

Ministry of Higher Education and Scientific Research
University of Salahuddin
Faculty of Agriculture
Department of Animal Resources
Fourth Stage

Course Book

Practical Part of Poultry nutrition
First semester

2022 -2023

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Course overview

The poultry industry have a very important place in the food industry, because it is provide a rich source of protein like egg and white meat as a staple food and cheap to humans. The basis of the production process in the production of poultry is nutrition, because more than 60% of the expenses of the production process go to provide feeds for poultry flocks therefore reduce this expense by using the modern scientific preparation methods of these diets lead to reduced expenses nutrition events without any nutritional problems

Course objectives

- The goals of the practical Section of Poultry Nutrition is to give students accurate information about ingredients or raw materials used in the composition of poultry diets and their content of nutrients, as well as harmful contents in these raw materials and the acceptable ratios in the feed.
- as well as provide the student information to make it able to calculate the needs of the birds (broiler chickens and laying hens) from energy, protein and other important nutrients
- Provide students the skills for using the computer to prepare balanced diets with optimum prices

The References

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The course book for Poultry Nutrition (Practical Part)

First Semester 2015-2016

First week

Birds Digestive System

Second week

The most important feed materials commonly used in poultry feed

- (1) Cereals and its products: corn, barley, wheat, wheat bran
- (2) Sources of vegetable protein: soybean meal, cottonseed meal, sunflower seed meal, flaxseed meal.
- (3) Sources of animal protein: fish meal, meat meal, blood meal
- (4) Secondary products: The residues of Poultry Slaughterhouses - powder of feathers - dairy products

Third week

Calculate the daily requirement of protein for chicken

A - Calculate the daily requirement of protein for Broiler

B - Calculate the daily requirement of protein for laying hens

Fourth week

Calculate the daily requirement of Amino acids for chickens

Fifth week

Training on the Calculating of the daily requirement of protein and amino acids

Sixth week

How to calculate the energy needs of the bird

Seventh week

Training on the Calculating of the daily needs of energy

Eighth week

Calculation of economic value of ingredients

Calculate the economic feasibility of feed materials used in the composition of the diet according to their content of protein and energy.

Ninth Week

Mangers and types of Water cups used in the poultry house.

The method of calculating the needs of the flock from Mangers and types of Water cups.

Tenth week

Feed formulations and the properties of diets

Eleventh Week

Using the Substitution and Replacement Method to prepare feed formulations

Twelfth Week

Training on the Substitution and Replacement Method to prepare feed formulations

Thirteenth week

Using MICROSOFT EXCEL program for prepare poultry diets

Fourteenth week

Training on the MICROSOFT EXCEL program for prepare poultry diets

Fifteenth week

Scientific trip to one of the commercial poultry feed mill

The Examination Time and Form

The first exam for student at the end of the seventh week and the second exam at the end of the fifteenth week are to use a computer in the exams or the answer on the paper.

Example:

Q1 / The weight of 43 week-old chicken was 1640 g , the rate of egg weight was 60 g , the daily weight increases 3 g , egg production rate 80% and the daily temperatures 27 C°. How much is the energy required to bird per day

$$\begin{aligned} \text{A1/ Total k.cal /g/day} &= W (170-2.2T) +2E+5\Delta W \\ &= 1.640(170-2.2 \times 27) +2 \times (80 \times 60/100) +5 \times 3 \\ &= 292.384 \text{ k.cal} \end{aligned}$$

Q1/ Explain briefly types of changes that occur to the material during the process of food digestion in the gut of poultry

A1/

- ❖ physical changes of feed, such as swallowing and swallowing crushing, grinding, which is in the gizzard
- ❖ chemical changes, which include the enzymes excretion along to the gastrointestinal tract, pancreas and liver, as well as hydrochloric acid HCl with the activity of the bacteria and so with the conversion of dietary compounds complex installation to simple materials easy absorption, turning carbohydrates into mono sugars such as glucose and decompose fat to fatty acids and turn proteins to amino acids

Q1/ Prepare the starter feed formulation for broiler chickens using the Microsoft Excel program according to the following properties: 22% protein, energy 3100 kcal/kg. 0.59% methionine, Lysine 1.42%, Calcium 1.2%, Phosphorus 0.6% and Fiber 4% .

A1/ Prepared on the computer