

A multi-arm randomized field trial evaluating support strategies to improve udder health in Swiss dairy herds

A. Tschopp¹, M. Reist¹, T. Kaufmann², M. Bodmer³, L. Kretzschmar³, D. Heiniger³, B. Berchtold³, F. Wohlfender¹, M. Harisberger¹, R. Boss⁴, D. Strabel², M.-E. Cousin⁵, A. Steiner³, and B. H. P. van den Borne¹
¹Veterinary Public Health Institute, Vetsuisse Faculty, University of Bern, 3097 Liebefeld, Switzerland ²Bovine Health Service, AGRIDEA, 8315 Lindau, Switzerland ³Clinic for Ruminants, Vetsuisse Faculty, University of Bern, 3012 Bern, Switzerland ⁴Agroscope Liebefeld-Posieux Research Station ALP, 3003 Bern, Switzerland ⁵Consumer behavior, Institute for Environmental Decisions (IED), ETH Zürich, 8092 Zürich, Switzerland

Key words

Mastitis, dairy cow, intervention, management.

Aim of the study

Quantify the effectiveness of a specialist advice on the udder health in dairy herds and to compare 3 different support strategies implementing this advice with a negative control group.

Material and methods

One hundred Swiss dairy farms with a yield-corrected bulk milk somatic cell count (BMSCC) between 200,000 and 300,000 cells/ml in 2010 were recruited for a 1-year multi-arm randomized field trial. The herds were visited between September and December 2011 to evaluate their udder health management and were randomly allocated to 4 study arms. The negative control study arm received neither recommendations nor any active support. The remaining 75 farmers received a herd-specific report with recommendations to improve the herds' udder health management. The positive control study arm received no further active support during 2012. The veterinarian study arm additionally received support in the form of monthly visit by their private practitioner. Finally, the study group study arm received support in the form of bimonthly study group meetings where different issues concerning udder health were discussed. One year later, the implementation of the recommendations was re-assessed.

Results and significance

Of the recommendations being given, 44.3% were totally, 23.1% were partially and 32.6% were not implemented. No difference between the 3 study arms in implementing the advice was found. The farmers randomly assigned to the group they preferred to be in before enrollment implemented significantly more recommendations than farmers assigned to an intervention group they initially preferred not to be in. No decrease in prevalence of cows with a composite SCC $\geq 200,000$ cells/mL could be observed in herds with a BMSCC $\geq 200,000$ cells/mL at the start of study. However, the 3 support strategies prevented an increase in the prevalence of cows with an elevated SCC in herds with BMSCC $< 200,000$ cells/mL at the start of the study. Moreover, the farmers in the study group study arm significantly decreased the incidence rate of treated mastitis cases in their herds while maintaining the prevalence of cows with a composite SCC $\geq 200,000$ cells/mL constant.

Publications, posters and presentations

Tschopp A. et al (2013) - Evaluating support strategies to improve udder health in Swiss dairy herds – a one year randomized field trial. In: Proceedings of Buiatrissima, Berne, Switzerland (Poster).
Tschopp A. et al (2013) - Improving udder health in Swiss dairy herds – a one year randomized field trial. In: Proceedings of the European Buiatrics Forum, Marseille, France (Presentation).
Tschopp A. et al (2013) – Improving udder health in Swiss dairy herds: epidemiological effects. VPH Annual Conference 2013, Berne, Switzerland, (Presentation).
Cousin M.-E. et al (2013) – Improving udder health in Swiss dairy herds: socio-psychological effects. VPH Annual Conference 2013, Berne, Switzerland, (Presentation).
Tschopp A. (2014) A multi-arm randomized field trial evaluating support strategies to improve udder health in Swiss dairy herds. Dissertation, Veterinärmedizinische Fakultät, Universität Bern. In preparation.
Tschopp A. et al (2014) - A multi-arm randomized field trial evaluating support strategies to improve udder health in Swiss dairy herds. J. Dairy Sci. In preparation.
Cousin M.-E. et al (2014) – Effects of an udder health intervention study on farmers' motivation, prevention behavior and mastitis management. In Proceedings of the SVEPM Annual Conference, Dublin, Ireland. In preparation.

Project 1.12.01

Project duration November 2011 – December 2013