

# Poultry science

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***POULTRY REARING***

# BREEDING SYSTEMS

- **INBREEDING** – mating between closely related individuals (parent offspring / brother-sister mating)
- Inbreeding depression – after several generations of inbreeding sharp decline in egg production, hatchability, rate of growth and longevity of stock

# BREEDING SYSTEMS

- **LINE BREEDING** – mating individuals only less closely related (cousin-cousin breeding)
- **OUTCROSSING** – different strains of the same variety crossed. Followed mainly to improve egg production, meat quality and other characters of the flock

# BREEDING SYSTEMS

- **CROSS BREEDING** – mating between individuals of different breeds or varieties
- Hybrid vigour or Heterosis – superiority of the cross bred progeny over the best of their inbred or relatively more pure bred parent breeds. Superior in hatchability, chick viability, sexual maturity and egg production.

# SELECTION OF EGG

## TO BE AVOIDED

- High correlation between egg size and size of chicks hatched.
- Medium sized eggs preferred
- Uniform in size, shape, weight and colour
- Abnormal shape
- Lighter coloured
- Cracked and soft
- Excessive shaking
- Washing opens up pores
- Aged eggs
- Turn eggs advised daily or twice daily

# HATCHING

- Natural method
- Artificial method

# Natural method

- Under a broody hen-primitive-back yard farming- successful method
- Broody hen at proper time
- Hens dusted with insecticides to avoid lice and ticks
- Proper nests to be provided
- Care for broody hens
- Testing of eggs – daily- **CANDLING METHOD**

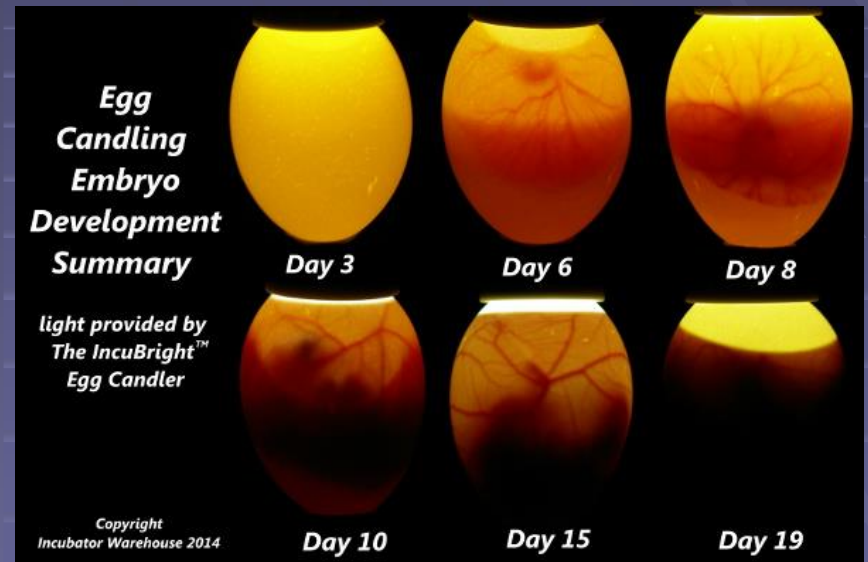
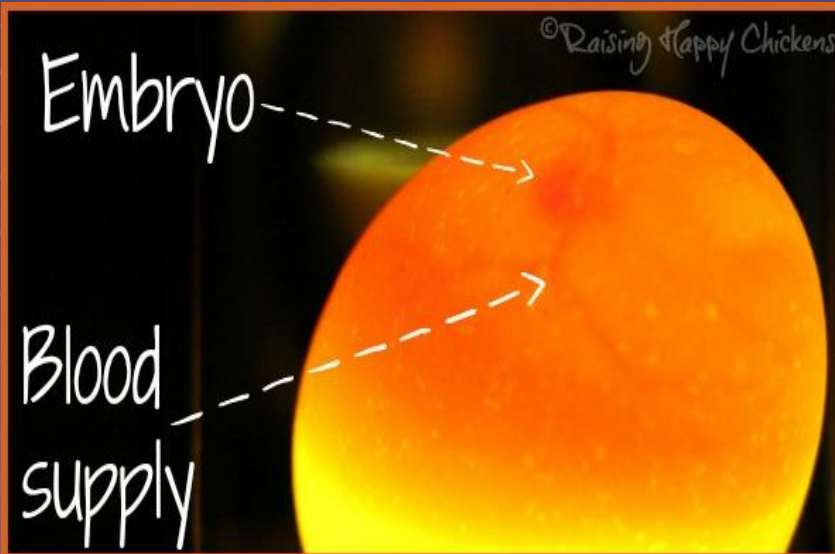


# CANDLING METHOD

- Candling is the method of testing eggs to check whether eggs are fertile and will hatch into baby chicks



# CANDLING METHOD



# ARTIFICIAL INCUBATION

- Process of incubating eggs by artificial means –help of incubators
- 200 years ago-French physicist-**Reaumur**-designed incubator
- Incubators
  1. Flat type
  2. Cabinet typeHot air type & Hot water type

# FLAT TYPE INCUBATOR

- Small capacity- 50-500 eggs- single layer
- In hot air type- heating from above and when cools sinks to bottom and escapes through vent
- In hot water type –water enters through bottom and escapes through vents at upper level

# FLAT TYPE INCUBATOR



# CABINET TYPE INCUBATOR

- More efficient
- Eggs placed in upright position
- Eggs turned by tilting trays
- Ventilation and air circulation mechanically controlled
- Offers considerable floor space
- Large incubators can keep more than 10000 eggs at a time

# CABINET TYPE INCUBATOR

- Separate setting and hatching trays
- One third of tray loaded every week
- Each set of eggs coloured label and removed to hatching compartment after 18<sup>th</sup> day

# CABINET TYPE INCUBATOR





# CABINET TYPE INCUBATOR



# MANAGEMENT OF INCUBATORS

- Leveling of incubators
- Sanitation and fumigation
- Positioning and turning of eggs
- Regulating temperature
- Ventilation
- Humidity control
- Care during hatching

# Advantages

- Large number of chicks hatched at a time
- Any time during an year
- Free of diseases
- More reliability
- Economical in long run

# **BROODING OF CHICKS**

- Natural brooding
- Artificial brooding

# NATURAL BROODING

- Few chicks are raised
- Desi hens have strong instinct
- Rearing day old chick-
- Brooding coop- enemies and unfavourable weather
- Feeding and management

# ARTIFICIAL BROODING

- Handling of baby chicks without the aid of hen
- Heated brooder-small damp brooder-using kerosene-50 chickens
- Well maintained brooder house-cleaned and fumigated-2-4 inches thick litter made floor
- Temp very important-not exact temp-depends on envt temp
- 33<sup>0</sup>C initial – reduce 2.5<sup>0</sup>C every week.
- Excessive heat causes crowding of chicks to a corner.
- Proper ventilation needed

# SEXING OF CHICKS

- Growing males as broilers not preferred
- Chicks sexed before rearing them
- Male chicks – **Cockerel**
- Female chicks – **Pullets**
- Male chicks are usually killed and discarded – **CULLING**
  1. Vent method
  2. Sex-linked mating

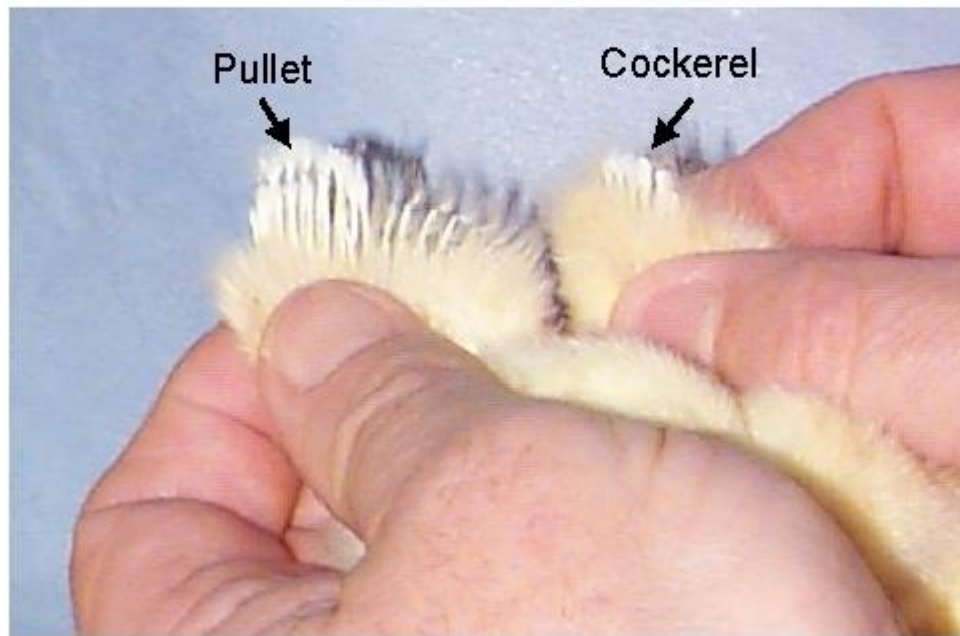
# VENTING METHOD

- Segregating day old chick by examining rudimentary copulatory organ present in males and absent in females
- Difference in size and shape of genital papilla in male and female.
- Also can be done by examination of testis and ovary by a small light into cloaca
- Feather venting also done



# FEATHER VENTING

## Comparison of Pullet and Cockerel One Day Old Chicks



# SEX-LINKED MATING

- Sex linked characters
- Colour of plumage- any sex linked character - taken

# VACCINATION

- Prevent diseases
- Before birds 4 months old
- Fowl pox vaccine-3 & 7 days of age
- Fold of skin on the flank-in front of joint between femur and tibio-tarsus
- Brushing cloacal mucous membrane
- Applied in feather follicle
- Stick method-puncture on skin

THANK YOU

