

# The combined action of rehydration and immune stimulation in broilers

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In poultry production, the first week (particularly the first 36 hours) is very important to ensure the performance of the flock. The hatched chicks are often subjected to many stresses which reduce their early survival rate as well as their final performance (mortality, feed conversion ratio (FCR), final body weight).

Moreover, the period up to 15 days of age is critical for broilers: immunity level is at its lowest. Therefore digestive and immune systems management represents an essential way to maintain health and performance.

## Algae based extracts

Products such as SeaLyt and Searup from the Algo-Bio range are formulated on algae-based biological extracts mainly composed of marine sulphated polysaccharides (MSPs). These molecules, present in algae, have different structural compositions and biological activities depending on their origin (brown, green, red seaweed). They are specifically selected for each product according to their properties.

SeaLyt decreases digestive troubles, rehydrates and stimulates appetite during

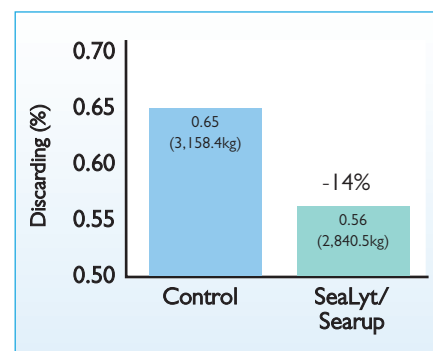
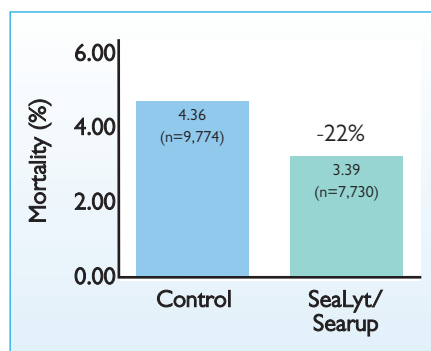


Fig. 1 and 2. Average mortality and discarding rate of broilers using (SeaLyt-Searup) or not (control) Algo-Bio prophylaxis.

the first hours of life, whereas Searup strengthens natural defences and restores possible imbalances through its global action on the immune system.

To demonstrate the benefits of the combined use of SeaLyt and Searup, a trial was carried out from November 2013 to February 2014 on over 452,200 day old chicks in Brittany, France, in an area with high sanitary pressure. Three integrators participated in this study.

The 452,200 broilers (average of 28,262 broilers per building) were distributed in 16 houses: one control and one test house in each of the eight farms that participated.

Mainly Cobb and Ross birds were used with an average age at slaughter of 42 days.

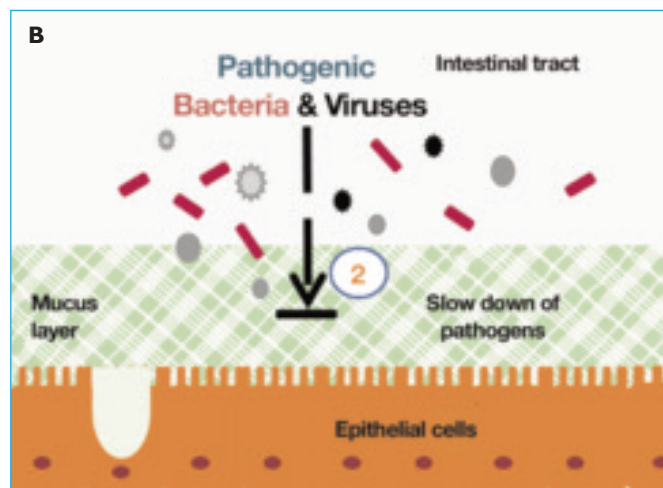
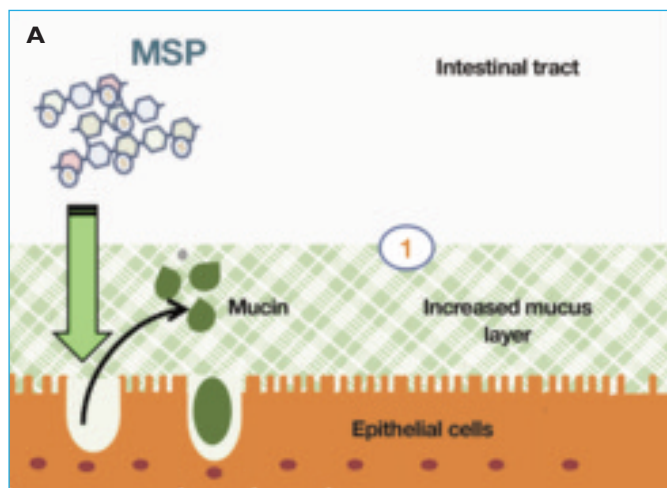
The density was 22.5 chickens/m<sup>2</sup>. Some 224,174 broilers (control group) received the standard prophylaxis of the farm and 228,028 broilers (test group) received Algo-Bio supplementation through the drinking water, which consisted of one spark of 45g of SeaLyt in 500L at 24 or 36 hours of life, and one spark of 80g of Searup in 1,000L the day before and two days after Gumboro vaccination (day 15).

Data on mortality, live weight at slaughter and number of discarded carcasses were collected. Daily weight gain (DWG) and FCR were also calculated.

The results of this trial showed a global improvement of zootechnical performance

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Fig. 3. Action of MSP mucin on the intestinal epithelial barrier function. A) Restorative action B) Protective action.



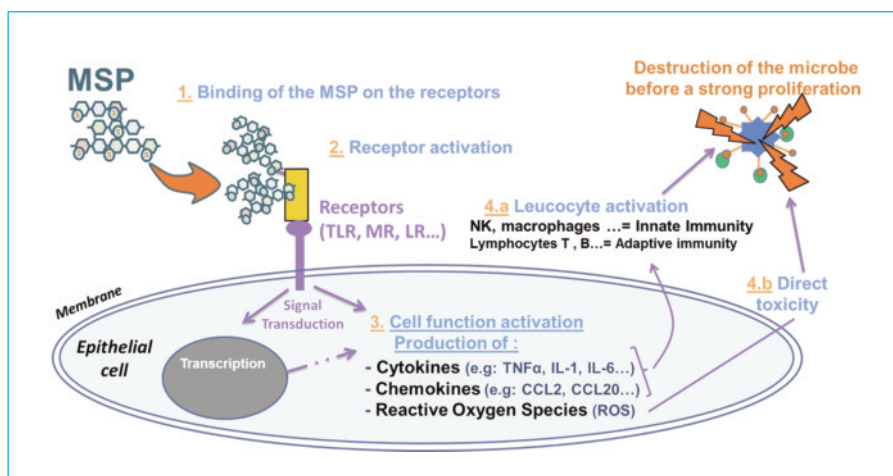
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in the SeaLyt-Searup group. Mortality (Fig. 1) and discarded carcasses (Fig. 2) were decreased (-22% and -14% respectively). The DWG (57g/d) and FCR (1.77) remained unchanged.

These improvements result from the complementary actions of SeaLyt and Searup on broilers.

Indeed, SeaLyt allows rehydration and reduces digestive troubles. SeaLyt is based on three major ingredients: MSP mucin, dextrose and lactose, which quickly provide metabolisable energy, and electrolytes which have impact on rehydration.

The MSP mucin induce mucin secretion (one of the intestinal mucus glycoproteins)



**Fig. 4. MSP immunomodulating activities.**

(Fig. 3A) and consequently increase the intestinal wall defence (Fig. 3B). This helps to preserve intestinal wall integrity and to limit digestive troubles.

Mortality during the first days of life decreases and feed consumption is stimulated. Broilers have less digestive troubles and the litter remains of good quality longer, contributing to a decrease in impaired locomotion and poor leg health. As a consequence, SeaLyt also contributes to the well being of broilers during brooding.

On the other hand, Searup is administered at around 15 days, around vaccination. This period is particularly difficult for broilers. This is why stimulation of the immune system is essential to provide the best possible protection. Searup, which is composed of a complex of algae extracts (MSP), vitamins (B-complex, A, D3) amino acids and fatty acids, addresses this challenge perfectly.

The global stimulation of the immune system allows invading pathogens to be detected and to respond to it through the production of cytokines, chemokines and Reactive Oxygen Species (ROS) which will contribute to the destruction of the pathogens before their proliferation (Fig. 4).

Broilers are consequently less susceptible to most infectious challenges leading to a lower mortality rate and a lower discarding rate as observed in the study.

According to this study, managing risk periods of broiler production with the use of SeaLyt and Searup, two natural products, seems to be an efficient way to maintain health and performance in particular at the setup of the flock and around 15 days of age. SeaLyt and Searup were given during two periods only: early in the first week and around vaccination.

This trial shows that whatever the farm management and facilities, Algo-Bio prophylaxis is easy to implement and successfully decreases mortality and discarding rate, while maintaining growth performance and increasing the farmer's profit (ROI estimated to be 1/4).



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