Thank you for participating in SowBridge 2010.

To start this presentation, advance one slide by pressing enter or the down or right arrow key.

To see the additional pieces on this CD, click on the links below.

**Pregnancy Diagnosis in Swine.pdf**  
**KNOXPIPREGTESTERS.pdf**  
**RTU use for pregnancy in swine.pdf**

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**Data set #2 for pregnancy loss**

<table>
<thead>
<tr>
<th>Total Served</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Serviced</td>
<td>60,457</td>
<td>100.0</td>
</tr>
<tr>
<td>21 d recycles</td>
<td>3,811</td>
<td>6.3</td>
</tr>
<tr>
<td>RTU opens</td>
<td>5,915</td>
<td>9.8</td>
</tr>
<tr>
<td>RTU Pregnant</td>
<td>50,731</td>
<td>83.9</td>
</tr>
<tr>
<td>NIP or RTU fallout</td>
<td>2,365</td>
<td>3.9</td>
</tr>
<tr>
<td>Farrowed</td>
<td>48,366</td>
<td>80.0</td>
</tr>
</tbody>
</table>

Dr. L. Rueff, 2000 Swine Ultrasound Workshop Proceedings

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**Data set #3 for type of failure and when it occurs**

<table>
<thead>
<tr>
<th>Type of Failure</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>48% all returns</td>
<td>14% RTU opens 4% NIP</td>
</tr>
</tbody>
</table>

[Table 1: Type of failure and when it occurs]

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**Reducing average herd open days can help reduce annual costs**

<table>
<thead>
<tr>
<th>Sows</th>
<th>Farrowed</th>
<th>Open sows</th>
<th>LS/A</th>
<th>Open day avg.</th>
<th>Open day cost</th>
<th>Total annual cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
<td>80%</td>
<td>200</td>
<td>2.1</td>
<td>45</td>
<td>$2.16</td>
<td>$40,824</td>
</tr>
<tr>
<td>1000</td>
<td>80%</td>
<td>200</td>
<td>2.1</td>
<td>35</td>
<td>$2.16</td>
<td>$31,752</td>
</tr>
<tr>
<td>Difference</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$ 9,072</td>
</tr>
</tbody>
</table>

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**Ultrasound can help:**

1. Minimize open day costs  
2. Adjust pregnant sows to crates  
3. Identify open females for re-breed or cull  
4. Prevent culling of pregnant sows  
5. Extend and timing of pregnancy failure  
6. Predict future pig flow
Why Real Time Ultrasound?

• Easy to perform
• Imaging
• Immediate
• Can be repeated
• Diagnose pregnant or open
• Low cost/animal over time
• Limited problems of imaging

Pregnancy failure

• Most pregnancy failures are unexplained
• Lead to an evaluation of management practices
• Often times, problems are associated with:
  – Heat stress
  – Hot weather
  – Stress
  – Disease
  – Management problems
  – Vaccinations
  – Toxins
  – Movement
  – Mixing

The equipment used

• Hospital
  – Stationary
• Medical
  – Semi-portable; Battery unit or not; 15-25 lbs
• Veterinary
  – Light, Portable; battery
Insight-Classic Medical

Not all machines are equal

Types of Imaging

- Transabdominal

Real-Time B-Mode Ultrasound

Pregnancy In the Pig

Based On Fluid Accumulation

Interpretation of a RTU pregnancy image

Real Structure vs Real-Time

- pregnancy

Allantois or Embryonic Vesicle
The real time keys to look for

- At day 30 of gestation
  - Multiple fluid pockets
  - Pockets ≥ 1/5th of screen width at that level
  - Clear fluid (black) not fuzzy
  - Irregular shape not circular

**Principle of RTU for Pregnancy is based on: Fluid Accumulation in Uterus**

Day 22

- Transabdominal
- Transrectal

Day 30 Pregnancy

Embryos & Fetuses can be detected

- 7.5 MHz
- 3.5 MHz

Day 30 of Pregnancy

- 2 inch CR

We have not been able to count fetuses or determine litter size.
Day 70 Gestation

Problems in RTU
Pregnancy Diagnosis

Sensitivity = detects pregnant sows when all sows > d 27 to d 35

Specificity = detects non-pregnant sows > d 27 to d 35

Accuracy = correctly diagnosed

Your diagnosis? Pregnant or Not?

When to Diagnose based on Fluid Diameter

Sanitation issues can lead to:

- Bacteria in semen
- Uterine infections
- Note speckling

What is your Diagnosis? Pregnant or Not

• May occur at 4-15% in herd, but accounts for much higher percent of all failures
Pregnancy check and culling

- A group of weaned sows is bred over 5 days.
- They are checked at d 25 and 20% of the open sows are culled.
- At slaughter 10 of the culled sows are pregnant.
- What went wrong?
  - They are d 21-25 d
  - Check all once at d 30 [27-32 range]

What we do to troubleshoot

1. Classify extent of problem with records.
2. Look for patterns of failure (parity, location, handling, technician).
3. Example: 20% pregnancy fallout.
4. Should be present in 20% of any breed group.
5. Assess groups of 10-30.
   1. 2/10
   2. 4/20
   3. 6/30
6. Within a day, move through stages of gestation.

Troubleshooting Pregnancy Failure Using tRTU

- In groups of 40 sows, identify fail to conceive in 15% and pregnancy failure in 10%.

<table>
<thead>
<tr>
<th>Day</th>
<th>Expected Problem Rate</th>
<th>Expected Sows with Problem</th>
<th>Number to Examine</th>
<th>Regular Return</th>
<th>Abnormal Return</th>
<th>Fetus</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>15%</td>
<td>3</td>
<td>20</td>
<td>2</td>
<td>10/20</td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>20%</td>
<td>2</td>
<td>20</td>
<td>2</td>
<td>15/20</td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>20%</td>
<td>5</td>
<td>20</td>
<td>5</td>
<td>12/20</td>
<td>2</td>
</tr>
<tr>
<td>54</td>
<td>25%</td>
<td>5</td>
<td>20</td>
<td>13/20</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>64</td>
<td>25%</td>
<td>5</td>
<td>20</td>
<td>15/20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>74</td>
<td>25%</td>
<td>5</td>
<td>20</td>
<td>15/20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Recommendations

- Get regular/irregular returns by daily heat checking and rebreed or cull.
- Perform ultrasound at d 27-33.
- Recheck questionable sows once.
- Stimulate/breed or cull.
- Recheck pregnant sows in cases of fallout problems.

Thanks!
you can find more information on the web