20th International Pig Veterinary Society Congress
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Durban
South Africa

We are delighted that the International Pig Veterinary Society Congress 2004, decided to select South Africa as the host country for the 20th IPVS Congress. The Pig Veterinarians of South Africa will ensure that this congress lives up to the best traditions of previous congresses; incorporating an interesting and topical scientific programme, fascinating accompanying persons tours and an excellent social programme, allowing delegates the opportunity to network with their overseas colleagues.

This, the first IPVS congress on the African continent, will undoubtedly be of enormous benefit in generating solutions to the emerging pig veterinary challenges, especially those related to exotic and changing viral diseases, decreased use of antimicrobials and nutritional advances. The congress is important to further pig veterinary science in South Africa, to encourage younger veterinarians to join the pig industry, as a vehicle to generate funds for research and to improve the pig industry in Southern Africa.

South Africa is a magnificent and beautiful country, and offers tourists value for money. Thus, pre and post congress tours will be a major attraction for delegates to come to South Africa. Durban, in KwaZulu Natal, is a vibrant multi-cultured city with magnificent beaches, easily accessible game parks, theme villages and a moderate winter climate making it an ideal tourist destination. We urge our colleagues throughout the world to use this opportunity to get a glimpse of the continent’s rich and fascinating wonders and to enjoy the hospitality of their African friends.

Dr Peter Evans
Chairman: Local Organising Committee: IPVS 2008
PCV2 INDUCED GRANULOMATOUS ENTERITIS IN GROWING PIGS

JR Kolb1, M Genzow2, MR Roof3
1Boehringer Ingelheim Vetmedica, AMES, IOWA, United States of America
2BOEHRINGER INGELHEIM ANIMAL HEALTH GmbH, INGELHEIM, Germany

Introduction
Enteric disease in growing and finishing (fattening) pigs has multiple differential diagnoses. These include infections with *Lawsonia intracellularis*, *Salmonella* sp., *Brachyspira* sp, as well as nutritional and other non infectious causes. Recently, infection with Porcine Circovirus Type 2 (PCV2) has been implicated in diarrhoea and enteritis in fattening pigs in Denmark (1).

PCV2 produces granulomatous disease in multiple lymphoid tissues (2), and includes granulomatous enteritis and colitis. Disease may be triggered by multiple causes (3). This paper describes the findings of a diagnostic investigation into diarrhoea in fattening pigs in a commercial production system vaccinating in drinking water during the nursery phase against *Salmonella* sp. and *Lawsonia intracellularis*.

Materials and Methods
Cases were self selected by producers based upon presence of non specific diarrhoea in fattening pigs. A comprehensive diagnostic protocol was implemented in all enteritis case presented in growing and finishing pigs. Acute scouring pigs were examined clinically, and two to three pigs with typical signs selected for humane euthanasia. Necropsy was performed and a common set of tissues submitted to a laboratory for histopathology, immunohistochemistry and PCR (Table 1). Approximately 1% of all barns placed over a fixed period were sampled (37 sites of >1200 sites placed during the study period).

Table 1 Submissions for histopathology, immunohistochemistry and PCR.

<table>
<thead>
<tr>
<th>System</th>
<th>Organ/Tissue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory</td>
<td>Lung, bronchial lymph node (LN)</td>
</tr>
<tr>
<td>Enteric</td>
<td>Jejunum, ileum, cecum, colon, ileocecal LN</td>
</tr>
<tr>
<td>Systemic</td>
<td>Serum, subiliac LN, kidney, liver, spleen</td>
</tr>
</tbody>
</table>

A separate cross sectional serologic profile was conducted to evaluate the circulation of multiple respiratory and enteric pathogens. Five replicates of groups of pigs were bled at each of five separate ages. Fifteen animals were bleed for each group of pigs, or 75 per age group. Sera were collected from pigs at four, eight, 12, 16 and 22 weeks of age.

Results
Confirmed causes of diarrhoea included PCV2 virus, *Lawsonia, Salmonella* species, *Brachyspira*, and multiple combinations of the above, as well as non specific cases where no infectious cause could be identified (Table 2).

The most common diagnosed case of enteric disease was PCV2 virus regardless of age or season.

Table 2 Causes of diarrhoea in growing and finishing pigs

<table>
<thead>
<tr>
<th>Pathogen</th>
<th># Cases</th>
<th>% Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lawsonia</td>
<td>12</td>
<td>32%</td>
</tr>
<tr>
<td>Salmonella</td>
<td>7</td>
<td>19%</td>
</tr>
<tr>
<td>PCV2 virus</td>
<td>14</td>
<td>38%</td>
</tr>
<tr>
<td>Brachyspira</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Total</td>
<td>37*</td>
<td>100%</td>
</tr>
</tbody>
</table>

*Includes mixed infections; sum does not total to 100%.

In pigs less than 80 kg, PCV2 and *Salmonella* infection predominated in the cases examined. Viral diarrhoea due to PCV2 was the most common cause.

In pigs >80 kg body weight, *Lawsonia* infection was the most commonly identified organism. However, this was at a low prevalence within groups (mean clinical prevalence <2% of pigs), and at a low incidence among groups (<1% of all groups of pigs over 90 kg had diarrhoea of any type).

Cross sectional serology demonstrated exposure to *Salmonella* began in early finishing (first seroconversion and 25% positive at 12 weeks of age). *Lawsonia* exposure occurred in later finishing (>16 wks age at first seroconversion; 35% positive at 22 weeks).

Discussion
Multiple pathogens were identified alone or in combination. Thorough diagnostic investigation, including both serum and tissue submissions, was needed to properly identify the agents involved, as lesions were often grossly indistinguishable. This list should include granulomatous enteritis due to PCV2 infection. Serologic evidence of exposure indicated that vaccination timing was appropriate, that vaccination prevented circulation of *Salmonella* and *Lawsonia*, as indicated by seroconversion, in more 2/3 of production of groups, and prevented clinical signs in approximately 99% of groups.

Enteric disease presents a complicated diagnostic picture. Multiple agents may present with clinical, and even gross pathological, symptoms that are indistinguishable. A thorough clinical and pathologic exam is essential to establish the cause(s) of disease. Ileitis and colitis due to PCV2 should be included in the list of differential diagnoses in fattening pigs and can be a significant cause of clinical disease of growing pigs in certain settings.

References