text{ kg} \times 55 \div 100 = 4.40 \text{ kg}$

Maize bran = $10 \text{ kg} \times 7 \div 100 = 0.70 \text{ kg}$

Lime = $6 \text{ kg} \times 0 \div 100 = 0.00 \text{ kg}$

(Total crude protein 13.30 kg) Percentage of total crude Protein in the ingredients = $(10.68 \div 70) \times 100 = 15.25 \%$

For farmers rearing hybrid layers and broilers, it is advisable to buy already constituted feeds from reputable companies that sell quality feed. The main reason is that it is very difficult for farmers to constitute micronutrients such as amino-acids, trace minerals, fat and water soluble vitamins that these breeds of chicken require for proper growth.

Some tips on how to feed chicken

An egg-laying chicken requires 130 g of feed per day (provide clean water at all times).

- 1 chick requires 2.2 kg of feed for 8 weeks (thus 100 chicks = $2.2 \text{ kg} \times 100 = 220 \text{ kg}$. Chicks should be allowed to feed continuously and given adequate clean water at all times). If they finish their daily rations, give them fruit and vegetables cuttings to feed on.

- 1 pullet (young chicken about to start laying) should be fed 4.5 kg of feed for two and a half months until the first egg is seen. It should then be put on layer diet. Supplement with vegetables, edible plant leaves or fruits peelings in addition to the daily feed rations.
- All ingredients used must be of high quality and palatable. Never use rotten maize (Maozo). Chickens are very susceptible to aflatoxins poisoning.
- When using omena as an ingredient, ensure it is free of sand and seashells. If you use maize germ, it should be completely dry.
- Feed should be thoroughly mixed to ensure the ingredients are uniformly distributed. It is preferable to use a drum mixer instead of a spade for mixing.
- Note that even after giving them the formulated feeds, chickens should be put on free range to scavenge for other micronutrients not provided for in the feeds.