

Maternal Antibody Transfer

Vulnerable day-old chicks may not be so vulnerable after all, due to maternal antibodies. Maternal antibodies protect newly hatched chicks from diseases they may be susceptible to in the first couple weeks of life. These antibodies are passed on from the hen to its progeny, therefore the healthier the hen, the healthier the chick will be. For this reason, it is recommended to consult a poultry veterinarian to create a good vaccination program for not only the chick, but the breeder hens as well.

Maternal antibodies are comprised of many different types of immunoglobulins, but the two main classes are IgG and IgA. IgG is the most effective, being deposited in the yolk and absorbed into the circulatory system by the chick. The less defined IgA is deposited in the albumen, which is swallowed by the chick during formation and ingested, acting locally in the respiratory and intestinal tract. Although IgG offers more generalized protection, IgA may act as a major defense against Infectious Bronchitis Virus and Newcastle Disease.

Chicks with good maternal antibody fortification are distinguished by very high uniform titers and the only way to have high uniform titered chicks is to start with high uniform titered hens. Regrettably, even with high uniform titered flocks, ten percent of the chicks may not carry any antibodies. Even more compelling is that when the flock titers become less than adequate, the number of chicks without antibodies increases dramatically. For example, in a flock of 25,000 it is possible to have 2,500 or more birds without any maternal antibodies to protect them against disease. These figures are stunning, yet preventable if you have a good vaccination program that is started early and is effective.

It is important to remember that the breeder flock is essentially interconnected with the final outcome of the chicks. Knowing that high titered hens produce high titered chicks, it becomes obvious that the goal should be to make the hen titers as high and as uniform as possible. Unfortunately there are no magic numbers to aim for. Titres vary on many factors, including location and history. It is useful to keep track of your own breeders and develop your own standards based on

A killed-type vaccine enhances the immune response by increasing the stability of the vaccine and stimulating the immune system longer.

Certainly maternal antibodies in chicks are extremely important, but having a successful vaccination program also plays a key role in keeping your birds free from disease and decreased productivity associated with illness. Even though vaccination is important, timing is key. Chicks vaccinated while having high levels of maternal antibodies produces vaccine failure, due to neutralization. It is also important not to vaccinate too late, which leaves the chick virtually defenseless.

Even with the most advanced and effective vaccination program, it will be unsuccessful if the vaccine is not administered properly. Inappropriate administration is the most common cause of vaccination failure today. Live vaccines are easily killed and mishandled, which will inactivate the vaccine making it useless. Live vaccines used in drinking water can be easily destroyed if they are mishandled or the water sanitizers have not been removed. Intramuscular and subcutaneous injections may also fail if the vaccine is not injected into the appropriate vaccination site.

Regular evaluation of your vaccination program is essential in ensuring that it is successful, remembering that environmental and nutritional factors must also be taken into account. To aid in the achievement of your vaccination program it is important to administer the vaccine as recommended, protect vaccines from heat and direct sunlight, handle vaccines with extreme care, and dispose of all opened containers to prevent the spread of disease to other poultry.

The success of any vaccination program for the security of your flock is dependent on the time and effort that you put into it. It is also important to not overlook the importance of having effective and enforced biosecurity and good farm management. Collectively, your flock and the future of your flock will be well protected against the common poultry

performance to find out what is high for you.

diseases.

High and uniform titers in your flock can be achieved by effectively priming with good quality live vaccines. Live vaccines give the chick a broad range of protection, exposing them to all stages of the virus. Priming stimulates the chick's immune system so that it will respond successfully to the killed-type vaccines administered.

References

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