The use of monthly herd-test-day solutions of test-day model in dairy herd management web-tool, “Maitoisa”

35th ICAR Session and INTERBULL Meeting
New strategies for milk recording and testing

Introduction
• When the breeding values of dairy animals are estimated, it is especially important to exclude the misinforming effects of diverse herd management practices.
• Newest method for this is the test day model whose solutions of random effect herd-year-month and fixed effect herd-year combined as herd solutions can be used to describe the management level of a dairy herd.

Why herd solutions?
• Other parts of test day model:
  • Fixed effects: age at calving, days carried calf, year-month, the shape of the lactation curve
  • Random effects: daily breeding value, daily non-genetic animal effect and across lactation repeatability.
• These represent the elements that a herd owner can’t change at short notice

Solutions – deviations
• Herd solutions of milk amount (milk deviation, expressed as kg day⁻¹), and protein and fat concentration, (protein and fat deviation, expressed percentage units) and somatic cell count (1000 units/100 ml) are used in the “Maitoisa”.
• The herd solutions of primiparous and multiparous cows are presented separately.
• Herd solutions represent these factors in the herd management that can be changed quite rapidly
• Herd solutions are available to all the herds that participate in milk recording

Distribution of herd solutions

<table>
<thead>
<tr>
<th>Animal group</th>
<th>Lower 10%</th>
<th>Upper 10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk, prim.</td>
<td>-3.8</td>
<td>3.2</td>
</tr>
<tr>
<td>Milk, multi.</td>
<td>-4.2</td>
<td>3.8</td>
</tr>
<tr>
<td>Prot.con, prim.</td>
<td>-0.20</td>
<td>0.17</td>
</tr>
<tr>
<td>Prot.con, multi.</td>
<td>-0.16</td>
<td>0.13</td>
</tr>
<tr>
<td>Fat.con, prim.</td>
<td>-0.51</td>
<td>0.61</td>
</tr>
<tr>
<td>Fat.con, multi.</td>
<td>-0.49</td>
<td>0.59</td>
</tr>
<tr>
<td>SCC, prim.</td>
<td>37</td>
<td>-22</td>
</tr>
<tr>
<td>SCC, multi.</td>
<td>58</td>
<td>-34</td>
</tr>
</tbody>
</table>

Utilisation of herd solutions
• 1. Recognition of continuous management problems.
• 2. Identification of seasonal difficulties in the herd management
• 3. Successful raising of replacement heifers and management of primiparous cows
• 4. Somatic cell count level
Possible explanations for continuous and seasonal problems

1. Reduced allowance of forage
2. Poor quality of forages used
3. Inadequate use of concentrates in relation to forage quality
4. Insufficient use of protein concentrates
5. Combinations of all above

Very inadequate feeding

Parity difference 1.

Parity difference 2.

Summer problem

Autumn problem
New strategies for milk recording and testing

High somatic cell count

- The farmers and advisers who has had previously utilised Windows programs have considered the use of Maitoisa as straightforward.
- The complicated calculation method of the deviations have made them difficult to understand and interpret.

Conclusions

- “Maitoisa” is most useful when a herd owner wants to find out the possible existence of an economically important management problem in the dairy herd.
- Rapid reactions to the discovered problems are not yet possible, it would demand at least fortnightly calculations.

User comments

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