Session:09, Abstract 3479, Poster 14, E-mail adress: daina.jonkus@llu.lv

Cows adaptation for a voluntary milking robot system

D. Jonkus, D. Kairisa, L. Paura, I. Muizniece, I. Eihvalde, E. Guša
Institute of Agrobiotechnology, LUA Faculty of Agriculture, Latvia
Lielā 2, Jelgava, LV 3001, Latvia

Objectives and Aim

- In order to keep milking cows two technologies are used in all European countries: hitching and free pasturing.
- At present the most popular cow keeping system in Latvia is hitching, which is due to the proportion of small herds in the country.
- However, the open-minded dairy processors are using the free pasturing of cows by using robots for their milking. This has a lot of advantages, for example, a free regime for milking, less stress and the yielded milk of a bigger quality.
- The aim of the study was to analyze the new system for cow's keeping and milking and its influence to the cow's milk yield.

Material and Methods

- Place: new complex of milking cows at the LUA Research and Study Farm "Vecauce";
- Milk yield and milking time per day were collected from 4 group of milking cows;
- The main selection criteria when grouping the cows were the shape of the udder and the milk yield.

Table1. Characteristics of experimental groups of cows

Group	Date of cow transfer	n	Lactation	Day of lactation	Milk yield in June, kg
1.	28.06.07	21	1.8	140	28.3
2.	02.07.07.	10	3.3	100	28.2
3.	05.07.07.	20	1.6	56	23.7
4.	10.07.07.	23	2.0	80	23.6

Results

- On the first day in the new keeping conditions the average milk yield from a cow was only 6.8 kg, in comparison with the supervisory control milk yield in June (28.3 kg).
- On the second day the average milk yield from cows of the research groups essentially increased (16.4 kg; $p<0.05$).
- On the third and the seventh day the average milk yield continued to increase from 16.8 to 25.9 kg ($p<0.05$).

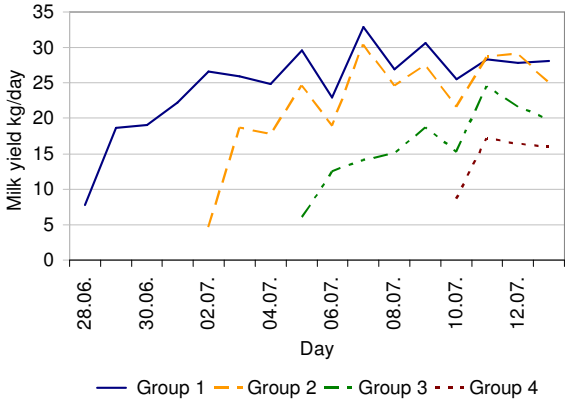

Fig.1. Milk yield during experiment

- Milking frequency was increased to 4 times per day, however typically 2-3 times per day was achieved.
- In the 2nd day of experiment 24 cows (32.4%) had milking frequency 1 time per day. During the next day of experiment cows with less milking frequency were decreased.

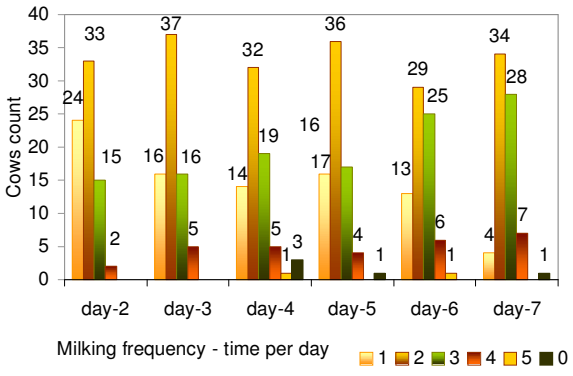

Fig.2. Cows distribution by milking frequency

- The smallest milk yield – 10.4 kg had cows with milking frequency one time per day, but the higher – 26.3 kg cows with milking frequency 4 time per day;
- During the next 5 days of the experiment milking frequency was from 2.1 till 2.5 time per day with average milk yield 19.2 - 23.4 kg ($p<0.05$).
- Correlation between milking frequency and milk yield was positive ($r=0.35$).

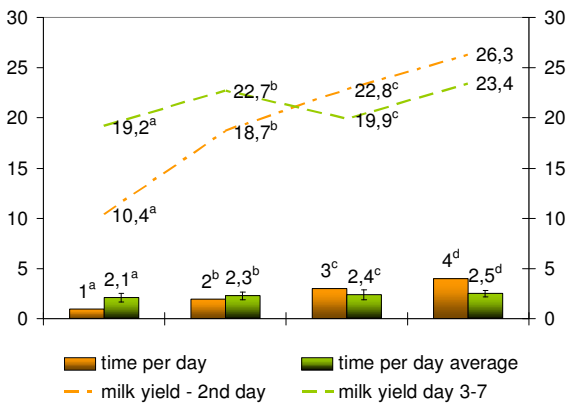

Fig.3. Milk yield and milking time per day in the second and the next days of experiment

Conclusions:

- On the first day in the new keeping conditions cows went to the milking robot only once, moreover the most of them had to be goaded there.
- After evaluating the acquired results it may be considered that the cows of the research group had good adaptation ability, since the milk yield became normal already on the seventh day after the change of the technology.