

Unit B: Egg Production

Lesson 3: Natural Poultry Reproduction

Terms

- **androgen**
- **hormone**
- **luteinizing hormone**
- **oestrogen**
- **progesterone**
- **sperm viability**

I. Reproduction in poultry is different from other mammals.

A. In mammals, the young are carried inside the female's body.

1. Poultry produce eggs as a result of fertilization.
2. The egg then develops outside the body.
3. Hens will still produce eggs if they are not fertilized, however the egg will not produce a chick.

B. Male birds sometimes conduct a mating dance around a female to attract her attention.

1. Some species of birds, like turkeys have very colorful feathers in order to attract a mate.
2. If the female does not take interest in the male bird, he will chase her down.



C. The reproductive cycle begins with the male placing the sperm into the oviduct of the female.

1. The sperm is deposited from the male onto the vent of the female.

D. Next, the male papillae deposits sperm in cloacal wall of female.

1. The sperm move up the oviduct to the funnel where the egg is fertilized.



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E. These sperm cells remain in oviduct 2-3 weeks after mating.

1. This allows for the females to produce fertilized eggs even if they are apart from the male.
2. The sperm have full fertilizing ability for about 6 days.
3. After then the ability of sperm to fertilize an egg is decreased.
 - a. This is called **sperm viability**.
 - b. After the 10th day of deposition, the sperm have 50% viability.
 - c. That moves to 15% 19 days after deposition.

II. Reproduction in all animals, including birds is regulated by hormones.

A. The sexual behavior of animals is regulated by the secretion of hormones.

1. If the hormones are not properly secreted the animal may not be able to reproduce.
2. In poultry, hormone production and therefore egg production, is stimulated by day length.

B. A hormone is a chemical substance that has a specific effect on an organ or in some cases all body tissues.

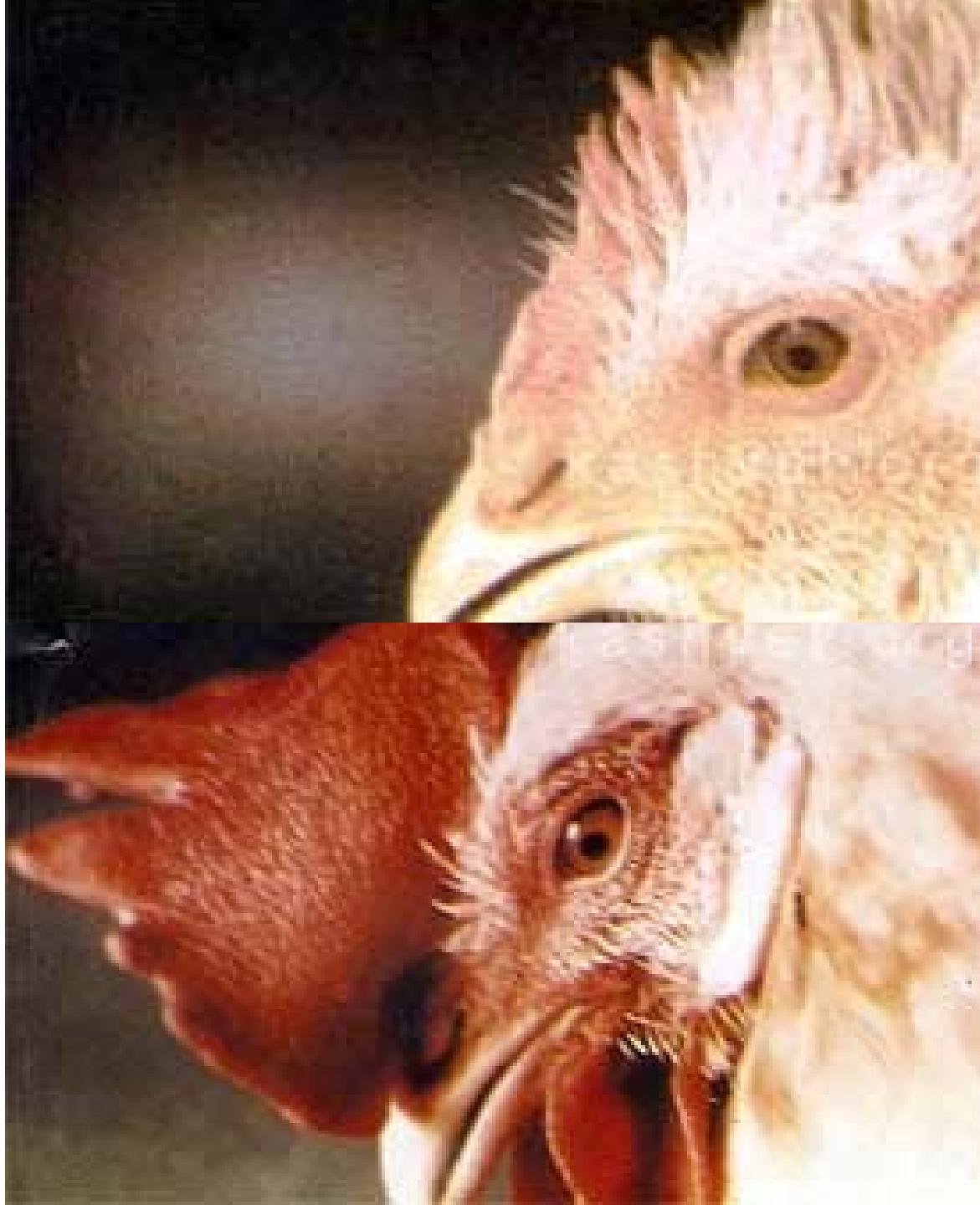
1. Hormones produced include androgen, oestrogen and progesterone.

2. Androgen causes comb growth and condition, and has a function in the formation of albumen.

3. **Oestrogen** causes the growth of the female plumage, mating and nesting behavior, oviduct development together with the nutrient supply to the ovary/oviduct for egg formation.
4. **Progesterone**, with androgen is involved in the production of albumen and the carriage of the message to the pituitary gland to release **luteinizing hormone**.
 - a. **Luteinizing hormone** triggers ovulation.

C. The female reproductive system remains dormant in the young chicken and growing pullet until she reaches the age when these organs start to prepare for the normal production of eggs.

1. One of the first signs of her developing maturity is the change in the comb development.
2. This organ starts to grow and to take on a vivid red hue as the hormones produced by the now awakening ovary start to have an effect.



III. Reproduction can fail for many reasons.

A. The general physical condition of an animal can play a major role in reproductive ability.

1. The size and shape of the bird has an effect on the ability to reproduce.
2. If the bird is too fat or too thin it may not become pregnant.
3. Their body will not have enough energy to produce an egg.
4. Providing proper nutrition and exercise can help prevent weight issues.

B. If the bird is in poor physical condition it can have trouble giving birth.

1. This could include diseases and infections or other physical ailments.



C. Infections can be a major problem in reproductive failure.

1. Infections in birds can affect reproductive organs.
 - a. These infections may prevent pregnancy.
2. Other diseases may cause a spontaneous abortion, or a miscarriage.
3. If a bird with a disease or infection does become pregnant the resulting chick may be very weak or may not live.
4. Infections of the uterus are the most serious.
 - a. These infections are almost always fatal to embryos or fetus

Review/Summary

1. What are the steps of natural poultry reproduction?
2. What is the role of hormones in poultry reproduction?
3. What can cause reproductive failure?