



DANDER

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Membership of the Australasian Veterinary Poultry Association Ltd is available to individuals and groups working in, or interested in, any veterinary aspect of poultry.

Dander will be published quarterly and contributions are most welcome. Electronic soft copies are preferred. Deadline for copies are by the end of the second week of the month of publication (i.e. March, June, September, December). Please send information on abstracts of interesting papers, summaries of reports, case histories, social news etc. to Grant Richards at ava176@tpg.com.au or Lynn Tan at lynn.tan@bartter.com.au

President's Message

There have been a number of things that have taken the attention of the AVPA executive over the last few months.

The first is the closure of regional veterinary labs in New South Wales. This is of concern to all of us as it can significantly reduce the capacity we have in Australia for early warning of exotic disease.

We have expressed our concern as a professional organisation. We all need to speak up at all possible venues and voice our concerns over what is happening.

In the last few months we have been working with Salsa Internet to get the website up and running.

It will be fully interactive and a repository for useful information.

For websites to work they need active participation and 'volunteers' who would like to moderate discussion topics. So I implore you all to use the facility when it is up and running and become involved. The website will be where we will discuss topics of interest to the industry and to us as an organisation, prepare and discuss submissions, discuss interesting cases or problems. Again the success will be entirely in your hands.

Dave Marks
President

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Welcome to new members Helen Crabb Thomas Rawrdon, Nina Kung, Tim Ahern, Neil Cooper, Chris Lawlor, Robin Anderson

Upcoming Scientific Meetings

PHLG Meeting – 17th July 2009
Gosford or EMAI

MEMBERSHIP MATTERS

Thanks to all members who have renewed their AVPA subscriptions for 2009. An application form for new or continuing membership can be found at the back of this issue of *DANDER*.

Sustaining members contribute funds that help defray costs of services to members of the AVPA. We thank all sustaining members for their active contributions.

Please see the AVPA website for information on sustaining members and links to websites

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Issue Contents

ILT: A Chink in the Armour of Biosecurity?
Stephen Lister

AMR Report Summary
Timothy Wilson

WVPA Bureau Member Report
Trevor Bagust

Book Review
Chris Morrow

WPDC & Salmonella Workshop Summary
Chris Morrow

AVPA Membership form

Updates

Animal Welfare Manuals now available for download online at members section of the ACMF website

www.chicken.org.au

Editor's Note

We are continuously improving Dander at the moment and need feedback/submissions constantly from members to keep it as informative and interesting as possible. Please do not hesitate to submit any articles, reviews, summaries etc to the editor at

lynn.tan@bartter.com.au

We need your support!

ILT - A Chink in the Armour of Biosecurity?

In the 75 years since it was first identified, infectious laryngotracheitis (ILT) has proved to be a persistent cause of concern in poultry, especially commercial layers.

The problem

Much of that concern is through the fear of introduction of infection into an area or onto a site, since once contamination is established it is notoriously difficult to remove. Due to the highly significant role of fomites (inanimate objects) such as egg trays, trolleys, equipment, people and [vehicles](#) in the spread of the virus, introduction of ILT onto a site is usually an admission that the general biosecurity strategy has failed.

The disease

The disease is caused by a herpesvirus, which, like the herpes cold sore virus in humans, can lie dormant in infected hosts, and be reactivated later, especially when birds are stressed. Reactivated virus can then spread to other birds on the site and cause a severe flare-up of the disease, particularly on multi-age sites.

As the name implies, the main organ affected by infectious laryngotracheitis is the trachea. The severity of the disease varies considerably with the strain of virus active in an area, but essentially falls into one of two broad variations.

1. Acute form: Here there is bleeding from the mouth and nose from sudden damage to the trachea with haemorrhages. Birds cough up blood and frequently die very suddenly from suffocation.
2. Chronic (or sub-acute) form: Here the damage to the trachea is more chronic with cheesy deposits developing in the lining of the trachea and larynx. This leads to morbidity, loss of condition and generally low mortality.

Clinical signs

In the acute form, there may be severe respiratory distress, craning of the neck and coughing up of blood. Birds may also show conjunctivitis and slightly swollen heads.

Meanwhile, in the same flock, or in flocks only mildly affected, less severe signs may be seen of coughing, sneezing and conjunctivitis. Disease may be exacerbated where other infections are present, notably in combination with *Mycoplasma gallisepticum*.

In the chronic form, there may simply be sudden death of poor birds or low grade respiratory signs. On mixed aged laying sites, chronic infection can persist, leading to an age-specific mortality in different houses, which may be significant if the flock is highly

Diagnosis

Accurate diagnosis is needed to ensure that infected sites are identified promptly. Strong suspicion can be aroused by gross post mortem lesions. Confirmatory laboratory tests will demonstrate the presence of the ILT virus

Control

As indicated above, introduction of ILT virus onto a site is a sign that biosecurity measures have failed, with infection gaining access via birds or fomites.

To maintain site biosecurity, the following steps should be taken:

- Keep all visitors to sites to a minimum.
- Provide full protective clothing including boots, overalls and hats.
- Provide hand washing facilities and instant hand sanitisers.
- Ensure all equipment, including egg trays and trolleys, are cleaned and disinfected prior to being brought on-site.
- Ensure all vehicles visiting sites are clean, and that wheels and wheel arches are sprayed with an appropriate disinfectant.

stressed, while the occasional acute outbreak with mortality is often self limiting.

Infection of birds in lay can cause drops in egg production, mainly as a reflection of sick birds in the house not feeding and, hence, not laying. However, infection has been linked to some egg quality problems, and specifically, to the so-called 'white egg' syndrome seen in brown egg layers.

In geographical areas where a high level of infection in commercial layers is coupled with a widespread use of live vaccine, there has been "overspill" into broilers, causing mild respiratory lesions, and into broiler breeders, leading to some egg production problems.

within affected tissues. Blood tests are of limited use in the acute stages of an outbreak, but may be useful retrospectively in monitoring the spread of infection.

Prevention of this situation must always be better than cure, and the biosecurity strategy employed at all sites should be periodically reassessed, particularly in the light of risks in specific geographical areas.

- Purchase stock from reputable sources, preferably single age rearing sites.
- Maintain regular diagnostic and monitoring service of birds through clinical

and post mortem examination, with strategic blood sampling, to identify the appearance of infection at the earliest possible stage.

Vaccination

Where infection does gain access to a site, or there is significant risk of introduction from contaminated farms in the vicinity, vaccination may help to crowd out or exclude the clinical effects of the virus. One live ILT vaccine is available in the UK (ILT Vaccine, Solvay Animal Health). This should ideally be administered by eye dropping of individual birds to ensure all are vaccinated. However, mass vaccination methods tend to be favoured for ease of administration, usually as coarse spray or via

the drinking water. Such methods may be successful if all birds are covered effectively. Inefficient vaccination can lead to a poor "take" or excessive vaccine reactions, the risk of the latter being particularly high if the vaccine is administered as too fine a spray. Poor response may also occur due to interference by maternally-derived antibody from the parent bird if pullets are vaccinated too early in rear. They could then require revaccination prior to lay.

Breaking the cycle

1. ILT remains a potent threat to poultry production, notably in commercial laying stock.
2. Although some mild infections may be self limiting, unfortunately infection tends to persist on contaminated sites until they are totally depopulated.
3. Following depopulation, terminal disinfection - the thorough cleansing and disinfection of all buildings and equipment - is essential to break the cycle. Once the flock has been removed from the housing concerned, it should be emptied of equipment, dry cleaned thoroughly, then cleaned with a detergent sanitiser such as [HD3](#) or [DSC1000](#) (Antec International). After

cleaning, the housing should be disinfected using a broad spectrum product such as [Virkon 'S'](#) (Antec International). All the removed equipment must be similarly cleaned and disinfected before being replaced.

4. Once birds are re-introduced, strict adherence to a structured biosecurity programme must be observed to prevent subsequent re-infection of the site. The measures listed above should be rigorously followed. In addition, Antec International have produced a series of helpful biosecurity programmes for use in various types of poultry production, describing efficient methods of both continual and terminal disinfection procedures.

To sum up, prevention is better than cure, and the best protection against the virus lies in good management practices, with the importance of site biosecurity impossible to over emphasise.

Stephen Lister BSc BvetMed CertPMP MRCVS is a partner in Crowshall Veterinary Services, a Norfolk, UK, practice specialising in Poultry Consultancy and Diagnostic Services.

Antimicrobial resistance surveys don't indicate the end of the world is nigh

Two Commonwealth government sponsored surveys of antibiotic resistance have been reported recently. The health department (DHA) contracted Food Science Australia to survey produce from retail stores and DAFF arranged for the collection of caecal samples from abattoirs and processing plants.

Australian chicken compared well to chicken from the US and Europe in terms of proportion of resistance gene load and in general compares well to swine but less favourably to cattle (both intensive and extensive).

DHA report:

“Pilot survey for antimicrobial resistant (AMR) bacteria in Australian food” by Robert Barlow and Kari Gobius 21st November 2008

The pilot survey for antimicrobial (AMR) resistant bacteria in Australian food is designed to provide data that can be used to estimate the prevalence of AMR bacteria in selected foods purchased at retail outlets. Four retail foods; poultry, beef, pork and lettuce along with four target organisms; *Campylobacter*, *Salmonella*, *Escherichia coli* and *Enterococcus* constitute the nine food / bacterium combinations included in the survey.

The survey sampling plan was designed to allow for the recovery of 100 isolates from each food / bacterium combination. Ongoing monitoring of the prevalence of each food / bacterium combination identified *Campylobacter* in poultry, *E. coli* in pork and *E. coli* in lettuce as three combinations that were unlikely to achieve the 100 isolate goal using the initial sampling plan. An increase in the number of tests for *Campylobacter* in poultry and *E. coli* in pork were made during the survey to provide the greatest opportunity for

The reports can be found at:

http://www.daff.gov.au/_data/assets/pdf_file/0004/950431/AMR-pilot-survey-report.pdf

[http://www.health.gov.au/internet/main/publishing.nsf/Content/A8AAD3C3038C79BBCA2572E3000A8ACC/\\$File/Pilot%20survey%20for%20AMR.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/A8AAD3C3038C79BBCA2572E3000A8ACC/$File/Pilot%20survey%20for%20AMR.pdf)

The executive summaries have been included below as well as some comments from Tom Grimes.

the 100 isolate goal per food / bacterium combination to be met. These increases were offset by similar sized reductions in the collection and testing of lettuce for *E. coli* as the prevalence of this combination indicated that 100 isolates would not be achieved. At the conclusion of sampling, 7 of the nine 9 food / bacterium combinations exceeded the 100 isolate goal of the survey using the modified sampling plan. Pork / *E. coli* (92 isolates) and lettuce / *E. coli* (7 isolates) did not reach the 100 isolate goal.

The results of AMR testing indicated that resistance to the majority of antimicrobials tested is low (< 10%). However, it is notable that the data indicates trends of higher prevalences of AMR in particular food / bacterium combinations. In *E. coli* from poultry and pork the prevalence of AMR was $\geq 15\%$ for ampicillin, streptomycin and tetracycline, in contrast to beef *E. coli* isolates where prevalence of resistance to these antimicrobials was $\leq 11\%$. Similarly, *E. faecalis* isolates from poultry were distinguished from beef and pork isolates by high prevalences of resistance to erythromycin (48%) and tetracycline (76%). Resistance to tetracycline

(16%) was observed for *Salmonella* isolates from chicken. AMR resistance to all antimicrobials tested in *Campylobacter* from chicken was low ($\leq 4\%$). Resistance to quinolones was not observed in any *E. coli* or *Campylobacter* isolates, whereas naladixic acid resistance was present in only a single *Salmonella* isolate (1%) from chicken.

The current Australian food AMR data has been compared with data from the

international AMR surveys: The Danish Integrated Antimicrobial Resistance Monitoring and Research Programme (DANMAP), Canadian Integrated Program for Antimicrobial Resistance Surveillance (CIPARS) and the United States of America National Antimicrobial Resistance Monitoring System (NARMS). Where variations in Australian and international AMR prevalences, of \geq or $\leq 10\%$, occur, these have been considered notable and are indicated below:

- **In retail chicken**, notable differences in AMR prevalence in the bacteria *Salmonella*, *E. coli*, *Enterococcus* and *Campylobacter* are reported.
 - * *Salmonella* (US and Canada) possess a greater prevalence of resistance to amoxicillin/clavulanic acid, ampicillin, cefoxitin, ceftiofur, streptomycin and tetracycline.
 - * *E. coli* (US and Canada) possess a greater prevalence of resistance to amoxicillin/clavulanic acid, ceftiofur, gentamicin and streptomycin.
 - * *Enterococcus* (US, Canada and Danish imported product) possess a greater prevalence of resistance to kanamycin, streptomycin and flavomycin (US only).
 - * *Campylobacter* (US, Canada and Danish imported product) possess a greater prevalence of resistance to ciprofloxacin, nalidixic acid and tetracycline.
- **In retail beef**, notable differences in AMR prevalence in the bacteria *E. coli* and *Enterococcus* are reported.
 - * *E. coli* (US) possess a greater prevalence of resistance to tetracycline.
 - * *Enterococcus* (US) possess a greater prevalence of resistance to tetracycline and flavomycin.
- **In retail pork**, notable differences in AMR prevalence in the bacteria *E. coli* and *Enterococcus* are reported.
 - * *E. coli* (Australia) possess a greater prevalence of resistance to ampicillin.
 - * *Enterococcus* (US) possess a greater prevalence of resistance to tetracycline and flavomycin.

The testing of isolates collected as part of the survey for AMR provides a snapshot of the prevalence and types of AMR bacteria present in selected retail foods in Australia. The use of Sensititre equipment and panels has generated data that is internationally equivalent and which can be compared to available overseas information. Whilst the survey data cannot be used to directly provide information about the development of antimicrobial resistance, it provides baseline data suitable for future use in the determination of antimicrobial resistance trends at the Australian retail food level. When correlated with similar Animal Isolates and Human Clinical AMR surveys this data may be useful in managing and controlling AMR development in the Australian community.

DAFF report

“Pilot Surveillance Program for Antimicrobial Resistance in Bacteria of Animal Origin” 2007

Executive Summary

The Australian Government Department of Agriculture, Fisheries and Forestry initiated the *Pilot Surveillance Program for Antimicrobial Resistance in Bacteria of Animal Origin* as part of the Australian Government’s response to Recommendation 10 of the report of the Joint Expert Technical Advisory Committee on Antibiotic Resistance.

The aim was to assess the prevalence of resistance to important antimicrobials amongst key indicator organisms found in the gut (caecum) of food producing animals. There is currently no surveillance system for antimicrobial resistance (AMR) in animals at the national level in Australia although an extensive national antibiotic resistance survey of broiler chickens was undertaken in 2000. Thus, the development of the pilot program was guided by national AMR surveillance programs operating in the United States, Denmark, Norway, Sweden and Canada.

The pilot program provides baseline information for the period from November 2003 to July 2004 against which similar future surveillance activities in Australia can be compared. Samples of gut contents were obtained from healthy animals at 31 slaughter establishments in Queensland, New South Wales, Victoria and South Australia. From 204 cattle, 200 pig and 303 chicken samples, 645 *Escherichia coli*, 547 presumptive *Enterococcus* spp. and 133 *Campylobacter* spp. isolates were recovered.

The minimum inhibitory concentrations of antimicrobials were assayed by broth or agar dilution according to National Committee on Clinical Laboratory Standards (NCCLS, now known as the Clinical and Laboratory Standards Institute) methods.

The antimicrobials chosen include those used in food-producing animals in Australia, some antimicrobials of importance to human medicine and antimicrobials not used in Australia but which have gained a public health profile internationally.

E. coli isolates from all three host species were assessed for resistance to ampicillin, cefotaxime, ceftiofur, chloramphenicol, ciprofloxacin, florfenicol, gentamicin, nalidixic acid, tetracycline and a combination of trimethoprim and sulfamethoxazole.

Enterococcus spp. isolates from all three host species were assessed for resistance to ampicillin, erythromycin, gentamicin, teicoplanin, vancomycin and virginiamycin.

Campylobacter spp. isolates were only sought from chickens as *Campylobacter* infections in humans are commonly associated with poultry and were assessed for resistance to ciprofloxacin, erythromycin, gentamicin, nalidixic acid and tetracycline.

Salmonella spp. are being evaluated in a separate project funded by the Australian Government Department of Health and Ageing and DAFF. A retrospective analysis is being conducted on 10 years of national data (isolates from humans, animals and food) from the National Enteric Pathogens Surveillance Scheme and Australian Salmonella Reference Centre.

While all 645 *E. coli* isolates were subjected to sensitivity testing and the results presented in this report, this was not the case for the other two bacterial species. Within the presumptive *Enterococcus* spp, seven isolates were not available for sensitivity testing due to loss in storage while another 16 isolates were shown not to be members of the genus *Enterococcus*. Furthermore, only the results for *E. faecalis*, *E. faecium* and *E. casseliflavus*/*E. hirae* (a combined analysis) are presented in this report. Two isolates of *Campylobacter* failed the internal quality control testing and the results were excluded.

Amongst *E. coli* isolates from cattle (n = 194), there was only a very low prevalence of resistance to florfenicol (1 %) and tetracycline (3 %). The only notable resistance involving enterococci from cattle were 9.5% of *E. faecium* isolates (n = 21) expressing resistance to both erythromycin and virginiamycin. Only small differences were observed between the prevalence and patterns of AMR in *E. coli* and *Enterococcus* spp. derived from feedlot cattle, grass-fed cattle and dairy cattle.

Amongst *E. coli* from pigs (n = 182), greater than 30% of isolates were resistant to ampicillin, chloramphenicol, florfenicol, tetracycline and trimethoprim/sulfamethoxazole. Multi-resistance (defined here as isolates resistant to two or more antibiotics) and multiple-resistance (defined here as isolates resistant to four or more antibiotics) was common amongst *E. coli* from pigs and involved up to six antibiotics.

High proportions (74.8%) of *Enterococcus* spp. from pigs were resistant to erythromycin. Virginiamycin resistance was common (43.3%) in pig *E. faecium* isolates although little or no resistance to other antimicrobial agents was detected in the remaining enterococci from pigs.

Amongst *E. coli* from chickens (n = 269), resistance was detected to ampicillin, tetracycline and trimethoprim/sulfamethoxazole (33%, 44% and 27% of isolates, respectively) and there was little or no resistance to the other antimicrobial agents. Multi- and multiple resistance was also detected in chicken *E. coli* isolates but was not as marked as in pigs with only 2.6% of chicken isolates having multiple resistance and one isolate resistant to two quinolone-type antibiotics. Enterococci from chickens (n=217) showed a high prevalence (68%) of resistance to erythromycin. Resistance to virginiamycin in enterococci from chickens was common (28.7% excluding consideration of *E. faecalis* which is intrinsically resistant to virginiamycin).

Tetracycline and erythromycin resistance (21% and 11% respectively) were detected in *Campylobacter* spp. from chickens (n=131). There was no multiple-resistance found in enterococci or *Campylobacter* isolated from chickens.

With the exception of streptogramins and *E. faecium*, nil or a very low prevalence of resistance to antimicrobials of importance to human medicine was observed. No resistance was detected amongst *E. coli* to either cefotaxime or ceftiofur (both third generation cephalosporins). A small proportion (3%) of pig *E. coli* isolates expressed resistance to gentamicin. Resistance to ciprofloxacin was detected in only one *E. coli* isolate from chickens (0.4%) but not in any *Campylobacter* spp. Only one enterococci isolate was vancomycin resistant (low-level vanC), whilst high-level resistance to gentamicin were not detected in any enterococci.

Comments from Tom Grimes:

1. The definition of "multiple resistance" seems to differ between the reports. In the case of the DAFF report, "multiple resistance" is defined as "isolates resistant to four or more antibiotics" while the term "multi resistance" was used for "isolates resistant to two or more antibiotics". In the DHA report "multiple resistance" appears to be considered as "resistance to one or more antimicrobials". Barton and Wilkins in their RIRDC Report in 2001 "Antimicrobial resistance in bacteria isolated from poultry" considered multiple resistance to be "resistance to two or more antibiotics from different antibiotic classes".
2. In relation to enterococcus (the main bacterium that precipitated the JETACAR Report), the statement in the body of the DHA report (but not in the Executive Summary) that "Resistance to clinically significant antimicrobials such as linezolid, gentamicin and vancomycin was not observed" is very important. In the DAFF report, a low-level vanC vancomycin-resistant enterococcus was found in 238 enterococci tested. VanC enterococci are very rare in human infections and can be treated with teicoplanin. These findings represent a significant improvement on the findings in the Barton and Wilkins 2001 report where 34.1% of enterococci were resistant to glycopeptide antibiotics (which include vancomycin). The voluntary withdrawal of avoparcin (the glycopeptide growth promotant antibiotic used in the poultry industry until late 1999) by the manufacturer, with the concurrence of the poultry industry, in February 2000 is probably the reason for the improved VRE status of poultry meat, based on similar experiences in other countries.
3. In relation to campylobacter (resistance of campylobacter to quinolone antibiotics is a "hobby horse" of Peter Collignon), the statement in the body of the DHA report (but not in the Executive Summary) that "No resistance to ciprofloxacin, florfenicol, gentamicin or nalidixic acid was observed" is very important. None of the 131 campylobacter isolates tested in the DAFF report were resistant to ciprofloxacin, gentamicin or nalidixic acid (florfenicol was not included in the testing). Fluoroquinolone antibiotics are not registered for use and have not been used in poultry in Australia.
4. The finding of no significant resistance to 3rd or 4th generation cephalosporins (another "hobby horse" of Peter Collignon), which are classed as "critical human antibiotics, in poultry in both reports is very important. Cephalosporin antibiotics cannot be used in poultry in Australia because of a registered Label Restraint.

WVPA Bureau Member Report

Dear AVPA Members,

You will have received as an Attachment from our AVPA Secretary last week, a Circular Letter advising that the **16th World Congress** coming up on Marrakesh during 8-12 November this year.

As we all know, the dates were deferred from August 2009 to this new schedule.

I can assure all of our AVPA Members that the Local Organising Committee for this event in Morocco has been doing a TERRIFIC job getting the Scientific and the Social and other programs into place. So, even in these times of economic difficulties, it would be great if we from Australia and New Zealand can support these good colleagues by attendance. The Moroccans are gracious and hospitable hosts, and You (and family too) will be made most welcome by them I know.

While not large numerically on the world scene, AVPA's membership has always been able to muster a good attendance and front up to present lively papers at these WVPA Congresses.

Field observations, theories, reviews and research will be equally welcomed!

So in follow-up to this Circular from the WVPA Secretary-Treasurer, can I strongly urge each of our people to spend just 5 minutes now please ,looking over this Congress's Website for themselves at

<http://www.wvpc2009.org/index.php>

FYI and noting please, the most important DEADLINES in a nutshell are:

Call For Abstracts

- **Deadline for early registration fee 30th June 2009**
- **Deadline for abstract submission 30th June 2009**
- **Deadline notification to abstract authors 31st July 2009**
- **Registration deadline for presenters 31st August 2009**
- **Deadline for 2nd early registration fee 30th September 2009**

Registration Form

- **Deadline for early registration 30th June 2009**
- **Deadline for 2nd early registration 30th September 2009**
- **On the spot**

Accommodation Form

- **Deadline for reservations 31st August 2009**

Cancellations

- **90% Before 31st August 2009**
- **50% Before 30th September 2009**
- **no refund After 31st October 2009**
- **Cancellations must be submitted in writing to the Congress Secretariat**

Booth registration

- **Deadline for booth registration 31st July 2009**

Cheers and hoping we can See you in Marakkesh!

Trevor Bagust
AVPA Member for the WVPA Bureau

Hurry up and join us

To make of the 16th World Veterinary Poultry Congress a successful scientific event

Welcome
to the Congress
in Marrakesh



And celebrate

The 50th Anniversary of the World Veterinary Poultry Association in Marrakesh; one of the most charming cities in the world

About the scientific program

Eleven scientific sessions

- SESSION I Viral diseases immunosuppression
- SESSION II Bacterial diseases and mycoplasmas
- SESSION III Public health and related pathogens
- SESSION IV Vaccines, immunity &
- SESSION V Tumoral diseases of chickens

- SESSION VI Parasitic diseases
- SESSION VII Natural products for poultry health
- SESSION VIII Turkey and other species diseases
- SESSION IX Nutritional disorders
- SESSION X Management & environment
- SESSION XI Miscellaneous

Four workshops

- WORKSHOP I Vaccination and vaccine applications
- WORKSHOP II Diagnosis of avian influenza

- WORKSHOP III Hatchery management and chick quality
- WORKSHOP IV Listeria in poultry meat products

Sponsors and exhibitors

Up to now, more than 20 sponsors and exhibitors including **3 premium sponsors** have already confirmed their participation to this promising event

WVPC 2009 organizers





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Book Review: Atlante di pathologia ispettiva degli avicoli (2000)S. Ferrarini and F Mutinelli

Being very disappointed that my last book review was not of the only copy of the book in Australia (Tom Grimes has a copy as well of the Bulgarian pathology atlas) I picked up a meat inspection pathology atlas at a trade fair in Forli, Italy last week. This book is in Italian except for the Preface and the picture captions which are also in English. It includes spent hens (layers) as well as broilers but not turkeys or other species. The book is useful with 12 chapters of pathology organized into organ systems affected. A chapter on traumatic lesions associated with slaughter is particularly interesting.

The quality of the pictures is variable with those taken on stainless steel tables in particular of low standard. The histology lesions are not particularly good photomicrographs but do display the pathology.

WPDC & Salmonella Workshop Summary

At the WPDC Salmonella workshop on March 22, 2009 38 Mbytes of information was presented to American Avian Veterinarians. Speakers included Tom Humphreys and mark Williams from the UK and a wide variety of US speakers. The proceedings contain all the slides from the conference. I would be happy to lend them to anyone interested. Preharvest interventions discussed include vaccination.

Later at the WPDC Dr Scott Russell from Georgia spoke on Salmonella reduction in slaughterhouses (he was on the original programme but missed his flight). He had an

There is no specific mention of Morrow syndrome which is red carcasses with acute inflammation of the skin. This was seen in Italy and Denmark by myself associated with long hauls in cold weather. I am sure this deficiency will be corrected in the next edition.

The other major atlas with similar material is a Canadian atlas but I am not sure it is still in print. Comparison of the two may be interesting because of the differences in legislation between Italy (EU) and Canada. Pododermatitis scoring has been introduced in a lot of European countries since this atlas was published and this has impacted direction on the farming densities that the farms are allowed to stock at.

Chris Morrow

interesting technique of profile salmonella contamination rates a variety of sites through a slaughterhouse with the normal profile being a decrease in positives throughout the process. Spin chillers are the norm in the USA and chlorine is added at every possible step (the main reason why US poultry meat cannot be imported into Europe). His latest thing is a prescaled brush which removes large amounts of organic material that would otherwise fall in the scald tank and exhaust the chlorine. His case studies of problems were very interesting. Although the approach is very different from the Australian approach I found

his explanations very lucid and helpful in understand the US approach. "Dilution is the solution to pollution" stuck in my mind as a catch cry. I would suggest that Scott be invited to talk in Australia. The interaction of intestinal integrity on rupture during evisceration was an interesting observation and his assertion that

it takes 15 mins for Salmonella to attach may have a lot of practical application. Fat build up in the chiller may influence some people's choice of breed and nutrition strategy.

Chris Morrow



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