Optimizing reproductive performance in swine herds through estrus synchronization and ovulation induction
The ReproPig approach

Improving profitability by:

1. Process optimization
   A. Farm data collection
   B. Set new targets
   C. Gap analysis
   D. Crossing the gap

2. Steering the process (batch management)

3. Controlling the process:
   
   *ovulation induction followed by a single fixed time AI*
Single fixed time AI

- **AI:** Artificial Insemination
- **Fixed time:** A **pre-set timing** when this AI should be done
- **Single:** Only **1 AI** is needed
- **“Blind”:** **No estrus detection** needed to determine best moment for insemination (only confirmation of standing heat at moment of insemination)
Current situation

➢ Gilts come in estrus at the moment their cycle starts
  - No planning possible
    • Wrong moment
    • Wrong number of gilts

➢ Staff has to “read” the estrus of the gilt / sow

➢ 2x per day estrus check

➢ Uncertainty about timing of insemination

➢ 1.6 – 2.8 AI’s per estrus
Inducing the LH surge

Porceptal

Hormone profile of the oestrous cycle in the pig

Pre-ovulatory surge
Timing

- Van Kaufman F., et al., 1982:
  - Ovulation occurs 38-42h after buselerin administration

- Steverink D., et al., 1999:
  - Optimal moment for insemination is 0-24h before ovulation

Optimal timing for insemination is 30-33h after Buserelin injection
The synchronization of onset of follicular phase in gilts with Regumate

- Naturally occurring estrus before Regumate treatment
- Regum for 18 days
- Expected estrus without treatment
- Expected estrus after Regumate treatment
- Interval from treatment to estrus (days)
- Appearance of estrus (%)

MSD Animal Health
O.I. in gilts (with Porceptal)

Last dose Regumate

Single fixed time AI

18 days

120 hrs (± 3 hrs)

30-33 hrs

* Fine tuning on farm level is required
O.I. in sows (with Porcepalal)

- Lactation
- Weaning
- Single fixed time AI

- 86 hrs (± 3hrs)
- 30-33 hrs

* Fine tuning on farm level is required
# Results single fixed time AI

## Results gilts

<table>
<thead>
<tr>
<th></th>
<th>Porceptal</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nr. of gilts inseminated</td>
<td>187</td>
<td>199</td>
</tr>
<tr>
<td>Farrowing rate</td>
<td>78.8%</td>
<td>80.9%</td>
</tr>
<tr>
<td>Total born / litter</td>
<td>12.9</td>
<td>13.1</td>
</tr>
</tbody>
</table>

## Results sows

<table>
<thead>
<tr>
<th></th>
<th>Porceptal</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nr. of sows inseminated</td>
<td>192</td>
<td>200</td>
</tr>
<tr>
<td>Farrowing rate</td>
<td>86.5%</td>
<td>84.5%</td>
</tr>
<tr>
<td>Total born / litter</td>
<td>13.6</td>
<td>13.7</td>
</tr>
</tbody>
</table>
Practical example

шейкеты

- Последняя Regumate среда 7.00 утра среда
- Porceptal в понедельник 7.00 утра (+120 часов)
- AI в понедельник 13.00-16.00 часов (+30-33 часа)

шейкеты

- Отъем в четверг 16.00 часов
- Porceptal в понедельник 7.00 утра (+87 часов)
- AI в понедельник 13.00-16.00 часов (+30-33 часа)
Single fixed time AI

- **No compromised reproductive performance**
- **Labor reduction**
  - No labor needed for estrus detection
  - Skill level of staff can be reduced
  - Less AI’s to perform
  - More efficient AI
- **Better farm planning**
  - Synchronized AI’s, less variation at farrowing
- **Less semen costs**
  - 1 dose per service
  - Reduced size of boar stud (genetic improvement)
“If you strive for perfection you will reach excellence”