

# The first week – getting the best possible start for your chicks

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**T**he early rearing period, the brooding period, is one of the most critical stages in a young bird's life be it a chicken, turkey, duck or any other commercially reared bird.

The first critical stage is to ensure the quality of the chicks when they arrive at the farm, which is the responsibility of the supplier hatchery, through the correct management of the breeding stocks and the hygiene during the hatching process. After this stage it is up to the farm to maximise the genetic potential of the stock to be reared.

## Quality factors

Many factors impact on the quality of the birds reared; management, nutrition and hygiene. The house should have been well cleaned, disinfected and rested, to give a sanitary break, before introducing the new litter. Depending on the heating system, whole house or spot heating, the house, and litter, should be warmed the day before the chicks are due to arrive.

This also gives time for the water to reach ambient temperature before the chicks arrive. Whilst temperature for young birds is very important, so is fresh air, so it is important to ensure that there is a minimal ventilation in the house to remove dust, humidity and ensure a constant supply of oxygen for the birds.

Water is the most important nutrient for any animal and one of the greatest problems with chicks is dehydration.

Depending on the journey time from the



hatchery it is often beneficial to allow the chicks to drink first on arrival and then introduce the feed once they have all had time to rehydrate.

This also gives the chicks a chance to learn where the drinkers are placed in their own individual locality. Feed quality is also very important in establishing fast growth.

All birds are naturally seed eaters and, as such, are used to eating feed in particulate form. Therefore it is always advisable to give a crumbled, or very small pelleted, feed during the first phase of the diets, ensuring that there is a minimum of fine particles as these may reduce overall feed consumption, and hence growth.

The first week is a critical time as it is during this time that the intestine undergoes a very rapid development along with other systems such as the immune system. It is therefore critical that the birds are able to consume both the energy and protein to enable these systems to develop with no limitations.

The consequences of not achieving this will be felt throughout the life of the bird. In order to aid this development day length is usually extended during the first week to 23 hours, so that chicks can eat and drink whenever they want. This light programme will then be gradually reduced, depending on the type of bird in question, to meet their requirements. In nature once the

chicks hatch many of their requirements are provided by the mother, through taking them to feed and water or by providing heat whenever the chicks get cold.

Another important factor is that during this time the immune system will be developed through acquired immunity by being in constant contact with the mother; thereby being in contact with many bacteria which can be both beneficial and harmful.

## Hygiene is paramount

With modern poultry practices hygiene is paramount and all care is taken to ensure the cleanliness of the hatching eggs and the hatchery process itself.

Equally, the housing the chicks are brought to should be of a high level of cleanliness so the normal exposure to bacteria is severely limited. However, a balanced bacterial colonisation of the intestinal tract is essential for the well being of the bird and also to improve feed efficiency. The vast majority of the bacteria in the intestine of any animal are either beneficial or neutral to the bird's well being, and only a very small proportion of the total bacteria are pathogens.

Many of the bacteria play an important role in the prevention of the establishment of pathogenic bacteria through competitive

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exclusion, specific bactericide excretion or by changing the acidity of the varying regions of the intestine; thereby discouraging replication or preventing colonisation of pathogens.

Therefore, the early establishment of these beneficial bacteria in the bird's intestine results in improved performance in growth, feed efficiency and also some forms of disease protection. However, as already said, modern poultry practices include much effort to reduce the bacterial challenges the chicks face prior to arrival at the farm.

Therefore, a way to introduce beneficial bacteria to the birds, in a controlled way, can help in the rapid establishment of a beneficial gut microflora and this can be achieved through the use of probiotic products during the first days of a chick's life.

Probiotics were first developed in the 1970s to combat a virulent salmonella infection in broiler flocks in Finland.

Since that time probiotics products have developed further with the production of single strain products or multi-species products, using specific bacteria through precise fermentation methods to ensure quality of product. The origin of the varying strains of bacteria can be varied and may not have originated from poultry.

Biomin PoultryStar is a multi-species probiotic which is a combination of five species/strains of bacteria all of which originate from



the intestine of healthy chickens. This gives the advantage of taking bacteria from specific areas of the chicken's intestine, which should result in a more rapid colonisation throughout the entire intestinal tract.

Produced in a water soluble and a micro-encapsulated form for either drinking water or processed feed application, Biomin PoultryStar is suitable for administration to day-old chicks to rapidly develop a healthy intestinal micro-flora.

Application of the water soluble product can be through the drinking water for the first three days of life. Alternatively, on the first day chicks can be sprayed with the probiotics solution either in the hatchery before shipping, or on arrival at the farm before placement. This can be followed up with further three day treatments at the time of feed changes or during times of stress. The micro-encapsulated form can be included in

the starter and grower rations and beyond to develop and maintain the healthy intestinal microflora.

Rigorous testing of Biomin PoultryStar has shown significant improvements in growth rate and feed efficiency in broiler chicks and improvements in the Productivity Index.

With today's demand to reduce antibiotics in poultry meat production performances have been shown to equal or better some standard AGP's currently in use in countries where they are still permitted.

The increase in clostridium infections in poultry remains a serious concern and independently published tests with Biomin PoultryStar have shown a reduction in necrotic enteritis infections and an altering of the onset of gangrenous dermatitis in broilers or the reduction of the colonisation of Salmonella enteritidis in the intestines.

## Conclusion

In conclusion, the first week of a bird's life is probably its most important time and the need to maintain good management practices are paramount to achieving a successful rear of the flock.

However, a rapid establishment of a healthy intestinal microflora through administration of probiotics will further improve performance and potentially reduce the incidence of gastro-intestinal diseases. ■