

Effects of a herbal extract in addition to a standard therapy on short term development of subclinical ketosis

Background

In early lactation, dairy cows face a high prevalence rate of subclinical ketosis due to energy deficiency combined with reduced appetite [2,3]. Nevertheless, knowledge about subclinical ketosis therapy, in particular with appetizing herbs, is lacking [1].



Method

- Participation of 25 Swiss and German dairy farms
- Weekly tests of cows between 5-50 days in milk for β -hydroxybutyrate in blood (BBHB)
- Threshold for subclinical ketosis: ≥ 1.0 mmol/l BBHB
- Randomization of 84 cows to three treatment groups (SP-H, SP, PL)
- Observation period of two weeks (28 milking times) after onset of treatment
- Observed parameters: BBHB, milk acetone concentration, milk protein and fat, milk yield, BCS



Gentiana lutea, L.

Treatments

SP-H	SP	PL
Sodium propionate (120 g) Extract of seven herbs (drug equivalent 13.5 g) <i>Gentianae radix</i> , <i>G. lutea</i> , L. <i>Cichorii radix</i> , <i>C. intybus</i> , L.	Sodium propionate (120 g)	Placebo
Diluted with water, coloured by organic molasses (Dose = 350 ml) Application twice a day, for four days		



Cichorium intybus, L.

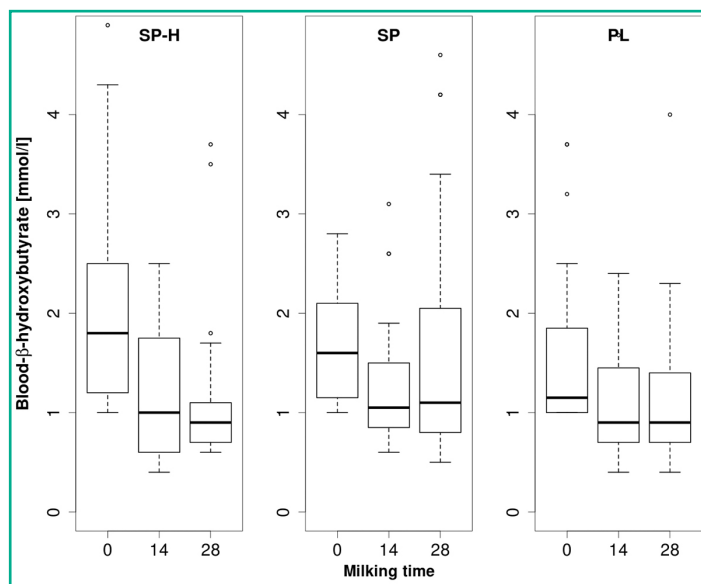


Fig.1: BBHB concentration at milking time 0, 14, 28 for treatment groups SP-H, SP, PL. A difference by trend was found between group SP-H and SP ($P = 0.06$) at milking time 28. Value of milking time 0 is the reference before onset of treatment.

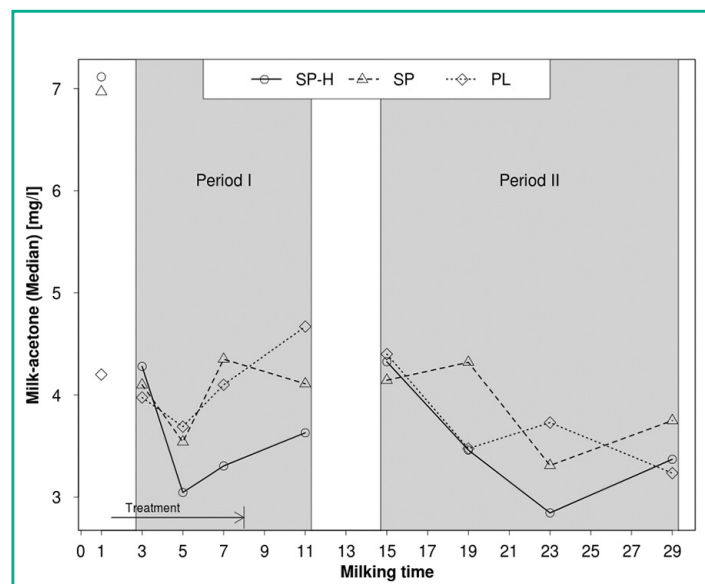


Fig.2: Median milk-acetone for group SP-H, SP, PL. Treatment was conducted twice a day shortly after milking times 1-8. During period I the development of group SP-H is significant different to curves of groups SP ($P = 0.035$) and PL ($P < 0.001$).

Conclusion

Compared to placebo or pure sodium propionate a combination of sodium propionate with herbal extracts seems to have slight advantages in a four days therapy of subclinical ketotic fresh cows. In future studies, a survey of a pure herbal extract with variation of dose and duration of application, as well as an additional monitoring of feeding behavior, would be of interest.

Results

The developments of BBHB and milk acetone concentration are shown in Figures 1 and 2. There were no differences concerning the other recorded parameters.

Literature [1] Gordon, J.L., LeBlanc, S.J., Duffield, T.F. (2013): Ketosis treatment in lactating dairy cattle. *Vet. Clin. Food Anim.* 29: 433-445 [2] McArt, J.A.A., Nydam, D.V., Ospina, P.A., Oetzel, G.R. (2011): A field trial on the effect of propylene glycol on milk yield and resolution of ketosis in fresh cows diagnosed with subclinical ketosis. *J. Dairy Sci.* 94: 6011-6020 [3] Suthar, V.S., Canelas-Raposo, J., Deniz, A., Heuwieser, W. (2013): Prevalence of subclinical ketosis and relationships with post-partum diseases in European dairy cows. *J. Dairy Sci.* 96: 2925-2938. Pictures: <http://www.ulm.de/buecher/fnkb1543/>