International Poultry Production's
Poultryhealth BYTES
YOUR OWN REFERENCE SOURCE ON POULTRY HEALTH

010 - Salmonella - I

Introduction

Salmonella is now a very well known word in the language of the consumer because of its association with food poisoning. Unfortunately, since poultry products are often implicated in cases of human food poisoning the words salmonella and poultry are often seen as being synonymous. In the next few PoultryBYTES we will endeavour to give you a sound basic knowledge of this key bacterium.

There is a real link between cases of salmonella food poisoning in man and salmonella in poultry and this was probably best highlighted following the introduction of vaccination and other measures in the UK to counter a particularly notorious food poisoning strain of salmonella, Salmonella enteritidis.

The degree of intensification and integration in modern poultry production, coupled with the international trade in poultry and poultry products, has brought a new dimension to the issue of food poisoning.

History

The genus Salmonella belongs to the bacterial family of Enterobacteriaceae and was named after the American veterinary microbiologist Dr D. E. Salmon. Subsequently, Kauffman and White classified salmonella into more than 2,500 serotypes.

Naming of salmonella

Many salmonella are named after their initial place of isolation, for example, Salmonella hadar, S. virchow, S. livingstone and S. mbandaka.

Other serotypes are named after their activity in animals. For example S. choleraesuis (cholera or fever in pigs) and S. abortusequi (abortion in horses). Incidentally, did you know that typhimurium means 'fever in mice'?

Finally, some of the more recently isolated serotypes are named by a combination of letters and numbers that are a description of their antigenic make up.

The motile salmonella are often called the paratyphoid salmonella and we will focus on these first.

The paratyphoid salmonella

These are ubiquitous in their distribution and infect many animals including domestic animals, wild animals and, of course, man. Infection results in disease or an asymptomatic intestinal or carrier state.

Members of this group are associated with human food poisoning of poultry origin.

Economic consequences

The importance of salmonella infections in economic terms can not be overlooked. They cause disease in poultry, sometimes with significant losses, and this is a real cost to the farmer. If human food poisoning occurs there are losses to the victim in terms of loss of income and to society in terms of lost productivity. In addition, the presence of salmonella in poultry or poultry products hinders international trade.

The presence of salmonella in a foodstuff can influence its acceptability by consumers and this can significantly adversely affect specific businesses. For example, a few years ago salmonella got into a particular baby food in the UK – that particular brand now no longer exists. At the outset of Salmonella enteritidis problems in table eggs the consumption of table eggs was adversely affected.

Nowadays, salmonella and its control and monitoring bring an added cost to most poultry farmers. Finally, in many countries certain types of flocks are slaughtered or they or their products are directed down less financially rewarding channels. A good example of this is the requirement in some countries that eggs from a S. enteritidis flock must be pasteurised.