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Lecture title: Sampling for feed analysis

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Summary:

The sample is a part of feedstuff substance which represent a proper part of the whole feedstuff components. samples taken should be free from cheat to determine their actual values in a correct way.

It is preferable to write the chemical composition of these samples on the sacks containing these feedstuff.

Rations or feedstuffs stored in the form or displayed in local markets have different types, or shapes such as sacks, grains, cubicles, hay, straw bales , green vegetables, plants cultivated in the field and liquid dietary substances. Hence, each types of this feed should be sampled in its specific method for ideal sample representative.

Methods of sampling :-

There is an important notice that sample taken from the fields or sacks filled with animal feed for food analysis should represent **(10%) of the feed. This percentage should be taken from different parts of the ration and should be random without any preference.**

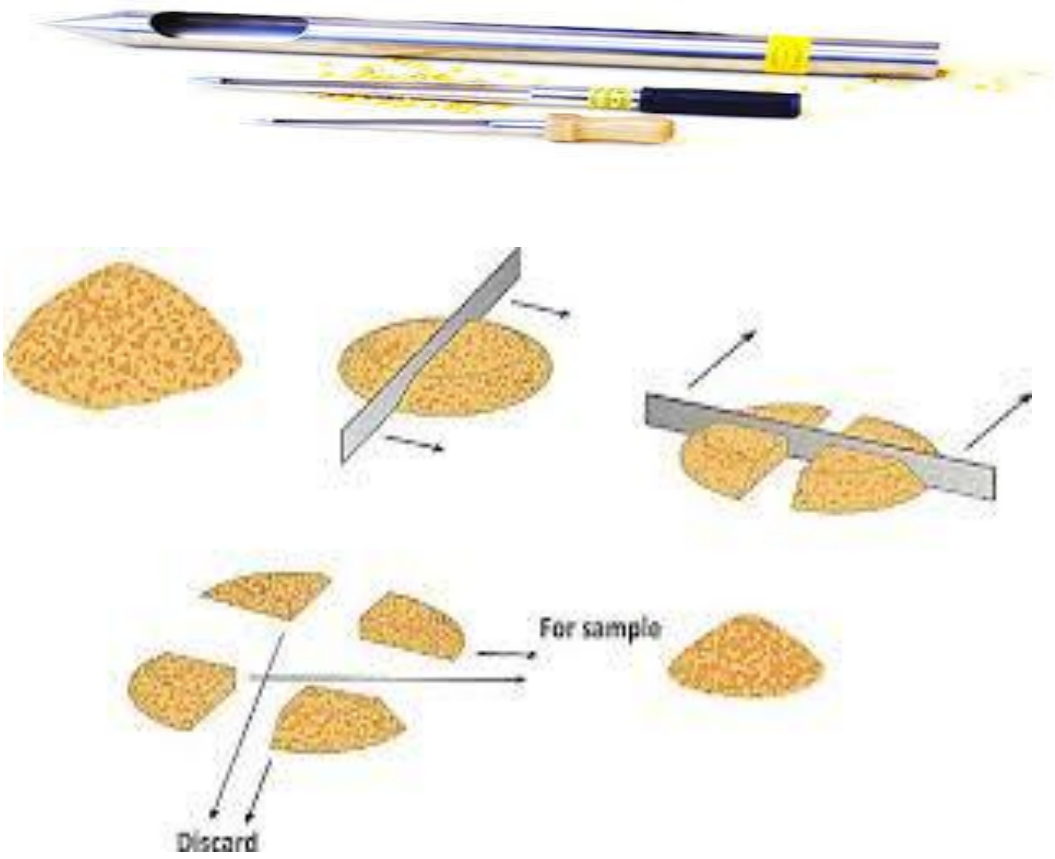
There are several sampling methods according to the shape of the feed :-

1. Cereal and seed sacks:

This operation is performed by obtaining (10%) of number of available sacks. Samples should be taken from different locations of the sack with multiple dimensions and directions using a special pen designed for sample picking. The primary sample should be to small less size sample called **"subsample"**.

Subsample is a sample prepared from the total mixing of the primary sample.

The primary sample is located on clean and smooth surface in a square form. The large square is then subdivided into multiple small squares. Subsequently, the sample intended for analysis is taken from each square as shown in the figure.



(Sub sample)

The collection of this sample weighs about (1 kg.). later, this sample is packed in three special jars until the operation of analysis takes place.

2. Pellets and cubes : -

Similar procedures are followed. Some tablets, pellets, are taken from different regions of the sacks and from multiple directions. The

primary sample is then reduce into (1 Kg.) applying the previous method.

3. Hay bales:-

The previous method is followed as in case of grains. Ten percentage (10 %) of samples is taken i.e. from ten bales, only one bale is taken. **However, if the bales are less than ten bales, sample should be taken from most bales.** Primary sample should be taken from different places and directions. The primary sample show later be reduced after mixing and chopping followed the previous method.

(hay bale)

4. Heaps of straw or other plant by- products:-

To obtain the primary sample, (10) points (spots) of different regions and directions were determined. Later, samples were taken from

the primary sample. Lastly, these samples are further reduced into one sample following the previous method.

5. Green roughage of the field:-

Thirty - fifty (30 - 50) spots of green roughages are randomly determined within the farm. These plants are cut using sharp instrument at the ground level. All parts of the plant should be preserve from falling and this represented the primary sample.

This sample will further be reduced after it's chopping in the laboratory to small pieces (2-3) cm. length using sharp scissors **for the purpose of ensuring distribution of heat to all parts of the samples .**

One hundred **(100) grams** are taken for estimation of primary moisture.

6. Liquid substances:-

The weight of dry matter within the liquid substance should not be less than (100 gram). The sample is taken after careful and total mixing of the liquid by glass bar and then by special instrument used for taking liquid sample.

preparation of samples for analysis :-

Typical, sample is prepared for laboratory analysis operations as follows:

1. Exclusion of all foreign bodies such as fine stones, gravels, dust, sand and straws, If the sample is grain.

2. **The sample is grinding using cereal mill for small amount of grain.** The sample is then sieved and is regrind for those of rough parts again in order to be homogenous.

3.The green forages should be dried first to get rid of moisture. The process of drying is done by putting it in oven at (70 °C) for (16) hours. Then, the sample is kept in special glass cans until feed analysis of the sample will be achieved

4. Meat samples are exposed to **"pulverization"** in special mortar or using special mixers after separation meat from bone.