

Natrocine Layer Assist

Background

The most important factors that dictates the financial viability for the egg producing farmer is not only a stable, **once a day production of eggs**, but also the overall albumin index (AI) of the egg. The AI is measured as the so called Hough Unit Score = Albumin Height / Albumin Diameter x 100. The normal range is between 70-90%. Unfortunately the mean average these days is below the 60% mark. The most important factor that controls the albumin is represented by the homeostatic physiological ability of the liver to produce albumin. This function is undermined by fatty infiltration of the liver that not only suppresses albumin production but also directly influences the weight of the individual egg.

Pathogenesis

An important factor that influences the stable production of eggs is the flock's ability to cope with a new break of Newcastle Disease. Other important factors are:

1. Risk factors associated with *Salmonella enterica serovar typhimurium* as part of a zoonotic infection
2. High pulmonary arterial blood pressure and lung and liver particle retention in chickens
3. Maternal dietary iodide supplementation on glycogen content of organs
4. Effect of dietary conjugated linoleic acid on the quality characteristics of chicken eggs during refrigerated storage

Research show that a big percentage of the pathogenetic organisms found in newly laid eggs are **vertically** transferred from the parent stock. In the parent stock a dormant infection occurs particularly in the macrophage phagocytic cells in the bone marrow. **This is measured by** the so-called DMII (Dormant Macrophage Infestation Index). These dormant pathogens are activated during episodes of heightened stress and are vertically transferred to new eggs during its path through the oviduct.

These organisms have a tendency to attach to the membrane of the red blood cell. This creates an immune response with the production of antibodies against this red blood cell complex and ultimately leads to the destruction of the red blood cell cytoplasmic membrane and loss of haemoglobin from the cell and ends in the clinical symptom of gross anaemia. Free lying nuclei now aggregate to form micro-emboli that lodge in the small capillaries in the lung bed and thus the reason for the symptom of a high pulmonary arterial blood pressure with secondary right and later left ventricular failure. Furthermore, due to the massive destruction of red blood cells, more biliverdin, as part of the bile cycle, is produced and accounts for the occurrence of a massive fully packed gall bladder.

Fatty infiltration is typically seen in both the liver as well as the bone marrow. In the bone marrow it suppresses the newly formed red blood precursor cells and therefore results in less red blood cell production. In the liver the very important glycogen production for acute energy is **undermined**, as well as **the production** of albumin.

Pharmacology

Natrocine Layer Assist is a natural organic remedy that was developed in South Africa in line with the new EU regulations that exclude the use of routine antibiotics and growth stimulants. The product primarily activates the inherent immune response and **works** in the following areas:

1. Activates the macrophage with dormant infections in the bone marrow to eliminate invasive agents by directly activating both cellular and humeral immunity. The end result is an inhibition and elimination of the dormant infection with ultimately fewer vertically transmitted pathogens to the newly formed eggs.
2. Less fatty infiltration in the bone marrow and the liver by mobil-

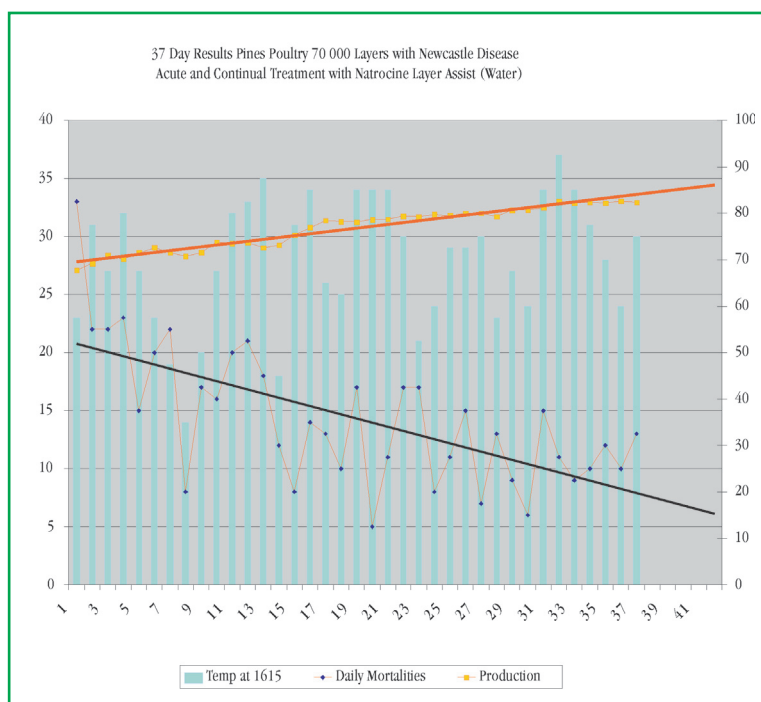


ising **the** fatty infiltrates and breaking it down and rebuilding it to protein. In the bone marrow, more red blood cells can now be produced not only because of less fatty infiltration but also because of the stimulating effect of Interleukin II that is produced by the activated T-lymphocytes as part of the immune stimulation. These T-lymphocytes also produce interferon, the only known molecule that can actively inhibit and kill a virus. The immobilisation of fat from the liver results in a higher production of albumin, which equates to both an improved AI and egg size. It also ensures a better glycogen production as part of the energy cycle.

3. Active bursa stimulation synonymous with antibody production through inherent natural immune mechanisms. Infections can now be eliminated without the addition of large quantities of antibiotics - as demanded by the EU regulations.

Results

The below graph shows results on 70 000 layers. Newcastle Disease was still breaking when treatment with Natrocine Layer Assist started. What is encouraging is the dramatic turn around showing both an acute and preventative immune response.



Recommended dosage

Dissolve in the drinking water at a rate of 2 grams per 100 kgs live weight per day for three weeks prior to egg laying age, thereafter a maintenance dose of 1 gram per 100 kgs live weight throughout the productive period of the bird. In acute cases of disease such as Newcastle the dose can be increased back to 2 grams per 100 kgs live weight per day noting that it is not possible to overdose due to the natural components of the product.

Natrocine Layer assist (registered as Immune Assist # V20134 RSA Act 36/1947) is a product developed and registered by Welbedagt Research & Development in George, South Africa. The product is sold and distributed by Natrocine (PTY) Ltd as Natrocine Layer Assist.