Best Practices in Nursery and Finisher barns:
Lessons learned from top producers

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OBJECTIVE AND APPROACH

OBJECTIVE
• Identify actions (methods, approaches) used by top producers to detect sick pigs, allowing individualized and customized care to be provided.

APPROACH
• Contributors identified one or two top producers among their clients and then met with them to find out about their work methods.
CONTRIBUTORS

- Martin Bonneau  DVM  Demeter Veterinary Services Inc.
- Alexandre Cloutier  Agr.  Agri-Marché
- Martine Denicourt  DVM, M.Sc  FVM / SVA Triple-V inc.
- Yvan Fréchette  Producer  COOP network
- Alain Lefebvre  Producer  Jyga Technologies Inc.
- Sylvain Messier  DVM, IPSAV  Demeter Veterinary Services Inc.
PRODUCERS INTERVIEWED

• Valérie Bousquet - Ferme Culture JB
  • Contract producer, finisher barns
• François Robert - Petit Manoir
  • Employee of a contract producer, finisher barn
• Guy Lemay - Ferme Dumay
  • Contract producer, finisher barn
• René Harton - Ferme René Harton
  • Independent producer, wean-to-finish operation
PRODUCERS INTERVIEWED

• Robert Lapointe - Ferme Robert Lapointe
  • Independent producer, finisher barns

• El Houssaine Rachik - Les Élevages Lessard
  • Employee of independent producer, nursery barns

• Jean-Pierre Audesse - F. Porcine Audesse
  • Independent producer, farrow-to-finish operation

• Anick Leduc - Les Gorets inc.
  • Contract production, nursery barns

• Serge Ménard - Méloporc
  • Independent producer, farrow-to-finish operation
A QUICK OBSERVATION

The top producers we met with all put priority on a set of critical herd management factors that must be controlled in order to limit the number of pigs requiring individual treatment.

Therefore, my presentation did not just address the detection and treatment of sick pigs, but mostly also these critical factors or “Best practice in nursery and Finisher”
CHARACTERISTICS OF TOP PRODUCERS

• **Aim to be among the best** (in their benchmarking group or network)

• Are all acutely aware of the **importance of good biosecurity**
  • Danish entry
  • Dead animals outside the CAZ

• **Use three of their senses**
  • Sight
  • Smell
  • Hearing

• **Pay attention to piglets’ comfort**

• **Do not tolerate… (observe and act)**
PREPARATION OF BUILDING (before pigs arrive)

Cleaning

- Empty feed system lines before cleaning the room
- Pressure washing (rooms and equipment)
  - Clean all equipment
  - Clean all the room (including ceiling)
  - Hot water used by some of the producers
  - Important to turn over feeders
- Use soap
  - Let it sit for 15-30 min. followed by a pressure rinse
- Drying
- INSPECTION (and touch-ups if needed)
Cleaning (cont’d.)

- Disinfection
- Drying
  - Summer: maximum ventilation
  - Winter: 30% ventilation + heat
  - Wait until target $T^\circ$ is reached before animals arrive (85°F nursery barns, 72°F finisher barns)
- Rinse feeders (after disinfection) and dry feeders and water bowls
- Store wash water in pull-plug pits
PREPARATION OF BUILDING (before pigs arrive)

Building

- Check pens (slats, dividers) and ventilation
  - Look out for protruding bolts or any damage that may cause injuries
- Take advantage of absence of animals to do repairs if needed
PREPARATION OF BUILDING (before pigs arrive)

Water

- Sanitize water lines (periodically)
- Check flow at each nipple (0.5 to 1 L/min)
- Attach bowl covers (nursery)
- Additional water sources (nipples or red feeders) in nursery at beginning (min.: pens with smallest pigs)
- The morning of pigs’ arrival, run water until cold fresh water appears
PREPARATION OF BUILDING
(before pigs arrive)

Feeding system

• Empty and clean feed bins (with silicon hammer or brush) (impact on incidence of prolapse!)

• Make sure you start with the right feed
  • Exact commands (“load cell”) or
  • Extra feed bins / cart / bag or
  • Feed bins transfer (specialize truck)

• Adjust feeders

• Action wet feeders
ARRIVAL OF ANIMALS

- Keep some empty pens to serve as hospital pens
- Sort by size
  - Feed according to weight
  - Better identify wasting pigs
- Adjust water nipples based on the size of the pigs
- Observe lameness during sorting (Or even during loading/unloading)
- Euthanasia of severe lameness and respiratory distress as soon as they arrive
- Night lights should be on 24 hours a day
THE FIRST FEW DAYS

**Isolate**

- Dominated pigs
- Animals with injuries (mainly lameness in the first few days)
- Pigs that are not eating (failure to thrive)
- Sick pigs (less active pigs = suspect)
Stimulate feed intake \((\text{Fresh feed!})\)

- **Nursery:**
  - Frequent small meals
  - Hand feeding (first 10 days)
  - Supplementary feeders
  - Sprinkle milk on feed (smallest ones)

- **Finisher:**
  - Height of feed tube based on consumption
  - Wet feeders: operate mechanism to stimulate feeding
  - Adjust feeder as needed
BARN CHECKS

Before entering the room

- Check/record $T^o$ variation (min-max)
- Listen to see if the “medicator” is working properly (i.e. making a clicking sound) and check quantity consumed versus target
- If available (new technologies)
  - Check water consumption display (low $ options)
  - Check feed consumption display ($1,500/feed bin)
  - Significant reduction = disease incubation or broken equipment or lack of water/food

When you finish

- Record general comments and observations
- Allows response to interventions to be assessed
- Allows risk factors to be identified
BARN CHECKS

Always have a marker and a pig board

- Various identification techniques can be used (Different colours or marks)
  - Reasons for the condition
  - Number of treatments
  - Original pen number

Frequency of barn checks

- Minimum: twice a day
- Up to 5 times a day the first week (nursery)
BARN CHECKS

When you first walk into the room, observe:

1. The pigs position
2. Pig activity level
3. Traffic at feeders and drinkers
   - Pigs shouldn’t be waiting at feeders/drinkers
4. Air quality (low gas and odor levels)
   - # fans running vs. demand from thermostat
   - Air inlets opening vs. number of fans operating
5. Unusual odors? (diarrhea, dead pigs…)
BARN CHECKS

Have a **systematic routine**
(One side of the alleyway at a time)

1. **Look at each animal one by one**
   - Empty stomach = lack of water/feed or disease
2. **Look at the feces quality**
3. **Do adjust feeder (a few every day)**
   - 80% of bottom empty (after the first days of acclimation)
   - Clean dirty feeders
4. **Check access to water**
   … **start the loop again at the next pen**

**Enter pens systematically + make pigs stand up**
(first 3 days)
- Get pigs used to human contact
- Spot diseases and injuries better (lameness, weakness, coughing…)
- Stimulate feed intake
- Large pens: alternate clockwise & counter clockwise

Be careful during disease outbreaks

Enter pens systematically + make pigs stand up
(first 3 days)
- Get pigs used to human contact
- Spot diseases and injuries better (lameness, weakness, coughing…)
- Stimulate feed intake
- Large pens: alternate clockwise & counter clockwise

Best Practices in Nursery and Finisher barns: Lessons learned from top producers
Isolate pigs (hospital pen): YES or NO?
- Some producers isolate all pigs needing treatment
- Others only isolate the sicker animals and treat pigs that are mobile in their original pen (e.g. coughs)
- Meningitis:
  - Individual isolation for 24–48 hrs. with access to feed and water
  - Most meningitis cases detected in afternoon !!!

Injectable treatments: YES or NO?
- Some isolate animals but do not treat = Adequate response if detected early!
- Most treat with antibiotics (+ anti-inflammatory for lameness or meningitis)
- All euthanize severe cases quickly (fractures or cases that are getting worse)
KEEP TREATMENT EQUIPMENT CLOSE AT HAND
INDIVIDUAL TREATMENT PROCEDURES

- 15 kg or less: hold in your arms to adequately immobilize
- Larger pigs: while pig standing/moving or restrain with a pig board
- Change needle after each farm tour
- Empty syringes after each farm tour and rinse with water
- Record your treatments
OTHER ROUTINES

- Immediately **repair** anything that is broken
- Completely **empty feed bins and feeders every 4 weeks**
- Activate **scrapers** every day (to reduce ammonia)
  - Minimum twice a week to prevent flies cycle
- Turn on **feeding system 4–6 times/day** to stimulate feed intake
- Verify **chlorine level** regularly (max 2 PPM)
- Acid in water (pH<4) early nursery (3-4 weeks)
OTHER ROUTINES

Large-pen (auto sort or open-pen systems)

- Always maintain 8–10 sq. ft. (even at end of batch)
  - Improves comfort (ventilation calibrated for this density)
  - Stimulates feed intake and limits wasting
  - Allows cleaning to begin
OPEN-PEN SYSTEM

POSITIVES – Allows more flexibility
• Facilitates weighing and collection before shipping
• Facilitates the isolation of sick animals (unlimited # of hospital pens)
• Reduces stress from herd hierarchy
• Reduces vices (cannibalism)

NEGATIVES - Health
• Increases spread of enteric pathogens
• Increases spread of respiratory pathogens requiring direct contact (APP, *Actinobacillus suis*…)

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HOSPITAL PEN

Always have few ones (at least 2)

- Adjust ratio depending on pig inventory per batch and pen size
- 5–10% more pig per pen at arrival to have 5–10% of pens empty
- Adjustable size option (large groups)

Location

- Warm place (avoid exterior walls):
  - Sick pigs and young pigs need more warmth
  - Variable density (sometimes low)
- Avoid drafts
- Near room entrance to make it easier for frequent access
- Can be outdoors in summer (covered, fenced-in area)
HOSPITAL PEN

Minimum 3-4 piglets per pen
- Add healthy pigs if needed
- Pigs are social animals
- Encourages feed intake
- Encourages huddling for warmth

Maximum density = same as in a normal pen (ideally less dense)

One pen for sick pigs under treatment and one for recovering pigs
- Small pens (<100): some producers will return the animal to its original pen (identification important)
- Large pens (>100): an animal can be added
## VALUE OF ANIMAL VERSUS COST OF INDIVIDUAL TREATMENT

<table>
<thead>
<tr>
<th>Stage</th>
<th>Weight</th>
<th>Value</th>
<th>Cost of injectable (Trim-Sulfa 3 days)</th>
<th>Cost of injectable (Pen + Dex 3 days)</th>
<th>Cost of injectable (Tulathromycin)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weaner</td>
<td>6–7 kg</td>
<td>$40</td>
<td>$0.11 (0.3%)</td>
<td>$0.22 (0.6%)</td>
<td>$0.75 (1.9%)</td>
</tr>
<tr>
<td>Nursery</td>
<td>25 kg</td>
<td>$65</td>
<td>$0.40 (0.6%)</td>
<td>$0.79 (1.2%)</td>
<td>$2.80 (4.3%)</td>
</tr>
<tr>
<td>Finisher</td>
<td>50 kg</td>
<td>$95</td>
<td>$0.80 (0.8%)</td>
<td>$1.57 (1.7%)</td>
<td>$5.60 (5.9%)</td>
</tr>
<tr>
<td></td>
<td>75 kg</td>
<td>$125</td>
<td>$1.20 (1.0%)</td>
<td>$2.36 (1.9%)</td>
<td>$8.40 (6.7%)</td>
</tr>
<tr>
<td></td>
<td>100 kg</td>
<td>$155</td>
<td>$1.60 (1.0%)</td>
<td>$3.14 (2.0%)</td>
<td>$11.20 (7.2%)</td>
</tr>
<tr>
<td></td>
<td>125 kg</td>
<td>$185</td>
<td>$2.00 (1.1%)</td>
<td>$3.93 (2.1%)</td>
<td>$14.00 (7.6%)</td>
</tr>
</tbody>
</table>
CHOOSING A TREATMENT

- Follow veterinarian’s recommendations
- Ideally use a decision tree
- Several products can be effective
  - More economical = multiple injections
  - Short withdrawal time (for late finishers)
  - One dose = reduces number of injections required = more costly
- Limit the number of antibiotics used to minimize multi-resistances
- Have necropsies done and submit tissue samples to obtain antibiograms in order to reassess which treatments are effective
  - Samples may be taken by a veterinarian, technician or the producer (always under veterinary supervision)
WHEN TO CALL THE VET

2% to 5% individual treatments per batch = NORMAL
75% success rate of individual treatments = NORMAL

ABNORMAL:

- Sequence of sudden mortalities occurring close together
- 3 deaths or more in 2 days (1,000-place building) regardless of cause
- Excessive coughing
- Increase in the number of lameness cases
  - Usually should decline from beginning to end
- Increase in the number of pigs to be isolated (regardless of the cause)
  - Healthy batches: 25 to 35 isolated pigs / 1,000 pigs in inventory (2.5−3.5%)
# Best Practices in Nursery and Finisher barns: Lessons learned from top producers

## Nursery barn

<table>
<thead>
<tr>
<th>Type</th>
<th>Stage</th>
<th>Treatment</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>In feed</td>
<td>(6–30 kg)</td>
<td>440 ppm CTC + 31,2 ppm Tiamulin</td>
<td>$670 / 1,000</td>
</tr>
<tr>
<td>In water</td>
<td>(15 kg)</td>
<td>Amoxicillin (5 days)</td>
<td>$160 / 1,000</td>
</tr>
<tr>
<td></td>
<td>(15 kg)</td>
<td>Neomycin (5 days)</td>
<td>$130 / 1,000</td>
</tr>
<tr>
<td></td>
<td>(15 kg)</td>
<td>Apramycin (5 days)</td>
<td>$840 / 1,000</td>
</tr>
<tr>
<td>Injectable</td>
<td>(15 kg)</td>
<td>Trim-Sulfa (3 days)</td>
<td>$25 / 100 (10%)</td>
</tr>
<tr>
<td></td>
<td>(15 kg)</td>
<td>Penicillin and Dexamethasone (3 days)</td>
<td>$50 / 100 (10%)</td>
</tr>
<tr>
<td></td>
<td>(15 kg)</td>
<td>Tulathromycin (1 dose)</td>
<td>$170 / 100 (10%)</td>
</tr>
</tbody>
</table>
## COST OF INDIVIDUAL VERSUS MASS TREATMENTS

### Finisher barn

<table>
<thead>
<tr>
<th>Type</th>
<th>Stage</th>
<th>Treatment</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>In feed</td>
<td>S-G-F (30–130 kg)</td>
<td>11 ppm Tylosin</td>
<td>$1,060 / 1,000</td>
</tr>
<tr>
<td></td>
<td>Starter (30–50 kg)</td>
<td>660 ppm CTC</td>
<td>$685 / 1,000</td>
</tr>
<tr>
<td></td>
<td>Starter (30–50 kg)</td>
<td>110 ppm Lincomycin</td>
<td>$880 / 1,000</td>
</tr>
<tr>
<td>In water</td>
<td>(50 kg)</td>
<td>Amoxicillin (5 days)</td>
<td>$520 / 1,000</td>
</tr>
<tr>
<td></td>
<td>(50 kg)</td>
<td>Tylvalosin (5 days)</td>
<td>$810 / 1,000</td>
</tr>
<tr>
<td>Injectable</td>
<td>(50 kg)</td>
<td>Trim-Sulfa (3 days)</td>
<td>$84 / 100 (10%)</td>
</tr>
<tr>
<td></td>
<td>(50 kg)</td>
<td>Penicillin and Dexamethasone (3 days)</td>
<td>$170 / 100 (10%)</td>
</tr>
<tr>
<td></td>
<td>(50 kg)</td>
<td>Tulathromycin (1 dose)</td>
<td>$560 / 100 (10%)</td>
</tr>
</tbody>
</table>

*Best Practices in Nursery and Finisher barns: Lessons learned from top producers*
Use of antibiotics (classes 1-2-3)

<table>
<thead>
<tr>
<th></th>
<th>41 nursery barn sites</th>
<th>81 finisher barn sites</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># sites</td>
<td>% sites</td>
</tr>
<tr>
<td>No antibiotics</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>In feed</td>
<td>37</td>
<td>90%</td>
</tr>
<tr>
<td>In water</td>
<td>24</td>
<td>59%</td>
</tr>
<tr>
<td>Injectable</td>
<td>34</td>
<td>83%</td>
</tr>
<tr>
<td></td>
<td>41</td>
<td></td>
</tr>
</tbody>
</table>

Report on antibiotic use (Cécile Ferrouillet)

Best Practices in Nursery and Finisher barns: Lessons learned from top producers
## Survey on Antibiotic Use in Quebec

### Nursery

<table>
<thead>
<tr>
<th>Treatment</th>
<th>DDDvet</th>
<th>Median DDDvet</th>
<th>Days Tx / 45</th>
<th>% pigs treated / day</th>
</tr>
</thead>
<tbody>
<tr>
<td>In feed</td>
<td>0 – 3,500</td>
<td>1,550</td>
<td>74.6</td>
<td>165%</td>
</tr>
<tr>
<td>In water</td>
<td>0 – 700</td>
<td>40</td>
<td>3.5</td>
<td>8%</td>
</tr>
<tr>
<td>Injectable</td>
<td>0 – 120</td>
<td>10</td>
<td>1.4</td>
<td>3% (30 / 1,000)</td>
</tr>
</tbody>
</table>

### Finisher

<table>
<thead>
<tr>
<th>Treatment</th>
<th>DDDvet</th>
<th>Median DDDvet</th>
<th>Days Tx / 114</th>
<th>% pigs treated / day</th>
</tr>
</thead>
<tbody>
<tr>
<td>In feed</td>
<td>0 – 1,100</td>
<td>250</td>
<td>16.2</td>
<td>14%</td>
</tr>
<tr>
<td>In water</td>
<td>0 - 190</td>
<td>25</td>
<td>3.1</td>
<td>3%</td>
</tr>
<tr>
<td>Injectable</td>
<td>0 - 10</td>
<td>2</td>
<td>0.2</td>
<td>0.18% (2 / 1,000)</td>
</tr>
</tbody>
</table>

Report on antibiotic use (Cécile Ferrouillet)

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Best Practices in Nursery and Finisher barns: Lessons learned from top producers
KEY POINTS (CONCLUSION)

- Prepare building/room adequately
- Accurate sorting at the beginning
- Observation (take the time!)
- Consistency
- Act quickly if there is a problem
- Isolate sick pigs quickly and systematically + individual treatment
  - Isolating the animal will increase not only its chances of survival but those of the other pigs in its original pen.
  - The later you wait to act, the more likely a limited infection will become significant at the herd level.