Preventing Pecking and Prolapse in Layer Birds: Managemental Strategies

Presented By

Dr. Kinsuk Maity

Assistant Director

Animal Resources Development

Government of West Bengal

What is Prolapse and or Pecking?

- **During oviposition the lower portion of the oviduct is temporarily everted (turned inside out) momentarily through cloaca along with the egg. This allows the hen to lay a very clean egg. Sometimes the oviduct will not immediately retract once the egg has been laid. This condition is known as prolapse. If not noticed immediately, other birds will pick at the protruding material, often causing hemorrhage, infection, and death if quick action is not taken**

Economic Loss

- Approximately 10 to 15% Mortality occurs due to pecking and or prolapse resulting huge economic loss.
- Major mortality occurs during entire laying period where major investment has already been done.
- It is a Managemental error rather than a Disease.

Factors responsible for Prolapse and or Pecking……

- **Body weight at 5th weeks of age.**
- **Uniformity at 16th weeks of age.**
- **Unbalanced feed ration.**
- **Duration as well as Intensity of Lighting.**
- **Faulty Debeaking.**
- **Over Crowding**

Factors responsible for Prolapse and or Pecking……

- Change of Social Order.
- Enteritis.
- Hormonal Imbalance.
- Worms.
- Salt Deficiency.
- Lysine Deficiency.
- Methionine Deficiency.

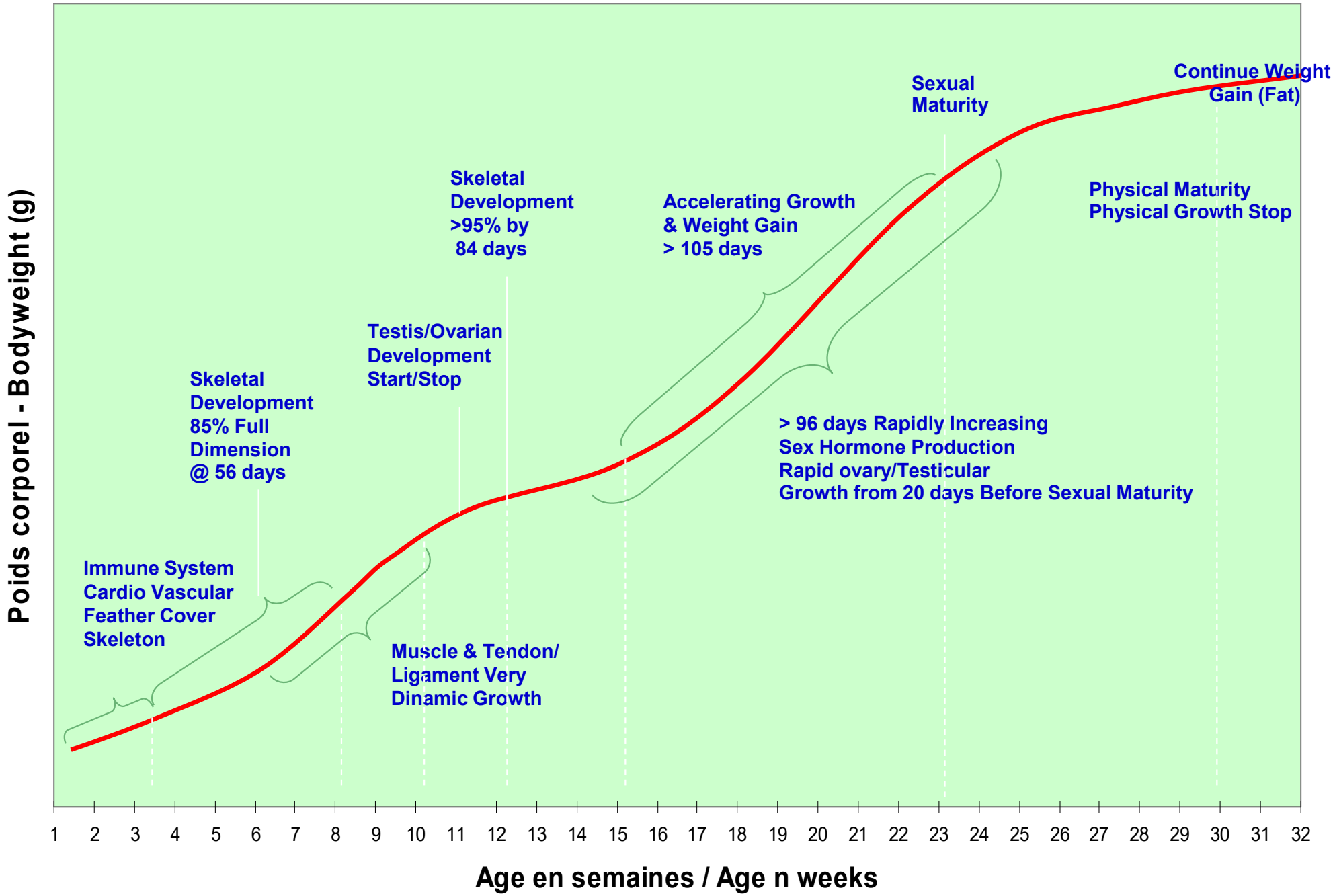
Body weight at 5th weeks of age

- Organ System development(Gizzard, Liver, Intestine).
- Immunesystem Development (Bursa & Thymus).
- Skeletal Development (Body Frame).
- Feathers, thermoregulatory systems & vital organ development.

Body weight at 5th weeks of age…

- Different management tools available for improvement
- Basis for a good start and performance later on
- Skeletal development dictates the body weight of sexual maturity.

Physiological Development



Uniformity at 16th weeks of age

- **Over Weight Birds.**
  1. **General Muscle Weakness.**
  2. **Tendency to Lay Large Size Eggs.**
  3. **Excessive Fat around the Reproductive Organs.**
  4. **Reduces Elasticity of Oviduct & Vent Muscles.**
  5. **Too much Pressure to Lay Eggs.**

Uniformity at 16th weeks of age….

- Under Weight Birds
    1. Poor Body Frame Development.
    2. Immature Reproductive Tract.
    3. Poor Elasticity & Strength of Reproductive Tract.
    4. Unable to retract Reproductive Tract after Laying.

Weight at 5 weeks essential for performance during entire laying period

Correlations between rearing results and the results in the laying period

	Body weight 5 weeks	Body weight 10 weeks	Body weight 16 weeks	Uniformity 16 weeks
Early maturity (% HD prod. 20-24 wks)	+++ .63	+++ .59	++ .39	0
Prod. persistency (% HD prod. 68-72 wks)	++++ .82	0	0	++ .46
Liveability 60 wks	+++ .71	0	0	++ .40
Liveability 72 wks	+++ .65	0	0	+++ .61
Production per hen housed:				
- until 60 wks	++++ .83	++ .30	0	+++ .54
- from 60-72 wks	++++ .94	0	0	+++ .60
- until 72 wks	++++ .93	0	0	+++ .72

Unbalanced Feed Ration

- Insufficient Calcium:
  1. Poor Muscle Tone.
  2. Longer Oviduct Retraction Time.
  3. Prolapse occur.
  4. Longer the Duration of Prolapse.
  5. Pecking by other Birds.
  6. Irreversible Damage.
  7. Mortality occur.

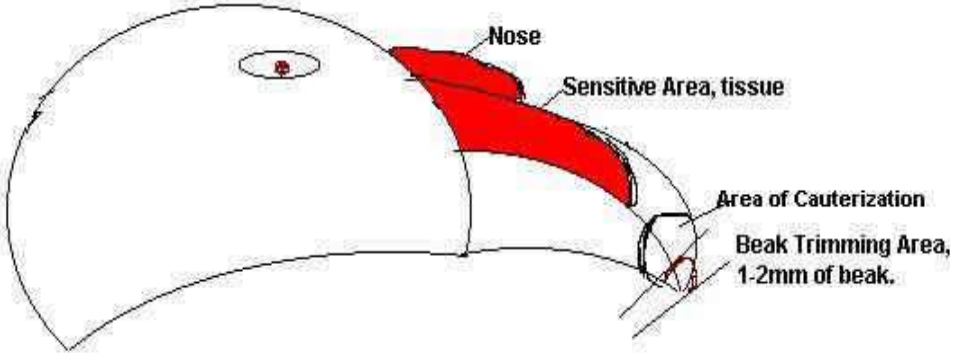
Duration & Intensity of Lighting

- High Light Intensity:
  1. More likely to see & be attracted to the everted Oviduct.
  2. Pecking by other Birds.
  3. Irreversible Damage.
  4. Mortality of Birds.

Duration & Intensity of Lighting…

- Increased Duration of Light:
  1. Erratic Ovulation.
  2. Double Yolked Egg produced.
  3. Strech & Weaken the Cloacal Muscle.
  4. Oviduct remains outside the body for Longer Time.
  5. Pecking by other Birds.
  6. Mortality of Birds.

True or Faulty Debeaking



A proper Beak Trimming job must not enter the sensitive area. It is only used to take of the tip of the beak and no more. There are very few nerves in this Area, but there are a lot of nerves in thesensitve areas. If Beaking is done such that the burn affects the Sensitive Area under the nose, then the bird will develop a bulbous beak, your picture, will be in a lot of pain, and could have difficulty in eating. The hot knife method not only removes and cauterizes, but also creates a zone above where the cut was made, and this area is also dead tissue. This does not occur with the electric arc method.

True or Faulty Debeaking

- Insufficient Debeaking causes increased Pecking tendency of Birds having Prolapsed Reproductive Tract resulting Mortality.
- Faulty Debeaking causes less Feed Consumption Resulting Under Weight Birds with Poor Uniformity.
- Insufficient Blade Temperature also causes Faulty or Insufficient Debeaking.

Overcrowding

- Cages Having Two or Three Birds are Less Prone to Pecking and Prolapse than Four or Five Birds in Cages.
- The Packer Birds gets more opportunity to Pick other Prolapsed Birds resulting Mortality.
- Less the No of Birds in Cages, Less chance of Pecking.

Enteritis

- Enteritis may be due to Viral, Bacterial, Toxins etc. Sources.
- Increased Intestinal Movement.
- Less Nutritional Absorption.
- Less Body Weight gain in Proper Time.
- More Prolapse & Pecking.

Hormonal Imbalance

- Light stimulates anterior pituitary gland in hypothalamus resulting release of various hormones like Growth hormone (GH), Gonadotropin Releasing Hormone (GnRH), Thyroid Stimulating Hormone (TSH), Parathyroid Hormone (PTH) etc.
- Growth hormone is responsible for growth and development various systems within the body like musculo-skeletal system, Immune system, cardio-vascular system, respiratory system, genital system etc.

Hormonal Imbalance….

- Light stimulation causes release of GnRH from hypothalamus, resulting release of Follicle Stimulating Hormone (FSH) and Leutinising Hormone (LH) from anterior pituitary gland.
- FSH acts on ovary and cause release of ovum from the graffian follicle and also sperm from testes.
- LH acts on testes and causes release of testosterone and cause release of estrogen and progesterone from ovary.

Hormonal Imbalance….

- TSH stimulate thyroid gland and causes release of calcitonin hormone which stimulates calcium deposition in the bones.
- TSH also stimulates parathyroid gland and causes release of parathyroid Hormone (PTH) which increases blood levels of calcium.
- PTH also increases kidney's re-absorption of calcium resulting increased blood calcium level.
- PTH also activates vitamin D which enhances calcium absorption from food in the intestine.

Other Factors……

- **Salt deficiency,** Lysin deficiency, Methionine deficiency and worms loads are also responsible for pecking.

Managemental Errors in Flocks with Poor Uniformity

Under Weight Birds	Standard Weight Birds	Over Weight Birds
Light Stimulation not Required	Light Stimulation Required	Light Stimulation Required in Advance
Grower Feed Required	Pre-Layer Feed Required	Phase-I Feed Required
Less Calcium Required	Standard Calcium Required	More Calcium Required
Poor Body Framed Birds are more Prone to Prolapse	Less Prone to Prolapse	Excess Fatty Birds are more Prone to Prolapse
More Susceptible to Disease	Less Susceptible to Disease	More Susceptible to Disease
Sexually Immature, not ready for Light Stimulation	Sexually Mature, ready for Light Stimulation	Sexually Matured

Control Measures

- Before thinking Prolapse control, Every body must know that **"THE WEIGHT IS AGE"** but opposite is not true.
- After considering this idea prolapse can be controlled easily.

Control Measures….

- Follow Standard Feeding Programme to Bring the Pullet at the Point of Lay with a well developed Frame and no excess Fat.
- Standard Lighting Programme which Restricts Maturity until the Pullets are Physically Ready for Egg Production.
- Avoid Setting Stage of Erradic Ovulation to Avoid Double yolked Egg Production.

Control Measures…..

- Maximum Managemental care must be taken to achieve 5th week body weight and good uniformity at 16th weeks of age.
- The Packer Birds must be identified and separated as early as possible and kept at the upper line of cages and if possible 3rd debeaking may be done.
- The packed birds must be kept at the lower line of cages and mortality may be controlled by restricted feeding.

Control Measures……

- In more sofisticated way, the supervisor must be search the blood stained eggs through out the shed particularly during peak production.
- After getting the egg, the packer and packed birds must be kept separately and treat them accordingly.
- In enteritis, after treatment high fiber containing diet may be given to control intestinal movement.

Control Measures…….

- Movement or shifting of birds from cage to cage must be controlled.
- Nutritional deficiency must be full-filled.
- Routine filling of cages must be practiced to get good uniformity.


THANK YOU