PRRS situation in the region and control initiative, updates and trends

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Highly-pathogenic PRRS situation in China

From Jan. to May in 2007, 22 provinces took place HP-PRRS. There are 194 county outbreak, 289 epidemic points, 45858 diseased pigs, 18597 dead pigs, 5778 culled pigs. (June 11, 2007)
Highly-pathogenic PRRS situation in China

The statistic data of HP-PRRSV accidence between 2008 to 2013 in China

<table>
<thead>
<tr>
<th>Time</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incidence quantity of pigs (head)</td>
<td>7648</td>
<td>8779</td>
<td>6508</td>
<td>1308</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Dead quantity of pigs (head)</td>
<td>2908</td>
<td>3459</td>
<td>1733</td>
<td>230</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Epidemic point number</td>
<td>57</td>
<td>14</td>
<td>10</td>
<td>14</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Data source from OFFICIAL VETERINARY BULLETIN
Highly-pathogenic PRRS situation in China

HP-PRRSV detecting results from different monitoring sites within 2011 to 2013

<table>
<thead>
<tr>
<th>Monitoring site</th>
<th>Sample number</th>
<th>Positive number (ratio %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale pig farm</td>
<td>58353</td>
<td>59465</td>
</tr>
<tr>
<td>Back-yard</td>
<td>20493</td>
<td>12212</td>
</tr>
<tr>
<td>Market</td>
<td>5687</td>
<td>4097</td>
</tr>
<tr>
<td>Other sources</td>
<td>23687</td>
<td>22525</td>
</tr>
<tr>
<td>Total</td>
<td>108220</td>
<td>98299</td>
</tr>
</tbody>
</table>

Data source from OFFICIAL VETERINARY BULLETIN
Highly-pathogenic PRRS situation in Asia

The prevalence of HP-PRRSV in East and Southeast Asia within 2006-2011
The distribution of HP-PRRSV occurrence in Viet Nam in 2007

Trucks stop for resting and washing transported pigs

Pig movement: North → South
The Joint FAO/OIE Workshop on Swine Disease Control in Asia took place on Thu, Jul 26, 2012.

In HEALTH, the following news article was posted:

**Blue-ear disease infects pigs in Nam Dinh, Phu Tho Provinces**

A serious pandemic of the blue-ear disease, affecting pigs, was declared in several countries, including Nam Dinh and Phu Tho Provinces by provincial authorities on April 20.

Dang Van Hien, deputy head of the Veterinary Department in Nam Dinh Province, reported that the blue-ear disease has infected 103 pigs in Y Ten District and Yen Chinh, Yen Phu, Yen Hung and Yen Binh Communes.

In Phu Tho Province, the disease has infected 180 pigs in Thanh Thuy District and Thach Khoan Commune of Than Don District.

Authorities in both provinces have stepped up emergency measures to quarantine areas affected by the disease and destroy infected farms.

The veterinary departments in the provinces have also banned transportation and trading of sick pigs.

Localities have been asked to keep a strict watch on quarantined areas, implement strict measures to prevent the disease, and inform the media.

According to the Ministry of Agriculture, the blue-ear disease, also known as Porcine Reproductive and Respiratory Syndrome (PRRS), has infected thousands of pigs in the region.

PRRS is caused by the Leistad virus, which causes pigs to turn blue, while they also begin to suffer loss of appetite, high fever, have miscarriages or premature delivery, and die in extreme cases.

**Vietnam has 25 provinces to have cases of blue-ear disease.**

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In the Vietnamese news, the following article was posted:

**越南北部地区猪蓝耳病疫情严重**

In recent days, Swine Influenza A virus (H1N1) has been found in 11 provinces of northern Vietnam. The disease has spread quickly, especially in Cao Bang, Lang Son, and Quang Ninh, where multiple cases have been reported.

The Ministry of Agriculture and Rural Development, led by the National Steering Committee, has taken action to control the disease. They have set up emergency response teams and provided assistance to affected farmers.

The Vietnamese government has also issued guidelines to prevent the spread of the disease, such as slaughtering infected pigs and disinfecting affected areas.

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**Source: Nguyen Tung, Molecular Epidemiology of HP-PRRS in Vietnam in 2010 (APVS Congress, 2011).**
HP-PRRSV prevalence in Laos from July to Sep. in 2010.
HP-PRRSV occurred in Tailand and Myanmar in 2011.

**Joint FAO/OIE Workshop on Swine Disease Control in Asia**
HP-PRRSV occurred in Cambodia from 2007 to 2010.

Livestock movements and pig densities of Cambodia (Chetra et al.) (FAO)
Highly-pathogenic PRRS situation in Asia

- East-Asia and South-east Asia area is the center of pig industry worldwide.
- FMD, CSF, **HP-PRRS** are the harmful diseases for pigs at present.
- ASF is the biggest potential threat to the pig population.
- Backward feeding mode and disordered transportation of pigs and pork increase the difficulty in controlling swine diseases.

The conference on swine health management in East-Asia and South-east Asia (held in Viet Nam on Aug. 21-25, 2012)
HP-PRRSV is still the main disease of affecting the pig industry in the region!
PRRS control initiative, updates and trends

Sequence identity is 97.2%~99.3% compared with HP-PRRSV JXAI strain

Sequence identity is 95.6%~99.8% within isolated HP-PRRSV strain
### Pathogenicity test of HP-PRRSV isolates

<table>
<thead>
<tr>
<th>Time</th>
<th>Isolated strain name</th>
<th>passage</th>
<th>Challeng titre (TCID$_{50}$/mL)</th>
<th>Piglets age (week)</th>
<th>mobility (%)</th>
<th>mortality (%)</th>
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</thead>
<tbody>
<tr>
<td>2010</td>
<td>NVDC-JXA1</td>
<td>5</td>
<td>$10^{4.5}$</td>
<td>10</td>
<td>100</td>
<td>40</td>
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<tr>
<td></td>
<td>10BJ-5</td>
<td>5</td>
<td>$10^{4.5}$</td>
<td>10</td>
<td>100</td>
<td>40</td>
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<tr>
<td></td>
<td>LW1-13</td>
<td>5</td>
<td>$10^{4.5}$</td>
<td>10</td>
<td>100</td>
<td>60</td>
</tr>
<tr>
<td>2011</td>
<td>NVDC-HuN/2011</td>
<td>5</td>
<td>$10^{4.5}$</td>
<td>10</td>
<td>100</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>NVDC-VN/2011</td>
<td>5</td>
<td>$10^{4.5}$</td>
<td>10</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>NVDC-HEB/2011</td>
<td>5</td>
<td>$10^{4.5}$</td>
<td>10</td>
<td>60</td>
<td>0</td>
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<tr>
<td>2012</td>
<td>NVDC-SC/2012</td>
<td>5</td>
<td>$10^{4.5}$</td>
<td>10</td>
<td>60</td>
<td>20</td>
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<tr>
<td></td>
<td>NVDC-BJ4/2012</td>
<td>5</td>
<td>$10^{4.5}$</td>
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<tr>
<td>2013</td>
<td>NVDC-JXA1</td>
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<td>$10^{4.5}$</td>
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<td>NVDC-HEB/2013</td>
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<td>NVDC-BJ/2013</td>
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<td>$10^{4.5}$</td>
<td>10</td>
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<tr>
<td></td>
<td>NVDC-MD/2013</td>
<td>5</td>
<td>$10^{4.5}$</td>
<td>10</td>
<td>60</td>
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</tbody>
</table>
PRRS control initiative, updates and trends

Protective efficacy assessment of HP-PRRSV vaccine to HP-PRRSV strains isolated in 2013

The result of body temperature of pigs challenged by PRRSV NVDC-HEB/2013 strain

The result of body temperature of pigs challenged by PRRSV NVDC-HEB/2013 strain post vaccination of JXA1-R strain
Joint FAO/OIE Workshop on Swine Disease Control in Asia

2180000 HP - PRRSV (JXA1-R strain) vaccine

300000 HP - PRRSV (JXA1-R strain) vaccine
PRRS control initiative, updates and trends

- Improve the timely exchange of epidemiologically relevant information among affected countries in order to revise national control strategies.
- Increase risk based surveillance of HP-PRRSV.
- Promote the appropriate use of a safe and efficient vaccine matching with circulating strains as a tool to reduce clinical symptoms.
- Enhance transportation supervision and comprehensive biosecurity measures.
- Carry out the purification and elimination of HP-PRRSV at the right time.
Thank you for your presentation