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

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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

Animal group	Lower 10%	Upper 10%
Milk, prim.	-3.8	3.2
Milk, multi.	-4.2	3.8
Prot.con, prim.	-0.20	0.17
Prot.con, multi.	-0.16	0.13
Fat.con, prim.	-0.51	0.61
Fat.con, multi.	-0.49	0.59
SCC, prim.	37	-22
SCC, multi.	58	-34

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

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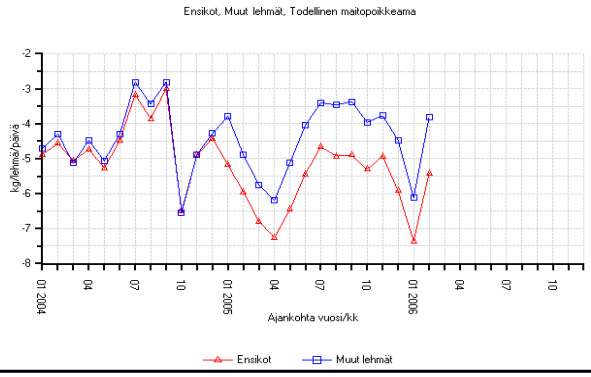
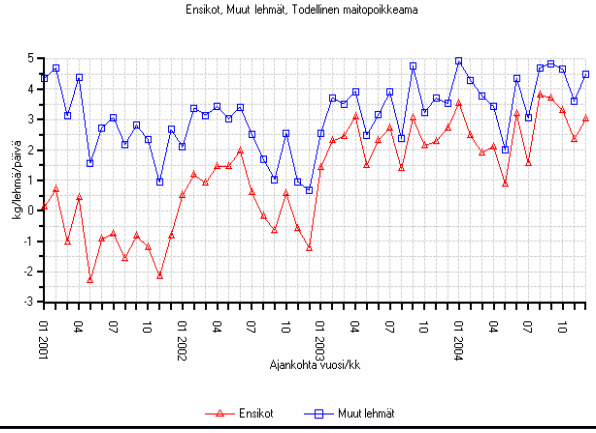
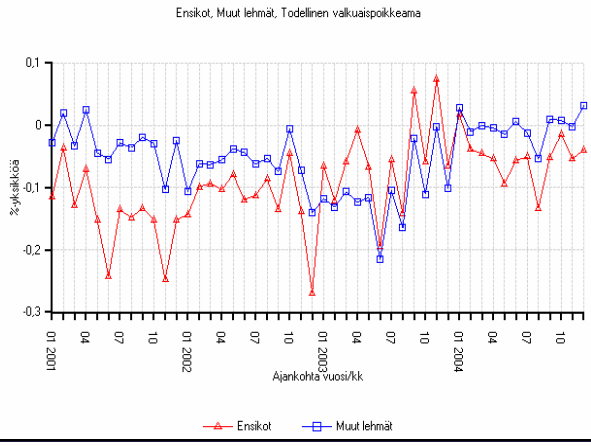
Very inadequate feeding



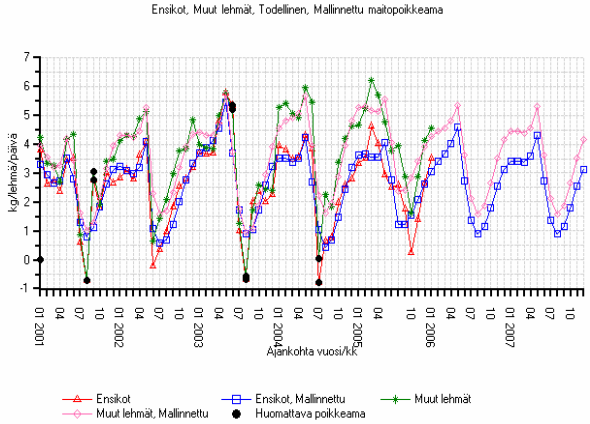
Parity difference 1.



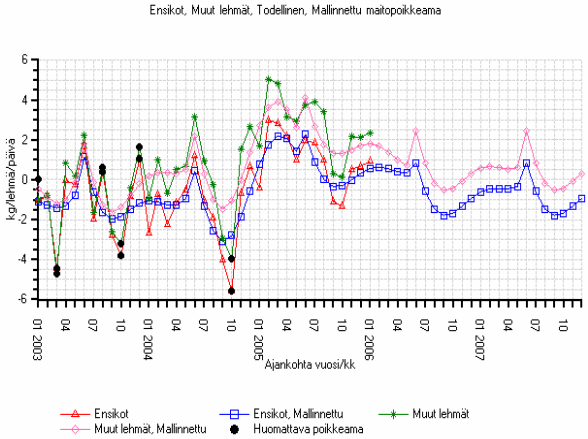
Parity difference 2.



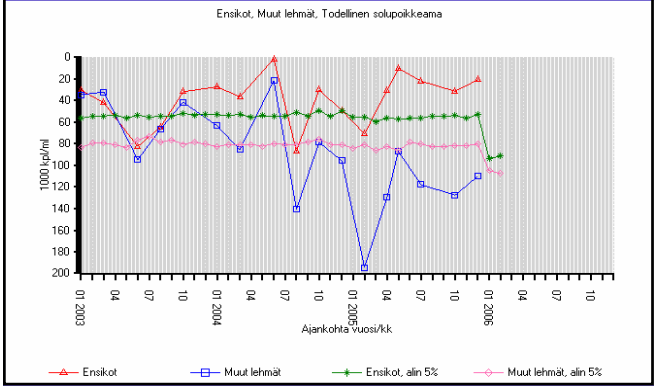
Summer problem



Autumn problem



High somatic cell count



User comments

- 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

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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.

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