
EXPERIMENT 1 IDENTIFICATION OF FEED INGREDIENTS FOR POULTRY FEEDING

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1.1 INTRODUCTION

Poultry needs a complete diet or feed or ration, which is primarily a mixture of several feed ingredients such as cereal grains, vegetable proteins, animal by-product meals, fats, mineral and vitamin premixes. In order to achieve a cost-effective diet, there is a continuing need to have knowledge on the availability of feed ingredients in the market in order to reduce feeding cost and wastage of nutrients, to update the dose-response of nutrients in relation to genetic improvements, to utilize a vast feed-inventory and to ensure efficient utilization of nutrients through feed processing, use of additives and maintaining the quality of raw materials and compounded feed.

Objectives

After performing this experiment, you will be able to:

- identify different feed ingredients which are available in the market; and
- explain their source, cost and availability.

1.2 EXPERIMENT

1.2.1 Principle

Feed represent about 65-75% of the cost of poultry production. An efficient economic diet is always a balanced one with all nutrients at lower cost. The knowledge on different feedstuffs will help you to identify them for their proper inclusion in the complete feed. Cost can be reduced by preparing the feed at your own farm by following principles of poultry feed preparation. Market survey for availability of feed ingredients along with their cost can help you in deciding ingredients to be used for least-cost balanced ration formulation on your own.

1.2.2 Requirements

- Feed ingredients

- Plastic tray
- Spoon
- Marker

1.2.3 Procedure

- 1) Visit a nearby poultry feed market or feed mixing plant and note down the availability and cost of the different feed ingredients.
- 2) Using the spoon, collect 30 to 50 g of each feed ingredient and place it in the plastic tray.
- 3) Identify the ingredients based on their physical characteristics and name them by using marker.
- 4) Observe and record the information given at 1.2.4 for each ingredient.
- 5) Note down the name of the feed ingredient identified.
- 6) Give common/alternate/local name, if any.
- 7) Group them into source of their origin.

Note: For your easy reference some common feedstuffs are detailed below:

- (i) **Energy Feedstuffs** - Bajra, Jowar, Barley, Maize, Wheat Bran, Rice Polish (Fig. 1.1 to 1.6)



Fig. 1.1: Bajra



Fig. 1.2: Jowar



Fig 1.3: Barley



Fig. 1.4: Maize



Fig. 1.5: Wheat Bran



Fig. 1.6: Rice Polish

- (ii) **Animal Proteins** - Fish meal, Meat meal and Blood meal (Fig 1.7 to 1.9)



Fig. 1.7: Fish Meal



Fig. 1.8: Meat Meal



Fig 1.9: Blood meal

(iii) **Vegetable Proteins** – Mustard or Rapeseed meal, Soybean meal, Cottonseed meal and Groundnut cake (Fig 1.10 to 1.13)



Fig. 1.10: Rapeseed meal



Fig. 1.11: Soybean meal



Fig. 1.12: Cottonseed meal



Fig. 1.13: Groundnut Cake

1.2.4 Observations

Observe and record the information of each feed ingredient about its:

- i) availability
- ii) cost
- iii) source

Number of feed ingredients collected	A
Number of energy feedstuffs identified	B
Number of animal proteins identified	C
Number of vegetable proteins identified	D

1.2.5 Calculations

$$\begin{aligned}\text{Energy Feedstuff Identification \%} &= \frac{\text{Number of energy feedstuffs identified}}{\text{Number of total feed ingredients collected}} \times 100 \\ &= \frac{B}{A} \times 100\end{aligned}$$

$$\begin{aligned}\text{Animal Proteins Identification \%} &= \frac{\text{Number of animal proteins identified}}{\text{Number of total feed ingredients collected}} \times 100 \\ &= \frac{C}{A} \times 100\end{aligned}$$

$$\begin{aligned}\text{Vegetable Proteins Identification \%} &= \frac{\text{Number of vegetable proteins identified}}{\text{Number of total feed ingredients collected}} \times 100 \\ &= \frac{D}{A} \times 100\end{aligned}$$

1.2.6 Results

- i) Feed ingredients identified by you:

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- ii) Identification percentage on given ingredients:

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1.3 PRECAUTIONS

- Before going for any practical, prepare well on the theoretical part.
- Visit as many shops as possible in the market and note down the feed ingredients and their cost.
- Collect the required quantity of individual ingredient.
- Try to avoid area-wise fluctuation in the quality of ingredient.
- Collect the ingredients from your nearby market or farm/feed mill.