

French WVPA Congress focuses on topical avian health issues



The XVIIIth Congress of the World Veterinary Poultry Association (WVPA) was recently held in Nantes, France and attracted some 1,300 delegates from 80 countries to listen to four days of technical presentations on avian health. On the next two pages we summarise some of the very good papers that were presented in Nantes. To find out more about WVPA visit www.wvpa.net.

In a review of microbiological safety of poultry products, Gilles Salvat from France shared some interesting statistics on **campylobacter** control from a recent study by EFSA in four EU states. It found that the application of strict biosecurity measures should be accompanied by a 16% reduction in foodborne campylobacteriosis and the Danes suggested that the use of fly nets could cause a 60% reduction.

Not thinning a flock of broilers could cause a reduction in foodborne campylobacteriosis of between 1.8 and 25.0%.

Decreasing kill age to 42, 35 or 28 days was accompanied by reductions of 0-5.0, 0.6-18.0 and 21.0-43.0% respectively and reducing the level of caecal contamination by 1 log₁₀, 2 log₁₀, 3 log₁₀ or 6 log₁₀ reduced foodborne campylobacteriosis by 48-83, 76-98, 90-100 or 100% respectively.

Fabienne Rowe and colleagues reviewed the effect of simultaneous administration of rHVT-F (**Newcastle Disease**) and rHVT-H5 (**Avian Influenza**) vaccines on the development of immunity against both diseases. They concluded that maternally derived antibodies delayed, but did not prevent, the onset of vaccinal immunity.

The interference was lower than that seen with classical vaccines but the simultaneous application of these two vector vaccines did not add any extra delay to the development of immune responses. It was concluded that the observed interferences were acceptable, but should be taken into account depending on local epidemiological conditions.

Filip van Immerseel and colleagues took a refreshing look at **necrotic enteritis**. When it comes to the aetiology of necrotic enteritis, *Clostridium perfringens* is viewed as an opportunistic pathogen but the presence of this bacterium on its own is not enough to cause necrotic enteritis. Key risk factors favouring the development of necrotic enteritis include an intestinal environment that favours the growth of *C. perfringens*

and something, such as coccidiosis, that causes mucosal damage.

In addition, the nature of the diet is an important risk factor. Diets with high levels of indigestible, water soluble non-starch polysaccharides predispose to necrotic enteritis and so wheat, rye, oats and barley are risk factors, whereas maize is not. High dietary concentrations of animal proteins, such as fish meal, have also been associated with the occurrence of necrotic enteritis. Mycotoxins should be viewed as a predisposing factor, as should any stress.

Control of necrotic enteritis has historically centred around the use of antibiotics and anticoccidials. Nowadays claims, not all of which have been scientifically substantiated, have been made for a wide variety of feed and water additives. In the future, vaccination should provide an alternative control strategy for necrotic enteritis whether this be parental hen vaccination with toxins, vaccination with purified recombinant immunogenic proteins, the use of live recombinant vaccines or vaccination with netB (a toxin which is a key virulence factor) derivatives.

Sjaak de Wit from Holland reflected on the tendency to underestimate the difficulties of **vaccination against viral respiratory diseases** by mass application methods. For successful vaccination to occur a sufficient number of infectious viral particles have to be delivered to the target organ(s) in the bird. When applying vaccine correctly by eye drop the bird receives the full dose of vaccine. When using spray vaccination, a proportion of the vaccine does not reach the bird and is lost.

He gave an example of vaccination against infectious laryngotracheitis which showed a high and fast immunological response when one or three doses of vaccine were administered by eye drop, whereas it took 160 doses per bird administered via the drinking water to induce an equivalent immunological response.

This study showed that application via the drinking water caused a loss of at least 1.0-2.0 log₁₀ of vaccine virus.

Irit Davidson from Israel took a new look at avian **flaviviruses**. Today about 70 different flaviviruses are known, some 40 of which are capable of infecting man. Of concern is the ability of viruses in this genus to rapidly evolve – leading to the emergence of new viruses.

Flaviviruses include turkey meningo-encephalitis virus, Bagaza virus (seen in wild Spanish partridges and pheasants in 2010), Tembusu virus (outbreaks in Chinese ducks in 2010), BYD virus (which caused a severe egg drop in China), Sitiawan virus (caused problems including encephalitis and stunting in Malaysian 4-6 week old chicks), Ntaya virus (Uganda 1951), Usutu virus (in wild birds in Germany in 2001) and the well known West Nile virus (1998 in Romania, 1999 in USA).

Bruno Gonzalez-Zorn from Spain then focused on **antibiotic resistance** and how it provides a unique opportunity for collaboration between the human and veterinary fields and ecologists.

Today it is well accepted that all antimicrobial resistance determinants have an origin in the environment. They originate from bacteria where they may or may not have an antimicrobial resistance function and overcome a flow through selective pressures, genetic platforms and environment/animal/food/human vehicles to ultimately end up in human pathogens in the community or in hospitals. Therefore, antimicrobial resistance has to be studied as an ecological phenomenon.

Radka Borutova from Austria discussed **fumonisin**s. Historically, poultry have been less sensitive to fumonisins than pigs and horses but in 1995 there was an unusual disease outbreak characterised by black sticky diarrhoea, depressed feed intake, egg drops followed by lameness and mortality (10%). Analysis of diets indicated contamination with fumonisin B and aflatoxin B1.

Between 2004 and 2011 some 9,000 samples of feed were collected worldwide and

Continued on page 17

Continued from page 15

examined for fumonisins – 80% of South American and 76% of African samples contained fumonisins, whereas the figure from Eastern Europe was contaminated.

Fumonisin can be enzymatically detoxified and a specific mycotoxin degrading enzyme mix – FUMzyme – encourages the biotransformation of fumonisins into non-toxic metabolites in the bird's digestive tract.

Adriana Barri from Belgium highlighted that although different **probiotics** claim anti-clostridial effects not all are equally efficient due to differences in activity, survival and persistence in the digestive tract. Probiotic mediated immunomodulation is an attractive approach that helps manage pathogenic inflammatory processes and is a property of *Bacillus subtilis* Strain PB6.

Bacillus subtilis PB6 helps to balance the first line mediators of inflammation and this, coupled to its ability to inhibit the growth of *Clostridium perfringens*, make this compound an interesting alternative to antibiotics in poultry production.

Kalen Cookson from the USA described how a **modified live E. coli vaccine** reduced mortality and colibacillosis in broiler field trials. Live *E. coli* vaccination was implemented in broilers farmed under different conditions in a variety of countries that had elevated mortality due to *E. coli* and in all cases vaccination had a favourable outcome.

Haiwen Liu from China shared experiences of a tri-valent **inactivated vaccine for *Reimerella anatipestifer*** (strains CH3, NJ3 and HXb2) in ducks. Ducks that received two doses of this vaccine were 100% protected by field challenge from homologous strains of *R. anatipestifer*.

Arne Jung from Germany described ***Enterococcus cecorum*** as being capable of causing disease when administered to Pekin ducks via the air sac route but not by the oral route. This author felt that *E. cecorum* infection should be viewed as an emerging pathogen in Pekin ducks as well as in broil-



ers and broiler breeders in which it has been previously described.

Taylor Barbosa reported on the protection conferred against **Marek's disease** by different vaccination methods in studies in Brazil.

In the first study subcutaneous vaccination with HVT vaccine at day old resulted in 66.25% HVT positive (by feather pulp PCR) birds at 21 days compared to 95.0% when the vaccine was administered in ovo. In a second study in ovo vaccination gave better results by 10.63%.

Laszlo Stipkovits reflected on **mycoplasma infections in geese and ducks**. He reported on the development of clinical signs and pathological lesions in chronically infected flocks. In young 1-2 week old flocks mild respiratory signs and a mild discharge are seen with a mortality of 5-7%.

A severe arthritis develops in 3-4 week old birds with mortality of up to 30%. In older birds respiratory signs decline and mortality is reduced in birds kept in the open.

Clinical signs of respiratory disease start to reappear as birds go into lay with a mortality of 8-10% during lay. Salpingitis, peritonitis and oophoritis are typically seen in dead layers and egg production is delayed by 2-3 weeks.

Infertiles in early lay are 8-10%, but in late lay they often reach 30-50%.

Phallus inflammation starts to appear a month into lay and 2-3 months later can affect 50-60% of the males. A variety of mycoplasmas can be involved.

Salvatore Catania gave a retrospective insight into 55 field cases of ***Mycoplasma iowae*** in meat turkeys. All the flocks experienced depressed weight gain and poor FCR in their first 3-6 weeks of life with a high rate of stunting. At about a month of age birds started to show a medial intra-rotation of the metatarsus and shorter and thicker tarsal-metatarsal bones. Occasional leg bone fractures were seen. All were positive for *M. iowae*.

In two presentations Koen de Gussem looked at the efficacy of **tiamulin hydrogen fumarate** and **tylosin tartrate** at different dose levels for controlling ***Mycoplasma gallisepticum*** in chickens. For tiamulin there were no significant differences in efficacy between doses of 10 and 25mg per kg body weight and for tylosin there were no significant differences in efficacy between doses of 35 and 100mg per kg body weight.

Mohamed Mouahid reported on the field usage of vector FP-MG vaccination on a Moroccan layer farm that housed 122,000 birds in rear and had a history of ***Mycoplasma gallisepticum*** infection.

The laying performance of vaccinated birds was 277 eggs per hen housed at 63 weeks with a feed conversion of 2.22 and a mortality of 4.36%.

The increase in the detection of **LPAI** on Dutch poultry farms was considered by Jeanet van der Goot. Some 56 of 69 infections were detected serologically. Reasons for the increasing number of detections were investigated and included changes in the surveillance programme, changes in the number and type of poultry farm, the number of wild birds and LPAI prevalence in wild birds.

Analysis of the data showed that free range layer flocks have an 11 times greater chance of becoming infected than their indoor counterparts. Turkey and duck farms have a higher risk of becoming infected.

There were two small regions in Holland with a higher risk of LPAI introductions and a peak of LPAI detections (25/69) occurred in May and June. ■