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Production system

Feeds and feeding of chicken vary between the following systems:

- ❑ ***Free range***
- ❑ ***Semi intensive***
- ❑ *Intensive (Commercial)*
- ❑ ***Due to profitability***

Production based on improved breeds with commercial diets:

- ❑ ***Starter diet :-*** broiler starter and chick mash - high in protein offered upto 8 weeks
- ❑ ***Growers' diet/mash :-*** medium in protein offered from 9- 19 weeks
- ❑ ***Layer diet/mash:-*** lower in protein offered from 19 weeks onwards

What to feed?

Composition and availability of feeds depend on:

- ❑ *Season*
- ❑ *Locality*
- ❑ *Production system*

Poultry require feeds containing:

- ❑ *Energy*
- ❑ *Proteins*
- ❑ *Vitamins*
- ❑ *Minerals*

Scavenging

- ▣ *Is appropriate in free range and semi intensive rearing systems*
- ▣ *Adult cocks and hens should have enough space for scavenging in the surrounding*

Feed types

- ❑ **Energy rich:-**maize, millet, sorghum, sugar, maize bran, pollard, wheat bran, maize germ, roots, tubers
- ❑ **Protein rich:-**blood meal, fish meal, meat and bone meal, cotton seed, soya meal, sunflower meal, peanut meal, beans, peas, oil cakes, fish, maggots, termites, worms, insects
- ❑ **Minerals rich feeds:-** bone meal, burned eggshells
- ❑ **Vitamins:-** Green grass, Vegetables, fresh cow dung (scavenging birds)

Non nutrient substances

- *Grits*
- *Water*
- *Medications*
- *Growth promoters*

Energy feeds

- ▣ Form >75% of poultry feed
- ▣ Maintenance requirement e.g. *body temperature, Vital functions, exercise*

Protein feeds

- ▣ *Form not more than 20% of poultry diet due to high costs*
- ▣ *Needed for growth, production and optimal health*

Minerals

- ❑ *Important for bone formation*
- ❑ *Egg formation (strong egg shells)*
- ❑ *Optimal health status*
- ❑ *Important minerals are calcium and phosphorous balanced*

Vitamins

- ❑ *Important for optimal health status ie disease prevention*
- ❑ *Important vitamins are A,B2 and D*
- ❑ *Vitamins A and D can be derived from greens and sunlight*
- ❑ *Vitamin D may come from fresh cow dung and by giving multivitamins*

Simple feed mixing

- ❑ *Advisable to make semi balanced feed for small chicks from 0-6 weeks*
- ❑ *Ingredients should be dried in the shade*
- ❑ *Crash or grind grains for proper mixing*
- ❑ *Use local containers to measure those ingredients*
- ❑ *Mixed feeds should not be stored for more than a few weeks to avoid contamination*
- ❑ *Above 8 weeks of age, poultry could be fed in a cafeteria system to save energy and time in mixing the feeds*

Simple ration for supplementing local chicks

Ingredient	Quantity
<i>1. Crushed maize/sorghum or millet</i>	<i>1 kg tin</i>
<i>2. wheat/sorghum or millet</i>	<i>1 kg tin</i>
<i>3. sunflower/sesame/groundnut cake</i>	<i>2 match boxes</i>
<i>4. Bone/salt mix</i>	<i>1 match box</i>
<i>5. Blood or fish meal</i>	<i>2 match boxes</i>
<i>6. sesbania/leucaena leaves</i>	<i>2 match boxes</i>

Total amount of feed at different ages of local chicken

<i>Age (weeks)</i>	<i>Intake/bird/day (g dry weight)</i>
<i>1</i>	<i>12-15</i>
<i>2</i>	<i>15-21</i>
<i>3</i>	<i>21-35</i>
<i>4-6</i>	<i>35-50</i>
<i>7-8</i>	<i>55-60</i>
<i>16-27</i>	<i>68-80</i>
<i>28</i>	<i>100</i>

How to feed?

- *Use local measures such as old (plastic) kasuku containers to measure feed required for a flock of 1 cock, 4 hens and 15 three weeks old chicks*
- *1 cock 35g = 35*
- *4 hens 4 X 35g = 140*
- *15 chicks 15 X 25 = 375*
- *Total at least = 550g / day*

Cafeteria feeding system of local poultry

- ❑ *Suitable for birds above 8 weeks of age where various types of feeds are offered separately*
- ❑ *Adult birds are able to mix their feeds according to their needs*
- ❑ *Feeders are divided into separate compartments*

Demonstration of cafeteria system

Energy rich e.g. Maize, millet	Protein rich e.g. Beans, peas	Mineral rich e.g. Bone meal	Oil rich e.g. Used cooking oil
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Feed mixing

- ❑ *May be based on simple assumption about the nutritional requirement of birds*
- ❑ *Least cost formulation computer program*
- ❑ *Samples of feed ingredients should be analyzed at a national nutritional laboratory*

Energy and protein content of some locally used feed ingredients

<i>Feed ingredient</i>	<i>Energy (kcal/kg)</i>	<i>Protein (g/kg)</i>
<i>Sorghum grain</i>	<i>1500</i>	<i>90</i>
<i>Rice polish</i>	<i>1500</i>	<i>110</i>
<i>Rice bran</i>	<i>1000</i>	<i>125</i>
<i>Wheat bran</i>	<i>510</i>	<i>150</i>
<i>Cassava meal</i>	<i>1600</i>	<i>1</i>
<i>Maize</i>	<i>1530</i>	<i>85</i>
<i>Cotton seed meal</i>	<i>1000</i>	<i>410</i>
<i>Fish meal</i>	<i>1020</i>	<i>500</i>

Some problems related to some feed

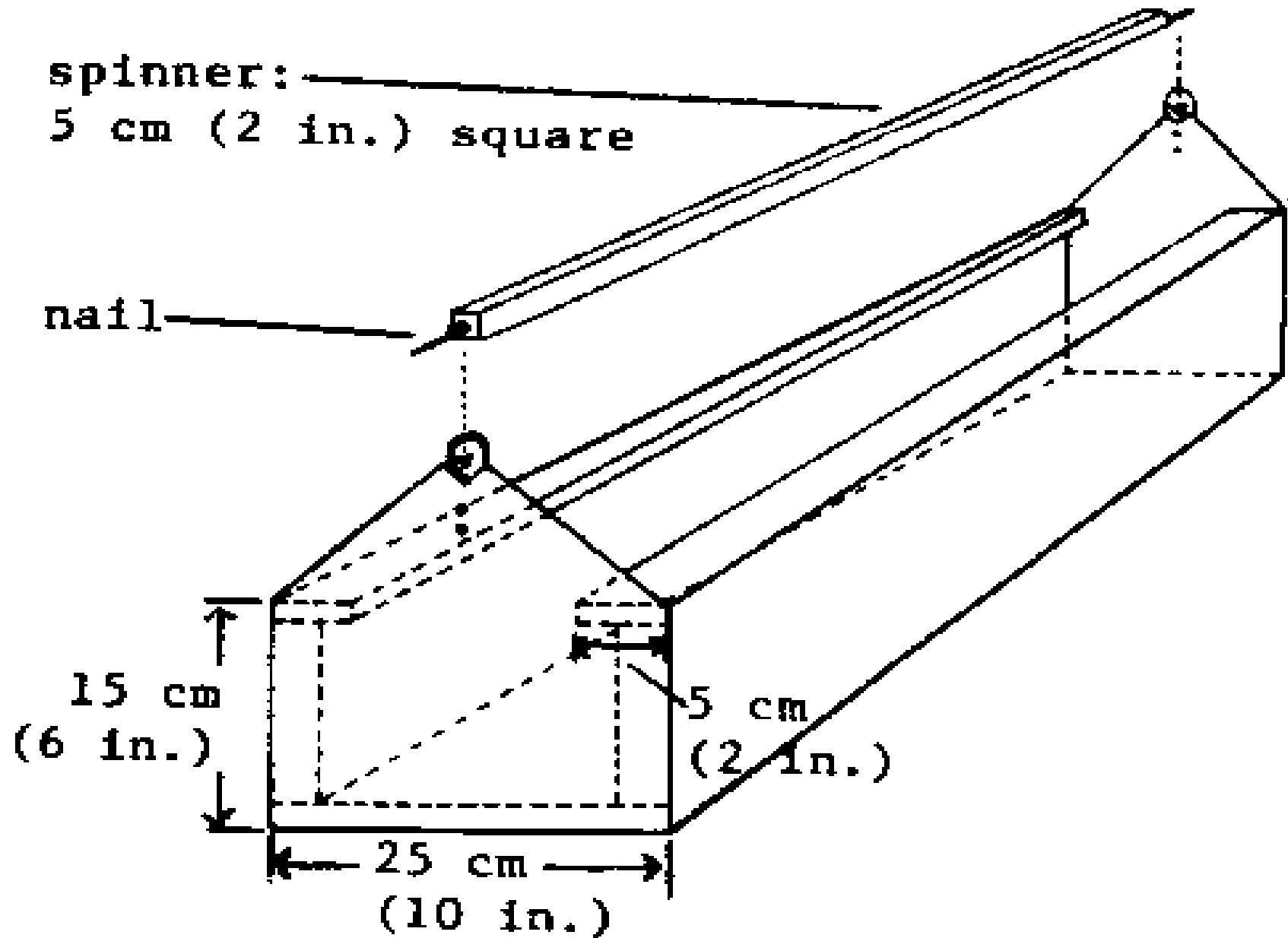
- ❑ *Fish - fishy taste to meat and eggs*
- ❑ *Cassava – contains cyanide which is toxic*
- ❑ *Oil and seed cakes can contain excessive amounts of oil and fiber*
- ❑ *Beans and peas contain a number of antinutritional substances*

Feeders and drinkers

- ❑ *Should always be kept clean*
- ❑ *Should be big enough for all birds of the same age to feed at the same time*
- ❑ *1 meter long feeder and 35 cm long drinker is enough for 20 adult birds to eat and 40 to drink*

Different types of feeders and drinkers

- ❑ *Simple drinker can be made of old tin can and plate*
- ❑ *Feeders and drinkers may be made of wood, clay, or metal*
- ❑ *Commercial drinker/feeder in plastic or metal*



Wood Feeder

Feed management

1. Use local ingredients for local birds
2. Know the quality of feed value and prices of each feed ingredient
3. Buy missing feed ingredients such as vitamins or proteins source from local stockiest
4. Change feed formulation depending on availability, quality or feed value and price
5. Reduce the flock size under free range system during lean seasons when feed cost increase
6. Change feeds slowly but gradually

Feed management

1. Mix feed ingredients uniformly in relatively small quantities to avoid long storage
2. Use locally available measurements such as tins or match boxes
3. Store mixed feed or ingredients separately on a raised platform
4. Keep rodents away from the feed store
5. Provide enough ventilation in the feed store
6. Caution, do not use mould feed ingredients

Thanks for listening