CHAPTER- 11

Visit to animal nutrition laboratory and feed mill

Objectives

1. To observe the animal nutrition lab., its equipments and appliances, common chemicals used.
2. To observe and operate the feed mill and prepare compound feeds for animals.

Introduction

A typical animal nutrition laboratory have the following instruments and appliances

1. Hot air oven- For estimation of moisture of feeds and fodders.
2. Kjeldahl digestion and distillation apparatus- For estimation of nitrogen.
3. Muffle furnace- for estimation of organic matter and total ash.
4. Soxhlet apparatus- For estimation of crude fat/ ether extract.
5. Hot plate- for heating and churning before ashing.
6. Electronic balance- for accurate weighing of minute quantity of samples.
7. Suction pump- For fibre estimation.
8. Digital pH meter
9. Spectrophotometer
10. Gas liquid chromatography
11. High performance liquid chromatography
12. Atomic absorption spectrophotometer
13. Lab centrifuge and ultra centrifuge
14. Bomb calorimeter
15. Microscope

A typical animal nutrition laboratory have the following glassware and plasticwares

1. Burettes- 10,25 and 50 ml
2. Pipettes- graduated-1,2,5,25 ml and bulb-1,5,25,50 ml.

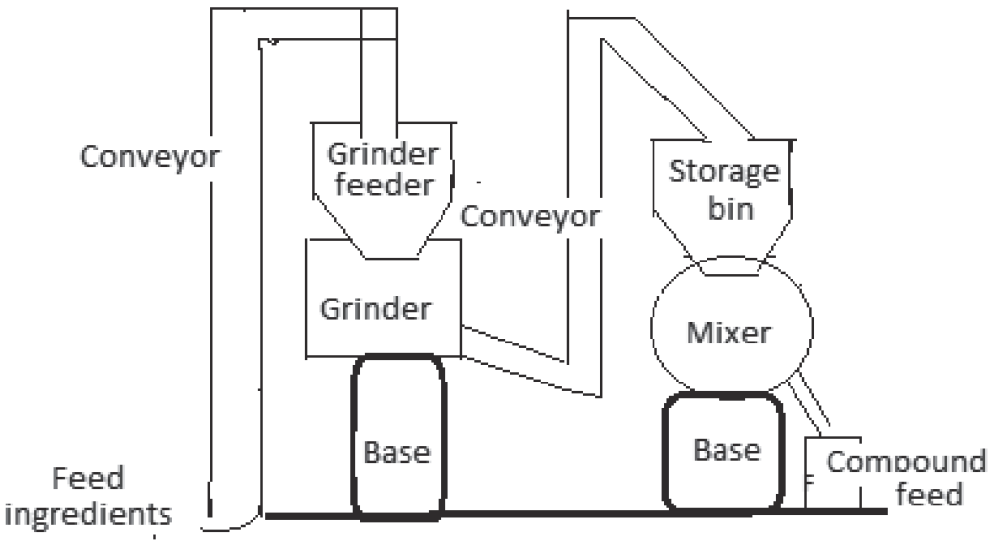
3. Funnels of different size
4. Kjeldahl flask-250,500 and 750 ml
5. Beaker- with and without spout-100, 250, 500 and 1000ml.
6. Round and flat bottom flask
7. Gooch crucible
8. Sintered glass crucible
9. Volumetric flask
10. Graduated cylinders
11. Desiccators
12. Spatula
13. Heating mantle

A typical animal nutrition laboratory may have the following common chemicals

1. Sulphuric acid
2. Hydrochloric acid
3. Nitric acid
4. Sodium hydroxide pellets
5. Sodium sulphate
6. Copper sulphate
7. Potassium dichromate
8. Ammonium molybdate
9. Potassium permanganate
10. Ammonium oxalate
11. Petroleum ether
12. Boric acid
13. Methyl orange, methyl red, bomocresolgreen, phenophthlin indicators

A typical animal nutrition laboratory, in addition to above mentioned equipments, chemicals and glasswares, an animal shed for experimentation and storage space for feeding and watering materials and others should be there.

Compound feed and pellet prepared in feed mill. One can visit the mill for practical knowledge and how it is prepared. Raw materials like cereals, oilseed cakes, mill by products like bran and polish, mineral mixtures is procured and ground initially in grinder and then these are in proper proportion mixed in mixer for compound feed preparation. Simple diagram is shown below for basic grinding and mixing and how these are collected the final product i.e., compound feed.



Sample questions

1. Write the importance of grinder, conveyor and mixer in the feed mill?
2. Name some common chemicals used in lab?
3. What is Kjeldahl digestion and distillation apparatus?
4. What is the use of Soxhlet apparatus in animal nutrition?