Improving monitoring and prevention on the herd level

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Context and stakes

• Important negative effect of production diseases on health and welfare of dairy cows (EFSA 2009)

• Organic farming systems do not always guarantee higher level of animal health compared to conventional systems (Sundrum 2001)

Aim for animal health promotion through preventive measures

Organic principles and regulation
General context of reduced use of antibiotics

BUT

Knowledge on animal health management effective and consistently implemented management practices on each farm (Leblanc et al. 2006)
To improve monitoring and prevention on the herd level by

✓ Developing a pro-active **monitoring** protocol
✓ Developing a pro-active **preventive** protocol

based on a **participatory approach** and adapted to **organic dairy** production.
General framework

Farmer and advisor define farm specific herd health alert thresholds and select indicators to be monitored

First level:
Regular monitoring and surveillance herd health

Monitoring herd health situation at least every 3 months by farmer and advisor

Second level:
Pro-active prevention protocol

Herd health alert triggered
Reinforce prevention protocols for the specific animal health problem

NO herd health alert triggered
Discuss the implementation of preventive protocols: if measures have been planned earlier
The monitoring tool

The co-construction of the monitoring tool
A multi-step conception process

Design comprehensive herd health monitoring tool based on recent literature & expert consultation (5 health topics, 16 indicators)

2. Stakeholder meeting to identify key issues that might impair farmers’ compliance to the tool

Result: identification of the need for an adaptable tool. Allowing farmers to use different health indicators than those proposed by scientist

3. Co-construction of monitoring tools by organic dairy farmers and their advisors in animal health

Changed our research question considerably
The proposed health monitoring indicators for calf health

<table>
<thead>
<tr>
<th>Health domain</th>
<th>Health indicators</th>
<th>Alert threshold</th>
<th>Frequency of monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calf health</td>
<td>Calf mortality, 0-24h</td>
<td>&lt;1.25%</td>
<td>every 3 months</td>
</tr>
<tr>
<td></td>
<td>Calf mortality, 1 day-weaning</td>
<td>&lt;1.25%</td>
<td>every 3 months</td>
</tr>
<tr>
<td></td>
<td>Occurrence of episodes of respiratory disease (yes/no)</td>
<td>&lt;25%</td>
<td>every 3 months</td>
</tr>
<tr>
<td></td>
<td><strong>Open for suggestions</strong></td>
<td></td>
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</table>
Farmers choose an advisor in animal health

Meeting on the farm

Discuss monitoring indicators already used

Discuss appropriateness indicators as proposed by scientists (5 health topics, 16 indicators)

1. Adopt scientists’ indicators
2. Propose alternative and/or additional indicators
3. No monitoring at all

Co-construction of a farm specific herd health monitoring tool using a selection of indicators

With 20 organic dairy farmers in France and 20 in Sweden
### Examples of chosen health monitoring indicators for calf health

<table>
<thead>
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<th>Health indicators</th>
<th>Alert threshold</th>
<th>Frequency of monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calf health</td>
<td>Unexplained cases of calf mortality female 0-30 days (excluding mortality due to calving)</td>
<td>&gt;2 unexplained cases</td>
<td>every 3 months</td>
</tr>
<tr>
<td></td>
<td>Number of cases of diarrhoea (all types included)</td>
<td>&gt;2 cases in a short period of time</td>
<td>every 3 months</td>
</tr>
<tr>
<td></td>
<td>Number of cases of respiratory problems</td>
<td>&gt;2 cases in a short period of time</td>
<td>every 3 months</td>
</tr>
<tr>
<td></td>
<td>Number of cases of an umbilical infection</td>
<td>&gt;2 cases in a short period of time</td>
<td>every 3 months</td>
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</tbody>
</table>
**On going test on farms**

*Participants: certified organic dairy farmers in 2 different contexts*

<table>
<thead>
<tr>
<th></th>
<th>France (n=20)</th>
<th>Sweden (n=20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average number of lactating cows</td>
<td>54 (min 18; max 82)</td>
<td>86 (min 35; max 403)</td>
</tr>
<tr>
<td>Organic regulation</td>
<td>EU regulation</td>
<td>EU + national regulation: monitoring</td>
</tr>
</tbody>
</table>

**Implementation on farm:**

✅ 4 visits in one year = farmer + advisor (scientist excluded)
Results from the first farm visit

*Description of co-constructed monitoring plans and discussion*

• Combination **unique to each farm** of indicators adopted for herd health monitoring
• **Not one farmer** accepts the combination of indicators exactly as proposed by scientists
• **Acceptable monitoring tool**: all farmers (except for 3 out of the 40) intend to monitor 5 health domains simultaneously

→ Confirms the need expressed by stakeholders for adaptable tools, because it is for scientists impossible to design farm specific tools (Darré et al. 2004)

Q: Is it the role of scientists to design tools that are ready to use?
Results from the first farm visit

Description of co-constructed monitoring plans

Distribution of the farms according to the number of surveillance indicators chosen per health topic. FR= France, SE= Sweden.
The preventive tool

The co-construction of the preventive tool
A multi-step conception process

Design comprehensive herd health preventive tool based on recent literature

Expert consultation

Stakeholder meeting to identify key issues that might impair farmers’ compliance to the tool

Result: identification of the need for an adaptable tool. Allowing farmers to implement corrective actions adapted to their system
An extract of the calf health preventive protocol

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Objectives prevention protocol</th>
<th>Additional observations to confirm the presence of the risk factor</th>
<th>Suggestions to look into…</th>
</tr>
</thead>
</table>
| Calving and first hours                         | C4: Insufficient intake of colostrum of good quality  
C4: Ensuring the transfer of passive immunity to the calf  
C4.1: with a sufficient intake under all circumstances: >200 g of immunoglobulins in the 6h after calving  
C4.2: with an intake of colostrum whatever the calving time (during the night) | Weigh the colostrum, checking for immunoglobulin quantity:  
Very good colostrum > 100g Ig/L  
Fairly good colostrum from 50 to 100g Ig/L  
Weak colostrum < 50g Ig/L | Recommendations:  
2L in the 2 hours after calving and 2 times 4L in the next 24h after calving. |
Results to come

Evaluation of the herd health program on farms

• Questionnaire sent to all farmers and advisors
  – Use of the monitoring protocol
  – Use of the preventive protocols
  – Overall impression
  – Evolution of the working relationship

• Effectiveness of the tool to improve the animal health status
  – Farmer and advisor’ point of view
  – Data analysis (difficult to conclude)
Take home message

• Importance of the participatory approach: farmers should participate in the tool’s design
  ➢ abandon ‘one-size fits all’-tools
  ➢ stimulates farmers’ intention for comprehensive herd health monitoring

• Importance of the regular monitoring to anticipate deteriorating health situation

• Importance of the regular visits between farmer and advisor to exchange on herd health

• Effectiveness of the tool to improve the animal health status?
Thank you for your attention