

**NON-RUMINANT ANIMAL  
PRODUCTION & HUSBANDRY  
(APH302)**

**Poultry Production**

**By**

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# Course Synopsis

- Problems & Prospects of poultry production
- Management Systems: Broilers, Layers and Cockerels
- Management of Ducks & Turkeys
- Hatchery Enterprises
  - Management of hatching eggs
  - Factors affecting hatchery enterprises
- Diseases and Control
- Marketing and Record Keeping

# Problems & Prospects of poultry production

- **Problems**

- ✓ Scarcity & high cost of day-old chicks, poults, etc.
- ✓ Poor quality of birds available for meat & egg prdn.
- ✓ Availability & high cost of poor quality feeds.
- ✓ Poor poultry health care services.
- ✓ Unsuitable poultry houses & poor maintenance of houses.
- ✓ Inadequacy of credits to poultry farmers.
- ✓ Inadequate managerial & technical know-how.
- ✓ Poor marketing, distribn & pricing of poultry prdts.

# Prospects: Areas of Poultry Prdn

- ✓ Poultry Meat Prdn: Broiler prdn for meat mart & fast food joints
- ✓ Poultry egg Prdn: Layers prdn for retail egg sellers, etc.
- ✓ Breeding & hatching of chicks, poults, keets, etc.
- ✓ Poultry equipmt manufacturing e.g FACCO®
- ✓ Processing & marketing of poultry prdts.
- ✓ Feed prdn.
- ✓ Prdn of drugs & vaccines.

**Poultry Prdn is of importance in Food prdn, research, industry, income generatn & as a hobby.**

# Management Systems

- Commercial Production System
  - Intensive mgt. E.g. Battery cage and deep litter
  - Semi-intensive
- Traditional System
  - Free-range

# Commercial Production System

- ✓ It produces meat-type & egg-type chickens
- ✓ Feed Conversion Ratio (FCR) is 3.75: 1 calculated as :

FCR or Feed: gain = Feed intake/weight gain

or Feed efficiency = Weight gain/feed gain

- ✓ Live weight @ 8-10wks = 1.2 to 2kg
- ✓ The egg strain produces 150-200 eggs in a cycle
- ✓ Male chicken (for meat or breeding purposes) attains market weight of 1.5 – 2.5kg @ 20-25wks.

# Traditional Production System

- ✓ Entails rearing of indigenous chickens mainly on free-range.
- ✓ Requires minimal investment.
- ✓ Produces both meat and egg (30% egg and 70% meat).
- ✓ Egg prdn is on the average 50eggs in a cycle.

# Management of Hatching eggs

- Life of Birds
  - **Embryonic stage** :- 21days for chicken, 28 days for turkey, etc. (Fertilized Blastodisc results into blastoderm)
  - **Post-embryonic stage:**
    - Layers (pullet chicks, 0-8wks; growing pullets, 9-22 wks/POL @ 14 -16wks and layers, 22-72 wks).
    - Broilers ( Broiler starter, 0-4 wks & Broiler finisher, 5-8/10wks).
    - Cockerels (Chicks, 0-8wks & growers, 9-22wks).



# Hatchery & Incubation

- ✓ **Hatchery** : a building that houses equipment used to artificially incubate hatching eggs
- ✓ **Incubation**: Mgt of fertile egg in order to ensure satisfactory devpt of the embryo in the egg to a normal chick

# Methods of Incubation

- **Natural Incubation: using broody hens**
- **Artificial Incubation: Incubator (Manual or automated)**
- **Two types of Incubator based on size: (i) Table and (ii) Cabinet**
- **Two types based on source of heat: (i) Electronic and (ii) Manually –operated (Kerosene stove incubator)**
- **Two major compartment of the incubator (Cabinet) viz:**
  - 1. Setting Compartment (Setter)
  - 2. Hatching Compartment (Hatcher)

# Considerations for Incubation

## **Before Incubation**

- Fertile Eggs & In good Condition
- Moderate Size
- Uncontaminated externally
- Stored at moderate/room temp not more than **six days**.

## **During Incubation**

- Ventilation to provide Oxygen
- Turning at odd number of time to prevent the prevent the embryo from sticking to one side
- Regulate the temperature and relative humidity

# Incubation Periods of some Poultry Species

- Domestic Fowl- 21 days
- Turkey – 28 days
- Duck (Muscovy)- 33- 35days; others- 28days
- Goose – 29-31days
- Guinea Fowl – 26-28 days
- Pigeon – 16-20 days
- Japanese quail – 16-19days
- Pheasants – 22-24days
- Ostrich- 40-42days

## Management of Eggs in the Incubator

- Fumigate the incubator and the hatching eggs using Formaldehyde &  $\text{KMnO}_4$  (2:1).
- Allow the Incubator to run for about 24 hours to permit the detection and possible rectification of any defect before eggs are set.
- Eggs are set horizontally in egg trays table-type incubator and vertically in cabinet incubator (broad end should be up).
- Trays should not be concentrated to one section of the incubator.
- Colour labels should be used on the trays to identify time of setting.
- Turning begins 24hrs after setting in opposite direction and at odd number of times in a day.
- Candling is done by exposing the eggs to a beam of light in a darkened area (defn.)

# Management of Eggs in the Incubator (contd.)

- Candling is done twice e.g. For chicken - 5<sup>th</sup> day to determine fertility and 18<sup>th</sup> day to detect dead or living embryos
- After the candling at the 18<sup>th</sup> day (for chicken), hatching eggs with living embryos are transferred to the hatching compartment.
- Though chicks hatch on the 21<sup>st</sup> day in the case of domestic fowl, they are given extra for the down feather to dry off.
- Chicks that are fully developed and emerged from their shells (pipped) are removed from the incubator.
- Those that died and could not emerge are referred to as 'dead in shell' - DIS
- Meanwhile, those that are not fully developed and died before the candling at the 18<sup>th</sup> day are referred to as 'dead in germ' - DIG

## Handling of eggs of different poultry species during Incubation

Species	Incubator type	Time of Candling	Transfer to hatcher	No of turning
Domestic fowl	Table	5, 18	18	5 (3 hrs interval)
	Cabinet	18	18	"
Turkey	Table	10, 21 or 25	21-25	"
	Cabinet	21 or 25	21-25	"
Duck	Table	7-14, 24	24	"
	Cabinet	24	24	"

Note: Goose as for turkey

# Causes of Embryonic Death (DIG & DIS)

- **There are 3 peaks of embryonic death**

1. Between the 4<sup>th</sup> and 5<sup>th</sup> days due to transition from carbohydrate to protein as source of energy for the growing embryos. This is accompanied by accumulation of  $\text{CO}_2$ ,  $\text{NH}_3$  and  $\text{C}_3\text{H}_6\text{O}_3$  (lactic acid) if ventilation is very poor.
2. Between the 14<sup>th</sup> and 15<sup>th</sup> days of incubation - associated with riboflavin (Vit.  $\text{B}_2$  -  $\text{C}_{17}\text{H}_{20}\text{N}_4\text{O}_6$ ) deficiency in diet.
3. Between the last 3 days of incubation – due mainly to mismanagement of the hatching eggs.



# Factors affecting Incubation & Hatchability

- In-breeding decreases hatchability & Vice-versa
- Age reduces hatchability
- Lethal genes reduces hatchability
- Mating ratio if not done properly affects fertility & hatchability
- Diet deficient in riboflavin, vits. B and D and mineral such as Ca, Mg and Fe affects hatchability.
- The Incubation Condition affects hatchability

# Calculations made in the Hatchery

- **Percentage Hatchability = (No of Chicks hatched/ No of fertile eggs) x 100**
- **Percentage fertility = (No of fertile eggs/ No of eggs set) x 100**
- **Percentage hatch = (No of day old hatched/ No of eggs set) x 100**
- **Percentage settable eggs = (No of eggs set/ No of eggs collected) x 100**

## Brooding & Management of Young Birds

- **Brooding: Provision of warmth to the newly hatched chicks in order to ensure satisfactory growth**
- **Brooding Requirements**
  - ✓ Decide heat source: (kerosene stove or Electricity or charcoal pot) – 3 to 5 kerosene stoves placed on the floor or 4, 100watts bulbs ( 2, 200watts bulbs) hung 15 to 30cm from the floor to provide heat for 100 chicks. **This heat is confined to a particular area for the chicks using hovers or brooder boxes.**
  - ✓ Do not overheat the brooding areas. Excessive heat causes dehydration, poor growth and increased mortality.
  - ✓ Secure all heat source so that they cannot be moved too close to inflammable materials.
  - ✓ Ideal temp. measured 5cm from the floor: 33-35<sup>0</sup>C for chicken & guinea fowl ; 37-41<sup>0</sup>C for turkeys; 29-35<sup>0</sup>C for ducks and geese

# Summary of Brooding Requirements

Age of Chicks	Temperature (°C)	Floor Space (m <sup>2</sup> /chick)	Feeder Space (cm/chick)	Waterer Space (cm/chick)
1 <sup>st</sup> Week	33-35	0.023	2.54	1.27
2-3 weeks	29-32	0.05	3.84	1.27
3-5 weeks	27-29	0.07	5.08	1.27
5-8 weeks	21-27	0.09	5.08	1.91
8 weeks and >	Room temp	*0.14	*7.62	*2.54

**\*Increase appropriately as birds grow and for larger breeds and types**

- **DETERMINATION OF CHICKS COMFORT LEVEL DURING BROODING.**

- **Two methods suffice**

- ✓ Comfortable chicks spread evenly in the brooding area.
- ✓ By touching the young fowl's legs; if chilled, their legs will be cold to touch and appear puffy and swollen and if extremely hot, the legs will appear dry, thin and dehydrated. If none of these was noticed, the birds are normal.

**Note: Too high a temperature may result in death; too low a temperature may result in stunted growth, death due to chilling, increased feed consumption in an attempt to maintain body temperature and high susceptibility to respiratory diseases**

# **Additional mgt tips during brooding**

- **Clean and refill waterers daily**
- **Add a vitamin/mineral supplement to the water of young fowl for the 1<sup>st</sup> week to help them get off to a better start**
- **Consider the possibility of predators attacking your flock and provide adequate protection**
- **Observation of the flock is important particularly for signs of unusual behaviour**
- **Debeaking: removal of part of the lower or upper tips of the beak to prevent cannibalism (flesh eating)**
- **Dubbing: removal of part of the comb**
- **Despurring: removal of spur (horny projections above the claws on the legs of male birds)**
- **Toe clipping: removal of part of the toe to avoid tearing of the flesh during mating**
- **Wing tagging: done for identification**
- **Immunization: Day-old (Newcastle vaccine (I/O), Mareks (for pullet chicks), IBDV (Infectious Bursal Disease Vaccine) i.e Gumboro @ 2 weeks and Lasota at the 3<sup>rd</sup> week or vice versa.**

# Methods of Sexing Day-Old Chick

- Sexing of day-old chicks is done to determine the gender of the chicks i.e. the differentiation of the sex of the birds into male or female. The methods include:
  1. **Biochemical/Histological Sexing:** involves the identification of chromosomes by karyotyping, or the biochemical characterization by DNA analysis or other chemical methods. It is quite uneconomical.
  2. **Instrument Sexing (Keeler Instrument):** an optical instrument somewhat similar to a proctoscope (used to inspect the rectum). Male chicks have two testicles while females have only one ovary located on the left side. Requires considerable training and can result in injury to more chicks than the vent sexing method.
  3. **Vent Sexing:** Developed by a Japanese. It is the visual examination of the cloaca of the chick with the sex being distinguished according to minute anatomical differences.

4. **Auto-Sexing:** is the use of an easily observable sex-linked characteristic to distinguish the sex of the chick. It is important to note that in birds, the male has XX and the female has XY sex chromosomes. In sex-linked crosses, the gene in question is carried on the X-chromosome. Two sex-linked characters are: Color and feather (slow feathering and rapid feathering).

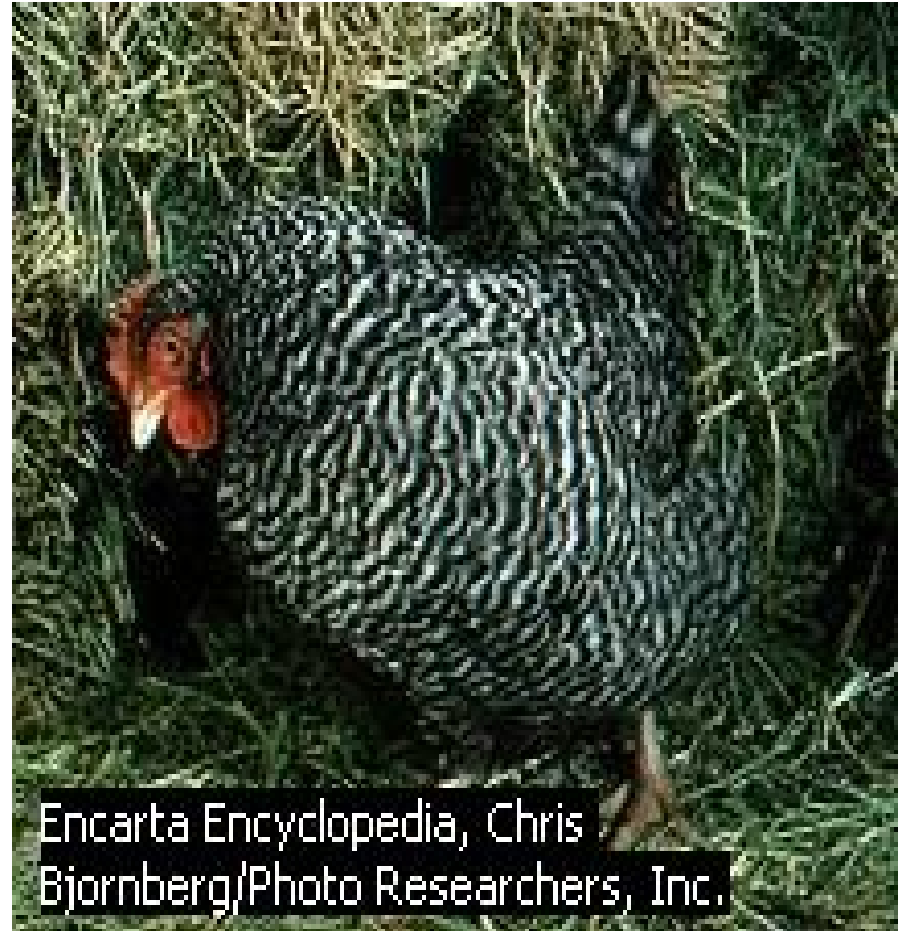
**Examples:** the sex-linked trait of barring has been used for auto-sexing other crosses. When a non-barréd male is crossed with a barréd female, the resulting females will be non-barréd like the parent male, while the resulting males will be barréd like the parent female. Also, mating of male Rhode Island Red (RIR) and female barréd Plymouth Rock. It will give a dark brown pullet and barréd colour cockerel.



# Management of Layers (Laying birds)

- **Stages of Life:**
  1. **Pullet chicks: day-old to 8weeks (fed on chick mash)**
  2. **Growing stage: 8-20weeks (Point of cage – 12 to 14 weeks & Point of Lay (POL) – 14-16weeks. (fed on grower's mash)**
  3. **Laying stage: 20 to 72weeks (fed on layer's mash)**
- Birds should be transferred to the laying quarters (deep litter or battery cages) at 15 to 17 weeks old. The pen must have been cleaned, disinfected and made to rest for about 2 days.
- Birds are transferred in well-aerated crates in the morning or evening.
- The birds should be without feed for 4 to 6 hours before been transferred.

# Pictures showing Rhode Island Red Hen & Barred Plymouth Rock Hen



# Advantages & Disadvantages of Battery Cage

## Advantages

- More pullets may be kept/unit area in battery cages that are 3 or more tiers high.
- Broodiness is eliminated
- Culling (removal of unproductive birds) is made easier.
- Less feed may be required per dozen egg.
- Eggs can be collected less frequently

## Disadvantages

- The initial capital outlay is higher because of the cost of the cages and house construction.
- Higher percentage of blood spots in eggs
- Internal egg quality drops off more quickly
- Fly problems are higher with the cage system

## **Management of layers (Provision of Nest Boxes)**

- Nest boxes are provided for layers that will be maintained on deep litter.
  - Nest are preferably lined up near side of the pen away from the sun ray.
  - Wood shavings should be placed on the floor of the nest box to protect the eggs against breakage and to produce clean eggs.
- 
- **SIGNS OF ONSET OF LAYING**
    1. Birds will start to cackle (make noise with their throat
    2. The combs and wattles will be bright red and when touched, the bird will tend to stoop.

# Routine Management Operations on Layers

- Dead birds are removed to prevent contamination of other birds that may peck on them.
- Fresh feed is added to the stale feed in the trough.
- Water troughs are moved out and thoroughly cleaned and replenished with clean and cool water.
- Eggs should be collected at least 3 times a day; once at 8-9am, 12-1pm & 4-5pm. Frequent collection of eggs prevents egg breakages and help keeps eggs clean.

Note: 1. Eggs collected should be kept in egg trays or cartoons and should be packed with the small end down.

2. Cracked eggs, leakers and thin-shelled eggs should be kept separate after gathering.

3. Eggs should not be stored for longer than 2 weeks at room temperature to avoid spoilage.

# Occasional Management Operation

- **Culling:** This refers to the removal of sick, injured, unproductive and poor producing birds from the flock.

The advantages derivable from culling of birds are:

1. Prevention of spread of diseases.
2. Increase in the quality of the stock.
3. More space is allowed for the remaining birds.
4. Increase in profits principally by reducing feed required to produce a dozen eggs.

# Culling Chart

Part	Laying	Not laying
Pubic Bone	Thin, spread apart (takes 3 to 4 fingers)	Blunt, rigid & close together (takes 2 or less fingers)
Vent	Large, smooth, moist	Small, shrunken & dry
Abdomen	Full, soft, pliable	Contracted, hard, fleshy
Comb	Large, smooth, bright red, glossy & soft	Shrivelled, dry, dull and scaly
Ear lobes and wattles	Smooth, soft	Rough, dry

**Note: Inactive birds are not laying. Birds that have small and dry vent are either not laying or poor producing**



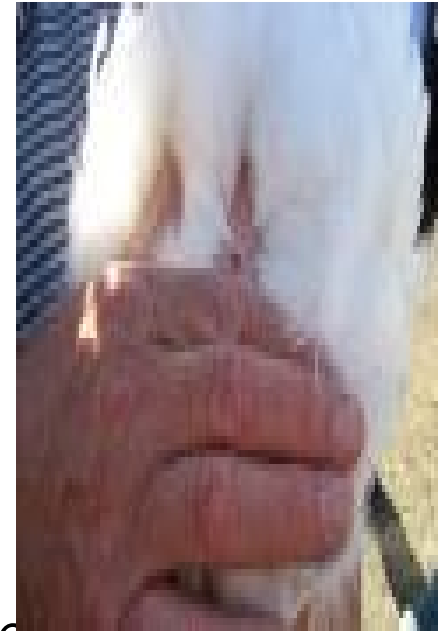
Correct method of catching and carrying poultry  
(*Click on images for larger version*)



Holding a hen in a comfortable position



Checking a hen for laying status by measuring the spread of the pubic bones



Checking a hen for laying status by examining the colour and condition of the vent



# Management of Breeders

- Chickens are also kept as breeders for production of day-old chicks
- Breeding stock should be reared far apart from other poultry stock. Breeder may either be for the production of broiler chicks for meat production or for the production of pullets for egg.

**NB. Most of the mgt. principles discussed for chickens also apply.**

## **Additional Mgt. & Feeding Principles**

- ✓ Breeding chickens are mainly reared on floors. From the rearing to adult stage, they are given more floor space, more feeds and water.
- ✓ To prevent indiscriminate mating, males and females are managed separately till maturity.

## Additional Mgt. & Feeding Principles

- ✓ The recommended ratios between males and females in the flock are:
  - 1 male to 12 females – for light birds
  - 1 male to 10 females – for medium-sized birds
  - 1 male to 8 females – for meat-type birds
- ✓ Breeders may be revaccinated for IBDV at 14-16 weeks of age.
- ✓ If movement to a separate layer house is necessary, they are moved at 10 to 12 weeks. Movement at a young age prevents stress and ensure possible breaks in *Mycoplasma gallisepticum* and *Mycoplasma synoviae* clean status.
- ✓ The enclosure where the birds (males & females) are kept (though separately) should be made of wire netting so that the birds can see and get used to themselves.
- ✓ The males should be introduced into the female pens about one hour before dark in order to allow little time for fighting that may ensue.
- ✓ Note that cockerels (male birds) attain peak fertility at 24 to 26 weeks of age. **Only intact males are used for breeding.**
- ✓ The first eggs for incubation should be collected at least 2 weeks after the onset of egg production. Hatching eggs weighing between 50 to 54g should be collected and fumigated immediately.
- ✓ The diets of the males and females are changed to breeders diets (15% CP & 2850kcal/kg ME) at maturity (24<sup>th</sup> week for male and Point of Lay for female)

# Management of Broiler Chicken

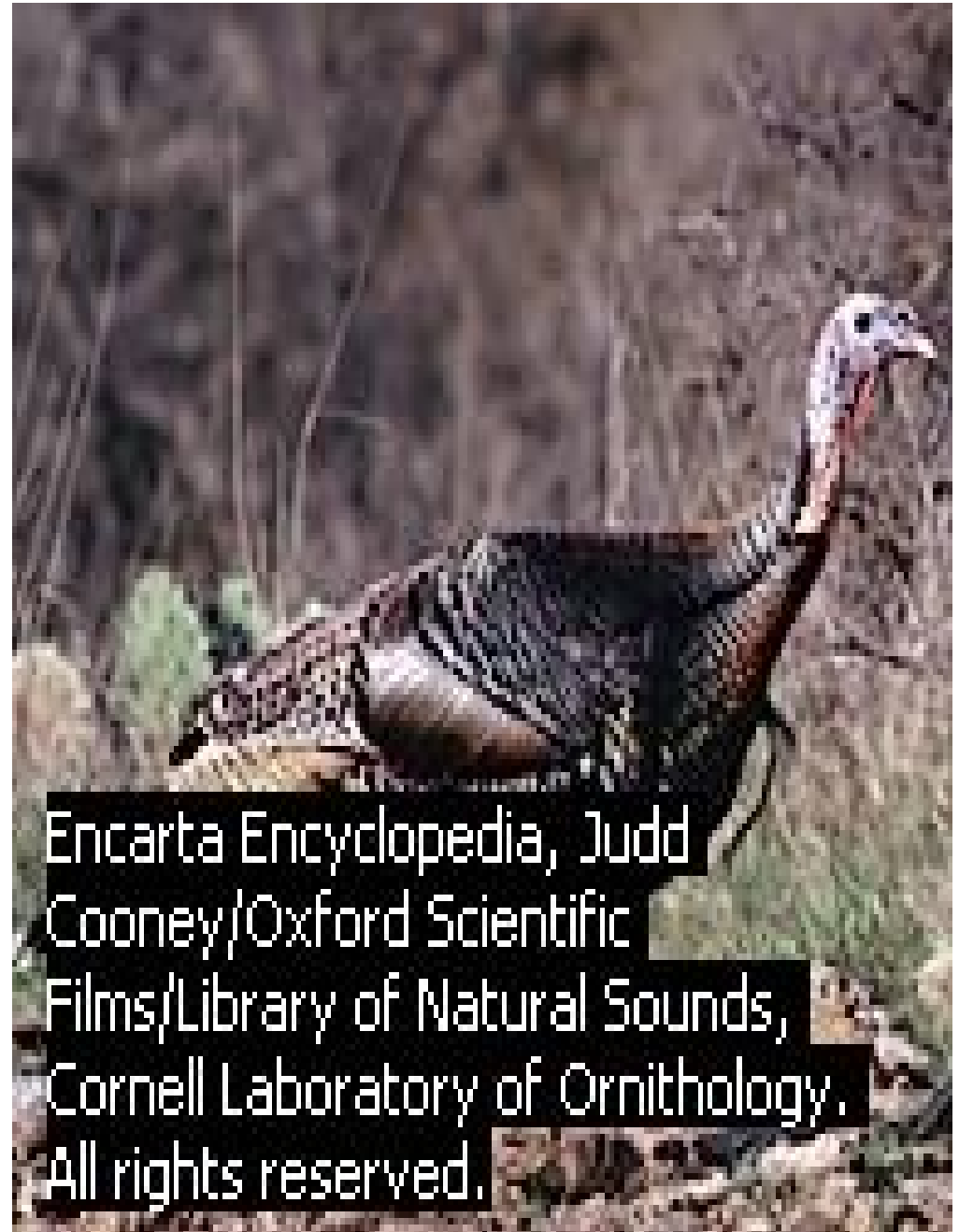
- Management similar to that of pullet chicks during brooding but it requires a higher ventilation because they are stocked at a higher density (0.06sq m) from day-old to market weight.
- ***High stocking density informed by the need to ensure profit from floor space and restrict extensive movement which is accompanied by the wasteful dissipation of energy.***
- The birds are fed broiler starter (0-4weeks) with 23-24% CP and 3200Kcal/kg ME and finisher (5-8weeks) with 20-22% CP and 3200Kcal/kg ME.
- A broiler chicken consumes about 2.5 to 4kg or more feeds from day-old to market weight. The FCR is between 2:1 to 5:1.
- Under good management, mortality should not exceed 5%.

# Management of Turkey

- Reared primarily for meat or as breeders to produce hatching eggs. They are rarely kept for the production of table eggs though the eggs are edible.
- The facilities required for a certain number of chickens should be doubled for the same number of turkeys. The stocking density is 0.12 sq metre.
- ***Desnooding i.e removal of the snood (a tubular fleshy appendage on the head near the front) is done to prevent head injury due to pecking and also reduce the spread of a disease known as erysipelas.***
- The vaccination schedule for chickens is also suitable except that turkeys are not vaccinated against IBDV. However, they are vaccinated against **blackhead (histomoniasis)** disease.
- The feeding regime for turkeys reared intensively is as shown below:
  - ✓ Turkey starter diet : 0 -8weeks
  - ✓ Turkey grower diet : 8 – 16 weeks
  - ✓ Turkey finisher diet : 16 – 20 weeks
  - ✓ Turkey roaster diet : > 20 weeks of age.

***Turkeys are marketed as meat birds any time from 16 weeks of age. The CP of starter is 28% while finisher has CP of 18 – 20%. The feed intake up to 24 weeks of age is about 25kg/bird.***

## Domesticated Turkey



Encarta Encyclopedia, Judd  
Cooney/Oxford Scientific  
Films/Library of Natural Sounds,  
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# Management of Turkey (Contd.)

- ✓ Extensive mgt of turkey requires the establishment of well-managed fenced pasture having ranged shelter.
- ✓ Wing clippings are practised when the birds are placed on range usually at 15 weeks of age in order to prevent flight.
- ✓ Toe clipping is also done with the aid of a surgical shears in order to prevent back scratching and tearing of flesh during mating.
- ***Note: Breeding males should not be wing-clipped after 16 weeks as this may toss them off balance.***

# Management of Breeding Turkey

- Turkey starts to produce eggs at about 32 weeks of age.
- Potential female breeders and males should be reared separately to allow for the following advantages:
  1. To reduce injury to female due to bruising in the latter stage of growth.
  2. To reduce fighting among the males because they fight less in the absence of females.
  3. To increase the efficiency of feeding the sexes separately
- ✓ **The same diets fed meat turkeys are suitable for breeding turkeys up to the 28<sup>th</sup> week.**

## SELECTION OF BREEDERS

Breeders are selected for vigour at 12-16 weeks, 22-24 weeks and 7 months.

The criteria for selection are:

- Straight and strong legs (not crooked, no swollen hock, etc)
- Potentiality for early market finish: plump well, meaty drumsticks, good breast muscle, rapid feathering, bright round head, good health and livability, good egg production and fertility.

# Management of Breeding Turkey

- The recommended male to female ratio are as follows:

<b>Turkey size</b>	<b>*Single mating</b>	<b>**Flock mating</b>
Small-sized turkey	1male: 20 females	1male: 15females
Medium-sized turkey	1male: 18females	1male: 12females
Large-sized turkey	1male: 16females	1male: 10females

\*Refers to where a pen of hens is mated with only one male

\*\*Refers to where several males are allowed to run with the entire females.

Note: Keep extra males for future use

- ✚ Laying turkeys are best reared on deep litters and exclusively in confinement.
- ✚ Nest (60x60x60cm) are provided 3 to 4 weeks before eggs are expected
- ✚ Turkey breeder produces about 100eggs in each breeding season (4-5months)
- ✚ Small-sized turkeys are more prolific than the large-sized turkeys.
- ✚ Artificial Insemination is used with or without natural mating for the heavily fleshed toms (males).



# Ducks and Geese Production

- These are known as '**water fowls**' because of their love for swimming water, though they can be raised without access to swimming water.
- They can be raised for meat, table eggs and as breeders to produce hatching eggs for ducklings and goslings.
- Ducks are mainly kept as free-ranging birds in Nigeria.
- Ducks and geese reared for meat may be finished on pastures. They may be allowed outdoors at 4 to 6 weeks of age or at 2 weeks in warm weather.
- Ducks are not good foragers as geese. It is economical to rear ducks without access to pasture though they can be let out into a yard. **Floor space of 0.12sq meter is adequate for fast-growing ducks, 0.45sqmeter for breeders and 100ducklings per hectare on range. Swimming water is essential from 6weeks of age.**
- Geese are best finished on pastures since they are excellent foragers and weeders. **They are stocked at 40-50 birds/hectare. Floor space required is 0.1sq meter.**

# Management of Broiler Ducks and Geese

- They are managed essentially in the same way as chickens. However, the points outlined below are specific for broiler ducks and geese:
  1. They do well in simpler houses since they are fairly hardy and can protect themselves better against marauders.
  2. Less brooder heat (30°C) is required during brooding.
  3. Dim all night lights.
  4. Drinking water must be changed frequently (at least 4 times a day) than in the case with chickens.
  5. Water troughs are more suitable. They should be emptied at night and refilled in the morning.
  6. Since duck droppings is extremely wet, more care should be taken to remove wet litter promptly. ***Mouldy litter should be avoided in order to reduce mortality.***
  7. Vaccination (except IBDV) schedule for chickens adequate..
  8. Ducks and geese should be caught by picking them up by the neck rather than the legs since the legs are easily sprained by handling.

# Feeding of Broiler Ducks and Geese

- These birds are reared intensively and fed *ad libitum*.
  - Ducks and geese starter diets from day old to 3 weeks of age.
  - Ducks and geese grower diets from 3 weeks to market age (8 or 9 weeks for ducks /12 to 16 weeks for geese).
- \*Where ducks and geese diets are not available, the respective diets for chickens may be used. At feeding time, the feed could be damped just sufficiently to make it crumble.

## Management of Laying Ducks and Geese

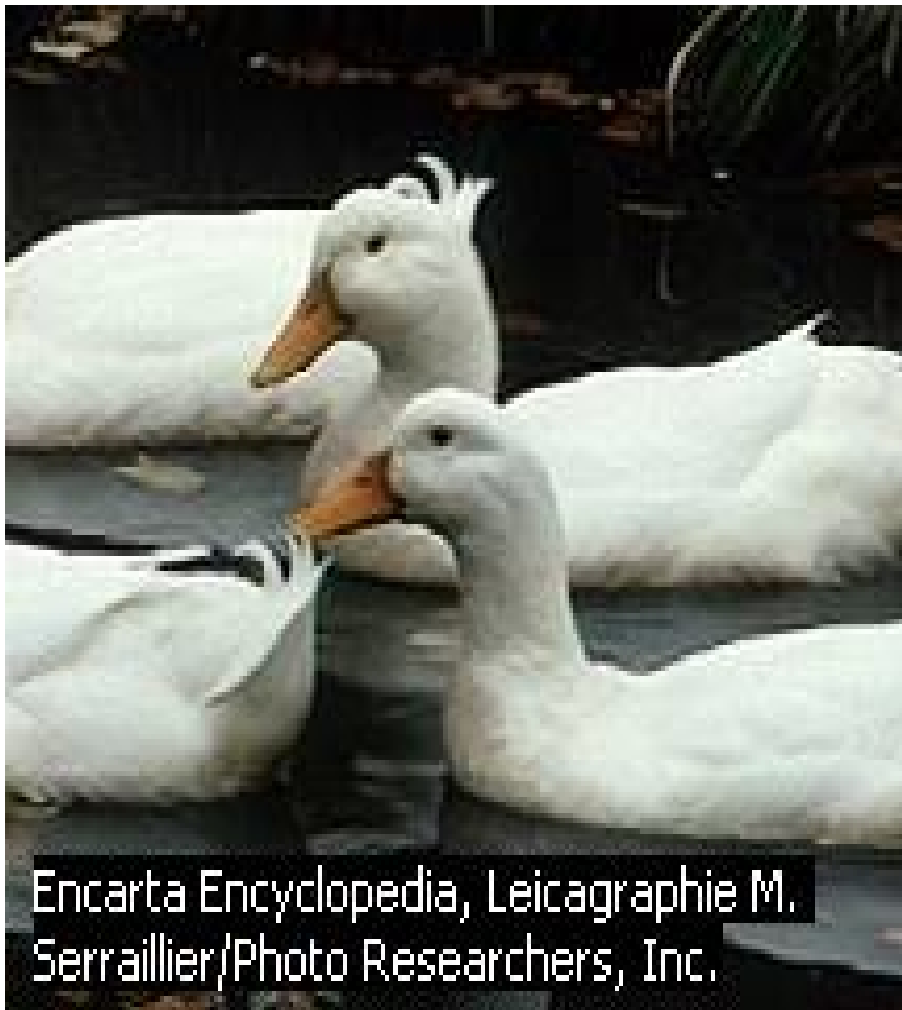
- ✓ Ducks would start laying eggs at between 28 and 33 weeks of age. Sexual maturity is attained at 5 to 7 months of age. ***It is encouraged to bring the birds into production earlier than 7 months because of small egg production and low hatchability.***
- ✓ Geese begin to lay when they are a year old. ***Young geese lay for only 4-5 months. 15-35 eggs/year for Toulouse and 60 eggs/year for Roman & Chinese geese.***
- ✓ In ducks, egg production increases rapidly once sexual maturity is attained. E.g. 250-360 eggs /laying cycle for Khaki Campbell, 80-160 eggs for White Pekins & 40 to 130 eggs for Muscovies depending on the system of management and feeding. ***Note that most duck eggs are laid at night and in early morning, hence, ducks should be confined to pens at night.***

# Feeding of Laying Ducks & Geese

- Ducks and Geese can be fed the same diets.
- Four types of diets may be used viz.,
  - a. Starter diets
  - b. Grower diets
  - c. Breeder developer: fed at 200 to 250g/bird/day to about 3 to 4weeks before eggs are expected.
  - d. Breeder diet fed during the laying period

**Note:** At 8-10weeks of age, a duck attains 3kg weight with feed efficiency of 0.26 to 0.33.

Mortality can be less than 5%.



Pictures showing White Pekin duck and Greylag goose

# Management of Guinea Fowls

- Can be raised intensively though mainly raised extensively or semi-intensively.
- The meat has a 'gamey taste'.
- They are not as fast growing as chickens.
- They are ready for the table at 12 to 16 weeks of age.
- In Nigeria, guinea fowl meat and eggs are from five main colour types or varieties of the helmeted guinea fowl, viz.,

**1. Pearl or grey (Sake), 2. Lavender (Hurudu), 3. Black (Agulu),**

**4. White (Parareu Zabi) and 5. Grey breasted (Hankaaka)**

- ✓ Guinea fowls are mostly reared on deep litter although they can also be reared in cages.
- ✓ They retain their '*feral*' (flighty and wild) behaviour. It is necessary to cut off the last portion of one wing (*pinioning*) before 2 weeks of age and to clip the flight feathers once every 3 to 5 weeks starting from the 4<sup>th</sup> week of age.
- ✓ Live weight is about 0.5kg at 6 weeks, 0.9kg at 8 weeks and 1.3 to 1.5kg at 10 to 12 weeks. Subsequent weight gain to maturity is very small.
- ✓ Floor space is about 0.1sq meter from day-old to market age of 12 weeks.

Note: the same health management procedure recommended for chickens should be strictly adhered to for guinea fowl. Mortality is very high in keets.

# Feeding of Guinea Fowls

- Feeders used for chickens are suitable for guinea fowls.
- The following feeding regime is required:
  1. Guinea fowl starter diet : day-old to 8weeks
  2. Guinea fowl finisher diet: 8 weeks to 12-16weeks of age
  3. Guinea grower diet fed to pullets: 8weeks to Point of Lay
  4. Laying diet fed to laying guinea fowls

\*In the absence of guinea fowl diets, the respective diets meant for chickens can be used.

## Management of Laying Guinea Fowls

- ✓ They are kept in battery cage or on deep litter.
- ✓ Egg production begins from 26 to 32 weeks of age. ***This is seasonal in the indigenous guinea fowls. It begins in March or April and stops in October of the same year thereby laying about 80 to 120 eggs each year.***
- ✓ If they are reared in range, it is important to leave at least one egg in the nest during collection to prevent the birds from making a new nest.
- ✓ The mating ratio for breeding guinea fowl is 1male to 3 or 4 females. Though they prefer to mate in pairs.
- ✓ On range, they tend to be monogamous.

## Helmeted Guinea Fowl



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# Bird Health Problems

*An accurate diagnosis of any disease is necessary before treatment can begin. Indiscriminate use of antibiotics is not a satisfactory substitute for sound disease prevention practices. Some of the more common health problems are discussed in the next few paragraphs.*

***Breast Blisters:*** This condition is caused by constant contact with litter or equipment. The condition or incidence increases with wet litter, overcrowding and leg problems. The condition is most common with heavy broiler chickens or turkeys.

***Cannibalism:*** This is a habit that develops in the form of feather picking, "pickouts" of the vent or picking at other areas on the bird. This bad habit can start at any age if conditions are right. The most common causes of cannibalism are overcrowding, too high a temperature, poor ventilation and high light intensity. Beak trimming (debeaking) could be considered to help correct the problem.

***Lice and Mites:*** These parasites can steal profits without being noticed. They can cause severe decreases in egg production, egg size and growth rate.

***Internal Parasites:*** Worms commonly infest the intestinal tract of birds. The most common are the large round worms, cecal worms and tape worms. Good sanitation between flocks and control of wild birds and insects will help prevent infestation.

***Coccidiosis:*** This disease is caused by a parasite called coccidia. The disease is common in both chickens and turkeys, as well as other animals. Tradition® brand poultry feeds have a drug option (amprolium) to aid in the development of immunity to this disease.

***Markes Disease:*** This disease affects the nerves and visceral organs of the chicken, resulting in paralysis and tumors of the internal organs. There is no treatment, however, vaccination at the hatchery is highly recommended.

# Light Management

✓ The effect of light on growth and production is a very important factor. Chicks should be placed on 24 hours of light for the first week. Broilers and capons can then be allowed to follow the natural day length as long as there is at least 14 hours of light provided.

✓ Day length control is very critical for attaining maximum egg production. A basic rule is: Never decrease day length for laying hens.

General guidelines for total of natural and artificial light could be as follows:

- First week after chicks are housed – 24 hours of light
- Two to 6 weeks – 16 hours of light
- Six to 12 weeks – 13 hours of light
- Twelve to 18 weeks – 10 hours of light
- At 18 weeks, increase day length one half hour per week until 15 hours of day length is reached. Laying hens must have a minimum of 8 continuous hours of rest (blackout) per 24 hour period.

Use one 60 watt bulb for laying hens or very young birds. One 25 watt bulb (per 200 square feet of floor space) is adequate for growing pullets, broilers and capons.

# Vaccination

Disease prevention may be practiced by isolation of different age groups and species of birds.

Thoroughly clean up between flocks.

Also purchase healthy birds, vaccinate properly, dispose of dead birds, maintain comfortable environment and control traffic between flocks of birds. These steps will generally control most poultry diseases.

There will be times when a vaccination program becomes necessary because of past history of the farm or geographic area. A suggested vaccination schedule:

- ✓ Marek's Disease: One day of age at hatchery
- ✓ Newcastle-Bronchitis: First vaccination at 2 weeks, second at 6 weeks, third at 16 weeks
- ✓ Fowl Pox: 12 weeks
- ✓ Epidemic Tremor: 14 weeks

# Record Keeping

- Keep daily, weekly, monthly or yearly records for all types of birds to provide information for:
  1. Acquisition of loan
  2. Allocation of resources in the case of budgeting
  3. Statistical purpose
  4. Future reference or for making projections.

Example: Egg Production Record:

It will include: Number of birds stocked, Mortality or culls, total eggs collected (crates and pieces), eggs sold and amount.

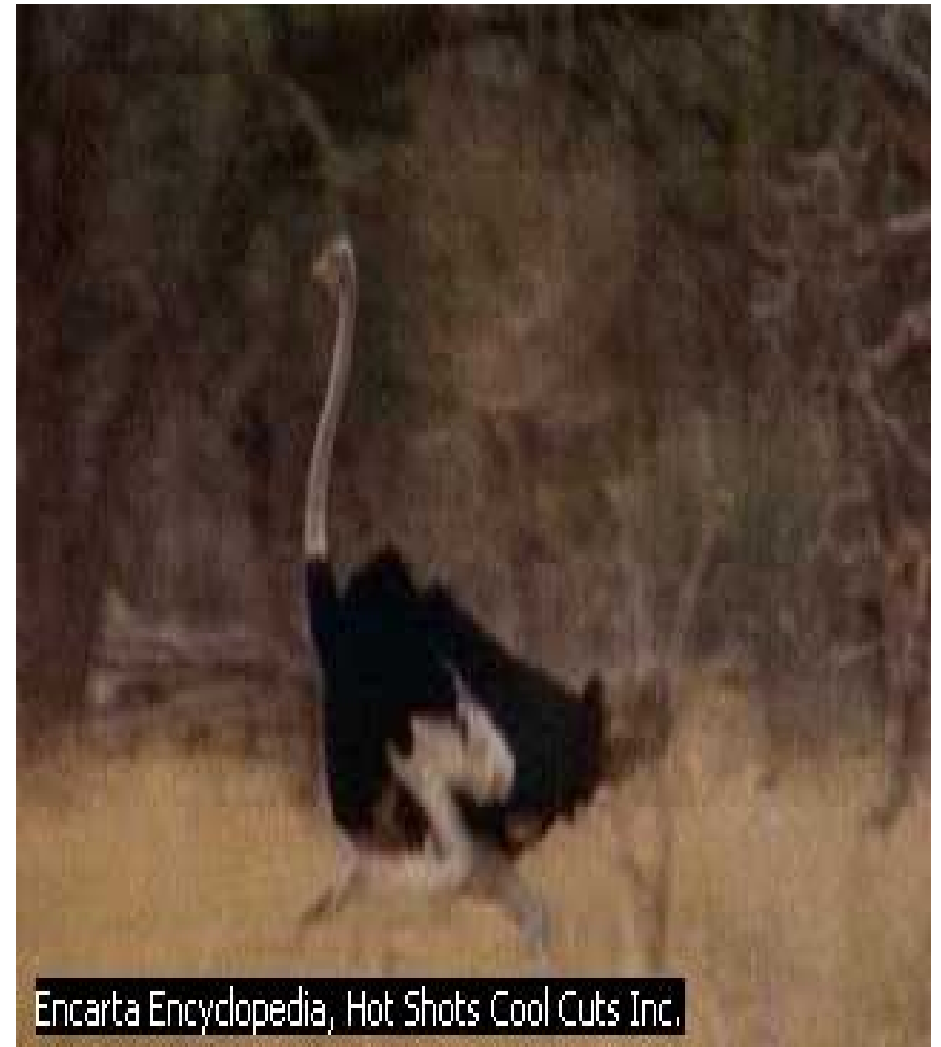
The record may also include:

Items purchased, cost of items, drugs and vaccines used, treatment and date, and balance of returns over expenditure.

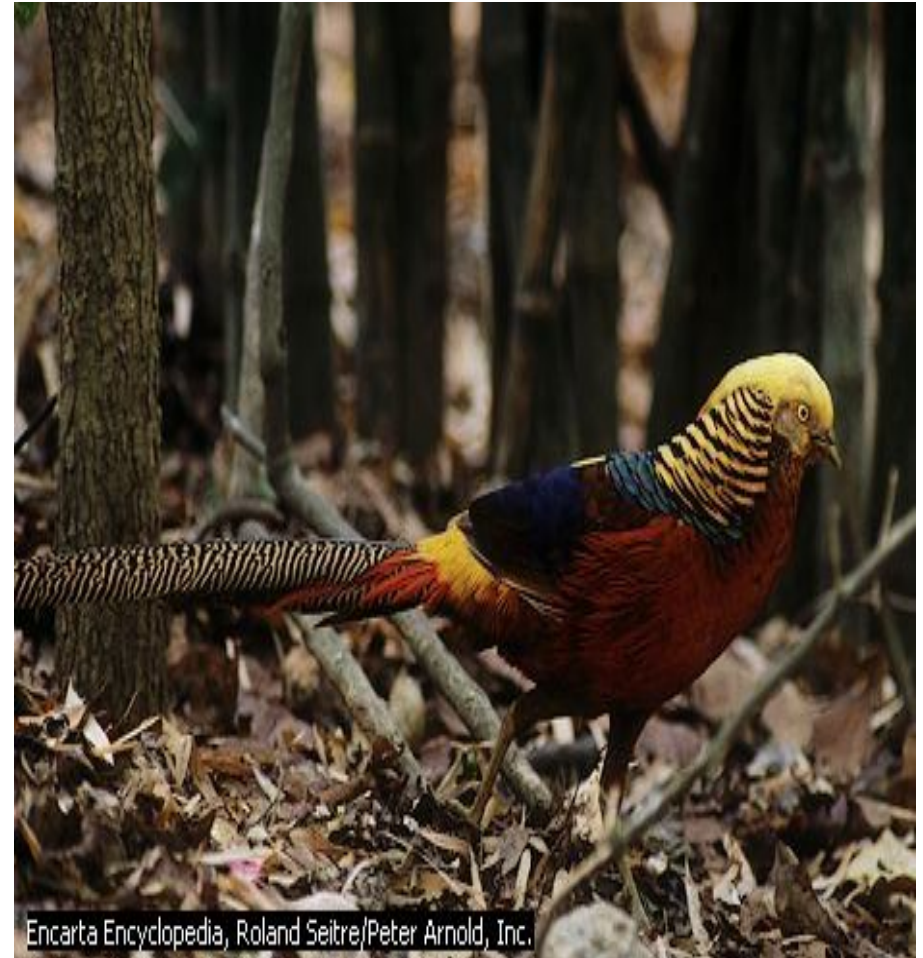
# Terminologies

- ✓ Chick: A young chicken less than 6 weeks of age.
- ✓ Day-old chick: A chick that is 24 hours or less old.
- ✓ Pullet: refers to a female bird up to the end of her first laying year.
- ✓ Hen: refers to mature female poultry after the first adult shedding of feathers (female birds in her second or subsequent years of laying)
- ✓ Cockerel: refers to a male chicken less than a year old
- ✓ Cock: a male chicken over a year old
- ✓ A rooster: a fully grown cock with prominent comb and spur
- ✓ A capon: a castrated male chicken
- ✓ Table eggs: eggs produced for consumption
- ✓ A broiler: chicken bred specifically for meat production
- ✓ A roaster: a young male meat-type chicken grown to heavier weight and it is usually between 12 and 16 weeks of age.
- ✓ Poussin: refers to poultry bred to be killed at tender age for the table.
- ✓ Tom: a male turkey (female is hen)
- ✓ Spent hen/Old layer: refers to female chickens that are disposed off after laying eggs for at least a cycle.

# Pictures on Peacock and Ostrich

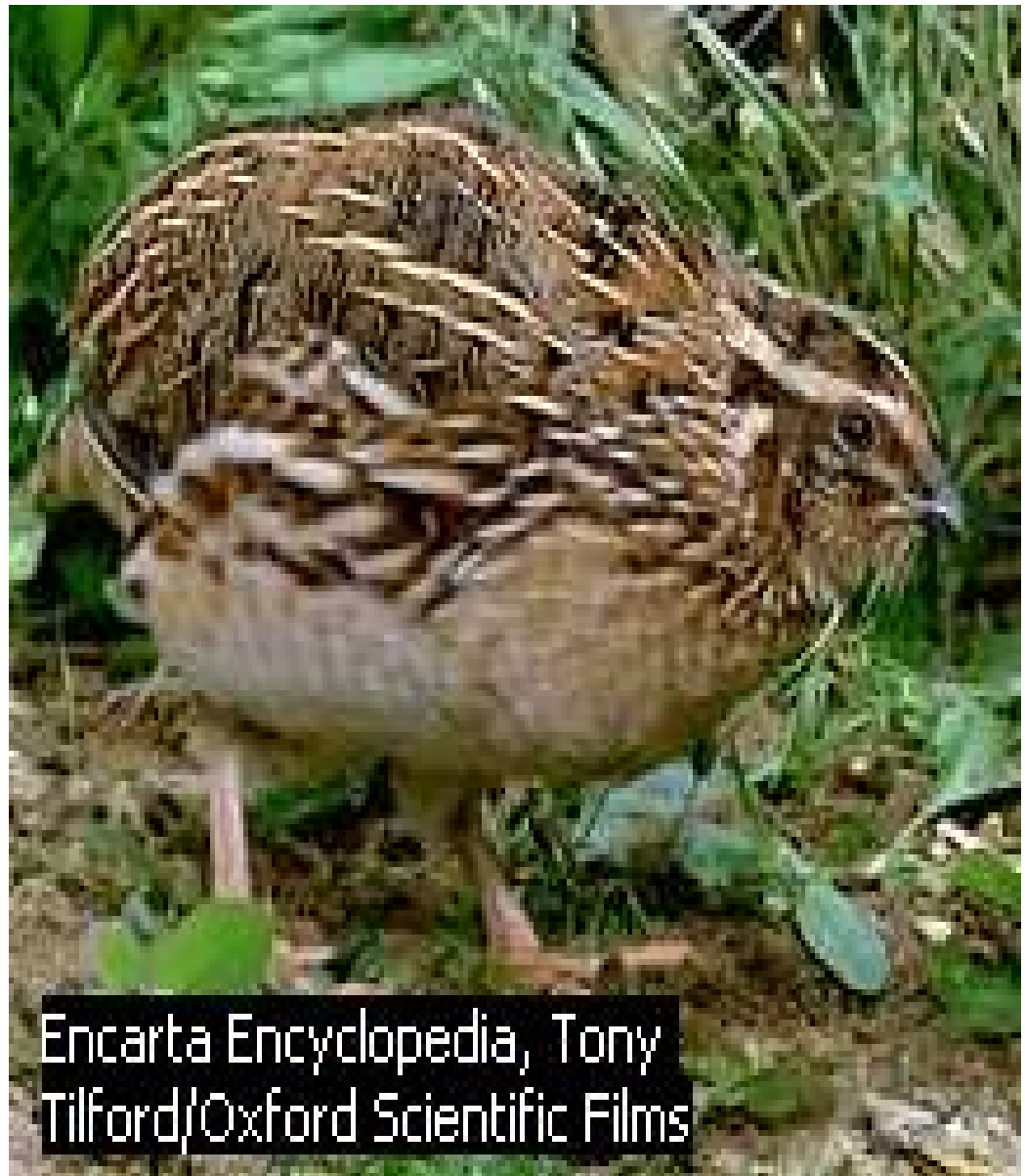


# Pictures on Wood Pigeon & Golden Pheasant





# Japanese Quail



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*Good Luck To You*

*'Let no one despise your youth'*