High performing chickens need a boost for intestinal health

Animal performance has been highly increased during the second half of the 20th Century. This is mainly related to genetic changes, but also optimising feed and housing conditions played a role. The lifespan of broilers up to a body weight of 1,800g decreased from 100 days in the 1950s towards 30 days in 2021. This fact emphasises that the relative importance of the first week of life, as a percentage of the total lifespan of a broiler, has increased enormously.

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In young chicks a lot of physiological, nutritional, and environmental changes take place. These changes are the most striking in the villi and the weight and functioning of the small intestine. The relative weight of the small intestine (as percentage of total body weight) and the height of the villi increase fast in the first week after hatching.

After the first week the relative weight of the small intestine decreases gradually. However, the length of the villi still increases. A well-developed small intestine is able to absorb nutrients and to prevent harmful bacteria and toxins from entering. The body increases the small intestine functions as the largest immunological organ in the body, thereby taking care of the general health of the animal.

The role of amino acids and feed intake in the first week

At low feed intake levels in the first week after hatching, the development of the small intestine of chicks that have not eaten enough is slower compared to chicks that have a good feed intake. The relative weight of the small intestine and the height of the villi are stimulated by a high level of available protein in the feed.

Amino acids, available to the chick in the first week, are a powerful stimulator for starting the growth of the small intestine. In young chicks, the relative weight of the small intestine is associated with a higher growth. Providing sufficient amino acids in the first week after hatching (day 1-6) is therefore very effective in improving broiler performance. These effects of available protein and feed intake levels are very clear in the first two weeks after hatching.

Nutrition via the drinking water

Nutritional support via drinking water for young chicks in their first week after hatching is a useful tool to stimulate the development of the small intestine and to minimise the negative effects of a low feed intake.

At Kanters, the importance of focusing on the development of the intestine in young animals is very well understood. Product development at Kanters is driven by studies and experiences within this field of optimising intestinal health and thereby technical performance.

Nutrition via drinking water is the key to success, especially in young animals. It is important to prevent situations in which there is a shortage in nutrients, the so called 'nutrient supply gap' (see Fig. 1).

Broilers in the first week after hatching need a lot of nutrients (available protein) for the development of the small intestine. Due to low feed intake the development of the small intestine will be delayed and broiler performance is at risk.

Stimulating chicks to eat and providing extra nutrients via the drinking water will result in healthier and better performing broilers. Pro-Mac supports young chicks to make a good start after hatching. Pro-Mac is a mixture rich in vitamins, minerals, amino acids, glucose and organic acids.

Water as a key nutrient

Clean drinking water is essential for chicken health and plays a key role in chicken performance. Water is the nutrient of highest importance, making contaminated water a serious threat to animals and profits. While poultry farmers are critical about the quality of the feed, the quality of drinking water often does not receive the attention it deserves. Frequent cleaning and monitoring of the drinking system is necessary to maintain a good quality drinking water.

When products like antibiotics, vitamins and acids are added to the drinking water this becomes even more important. Water filters are intended to filter and remove contaminants from the water and therefore prevent blockages and unnecessary wear and tear of equipment in the (drinking) water system.

Quite often you see dirty filters in the corridors of a poultry house. This is an indicator of the pollution in the drinking

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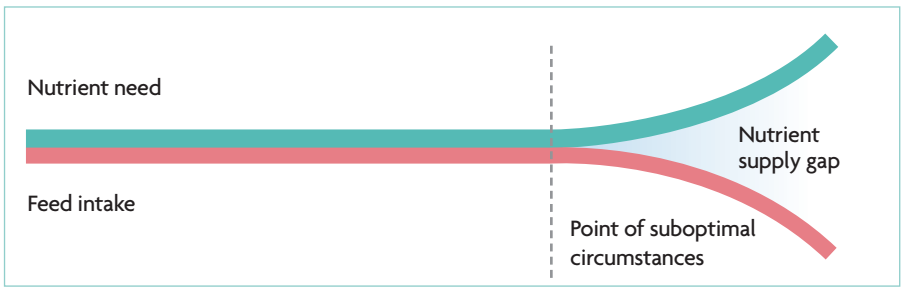
Fig. 1. The nutrient supply gap.



The filter removes contaminants from the poultry's drinking water.

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system. Cleaning your drinking water system on a regular basis is important to avoid blocked drinking nipples.

Dose properly

Almost every poultry farmer has a dosing module for drinking water additives. But the frequency of use differs greatly and the user experiences are also very variable. The benefits of drinking water additives are certainly clear. The reduction in the use of antibiotics also means that dosing devices are increasingly used for applications other than medication.

More often the dosing pump is used for adding acids to the drinking water for salmonella control and drinking water vaccination, for example against IB or Gumboro. To make the application of acids or other additives a success, the drinking water system should be clean and the drinking water should be free of contamination, such as manganese, iron, and vaccine residues.

When the basis is not good and the drinking water is polluted there is an extra chance of taste abnormalities and reduced water intake. Interaction between residues in the drinking system and new additives can lead to blocked drinking nipples.

When using a dosing pump there are two ways of applying the liquid additive: direct or via a pre-solution. Directly from the can is the best way to avoid mistakes in a calculation. Making a pre-solution, calculate the daily water consumption of the chickens to know how much they drink and how often a new pre-solution has to be made.

In case of an acid, if the pre-solution bucket is empty, the pH of the drinking water rises to the pH of the drinking water without acid. This is perfect for growth of bacteria and biofilm with a high chance of blocked drinking nipples.

Save 25% on your drinking water additives

With regular dosing equipment, there is a common problem of failed or incorrect dosing in cases of low water uptake, for example in housing with young animals. The accuracy of the water meter is a very important point of attention. That is why the best dosing systems are equipped with a volumetric water meter which already starts reading at a water intake as low as one litre per hour.

The pressure in the water lines can vary greatly due to, for example, higher water intake by the animals in the housing unit after feeding or design errors in the drinking water system. This will lead to significant variations of up to 25% with a regular dosing module. Use of a pressure control valve will take care of this, as then your dosing system constantly delivers the right amount of liquid, regardless of the operating pressure.

The Optimus dosing system from Kanters.

Kanters provides the Optimus dosing module, the ideal solution for automatic administration of liquid feed supplements and cleaning agents to drinking water in intensive and even less intensive livestock farming.

The Optimus offers the possibility to switch to an additive quickly when the animals are suddenly in a stressful situation or when their health is in question. It cannot be said often enough: rinsing and cleaning at a fixed frequency makes or breaks the success of your drinking water additives.

Visual inspection of the rinsing water before and after the addition ensures that you are not 'surprised' by a dirty system. When given the right and necessary attention, drinking water additives have great advantages. ■