SCOOP from the COOP

Hensall CO-OP

ANIMAL NUTRITION

POULTRY NEWS & UPDATES

BURSAL GLANDS

By: Courtney Ridder, Poultry Specialist

The bursa of fabricius, or bursal gland, is a lymphoid organ that is unique, as it is only found in birds. It is a small sac full of tightly packed folds of tissue (Fig. 1) located just beneath the base of the tail, attached to internal side of the cloaca (Fig. 2). This small organ plays a major role in the bird's immune function and can be used as an indicator of health challenges.

Figure 1

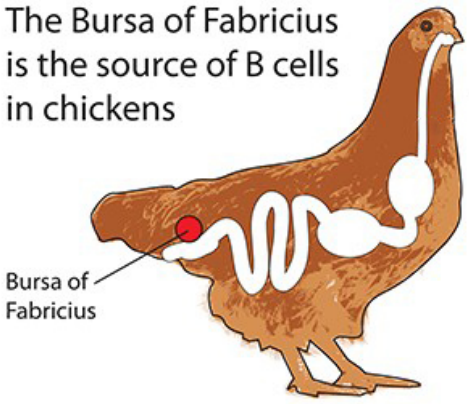

Figure 2

The function of the bursal gland is to produce B-cells. B-cells are a type of white blood cell that have receptors that bind to specific pathogens and initiate an antibody response. The follicles of the bursal gland are the site of diversification of the B-cell antibodies, which allows for it to target different pathogens that enter the body and trigger an immune response.

Gumboro disease, also known as Infectious Bursal Disease Virus (IBDV), impairs the B-cell system and decreases the development of antibodies. This leaves the birds with a supressed immune system and vulnerable to secondary infections. IBDV infections will result in reduced growth performance and increased morbidity and mortality.

You may have noticed your vet making an incision just above the tail to check the bursal size and appearance during post-mortem exams. A healthy bursal gland is about the size of a 25 cent coin from 4-8 weeks of age, and then will decrease in size slowly until nearly disappearing at sexual maturity. During an IBDV infection, the bursal gland will first swell to 2-3 times its normal size, then will atrophy to much smaller than its original size due to depletion of B-cells. In figure 3, you can see the range in size of bursal glands removed from 5-week-old birds. The tissues are arranged from larger, healthy bursas on top to small, atrophied tissues on the bottom. These changes in size can make it very difficult to determine infection based solely on size alone and should be accompanied by a veterinary examination and laboratory testing of blood or tissue samples to confirm the diagnosis.

It can take up to 35 days to fully recover from an IBDV infection, which is very significant to our broiler producers as birds are only in the barn for

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35-50 days, depending on the target weight. The duration of recovery depends on the virulence of the strain and the quantity of the virus. The attenuated vaccine strains available have a low virulence and a controlled dosage to allow the immune system to develop immunity, but recovery only lasts about 7 days.

The bursal gland is an important part of the bird's immune system and the best way to protect your birds is to vaccinate each flock and do a thorough clean between flocks. Your Hensall Co-op Sales and Service Reps work closely with veterinarians to develop a custom vaccine program for each farm's individual needs and can also facilitate flock health checks with a veterinarian if desired.

References:

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Figure 2 Credit: https://www.bethyl.com/content/b-is-for-bursa