Effect of feeding management on thyroid status and energy metabolites in periparturient dairy cows

Irena Celeska[1*], Danijela Kirovski[2], Igor Ulchar[1], Igor Dzadzovski[1], Miroslav Radeski[1], Vlatko Ilieski[1]

[1]Faculty of Veterinary Medicine Skopje, University St Cyril and Methodius, Macedonia,
[2]Faculty of Veterinary Medicine, University of Belgrade Serbia
iceleska@fvm.ukim.edu.mk

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Introduction

The study revealed the effect of feeding management on basal metabolism rate.

Aims of the study

- Assessment of thyroid status on both farms
- Estimation of energy balance on both farms
- Effect of fT4 on basal metabolism rate on both farms

Materials and methods

- Total n=64 multiparous high yielding Holstein cows
- from two dairy farms with different feeding strategy
- farm A: semi-intensive and pasture feeding management
- farm B: intensive feeding management with concentrate prepared in accordance with stage of productive cycle

Materials and methods

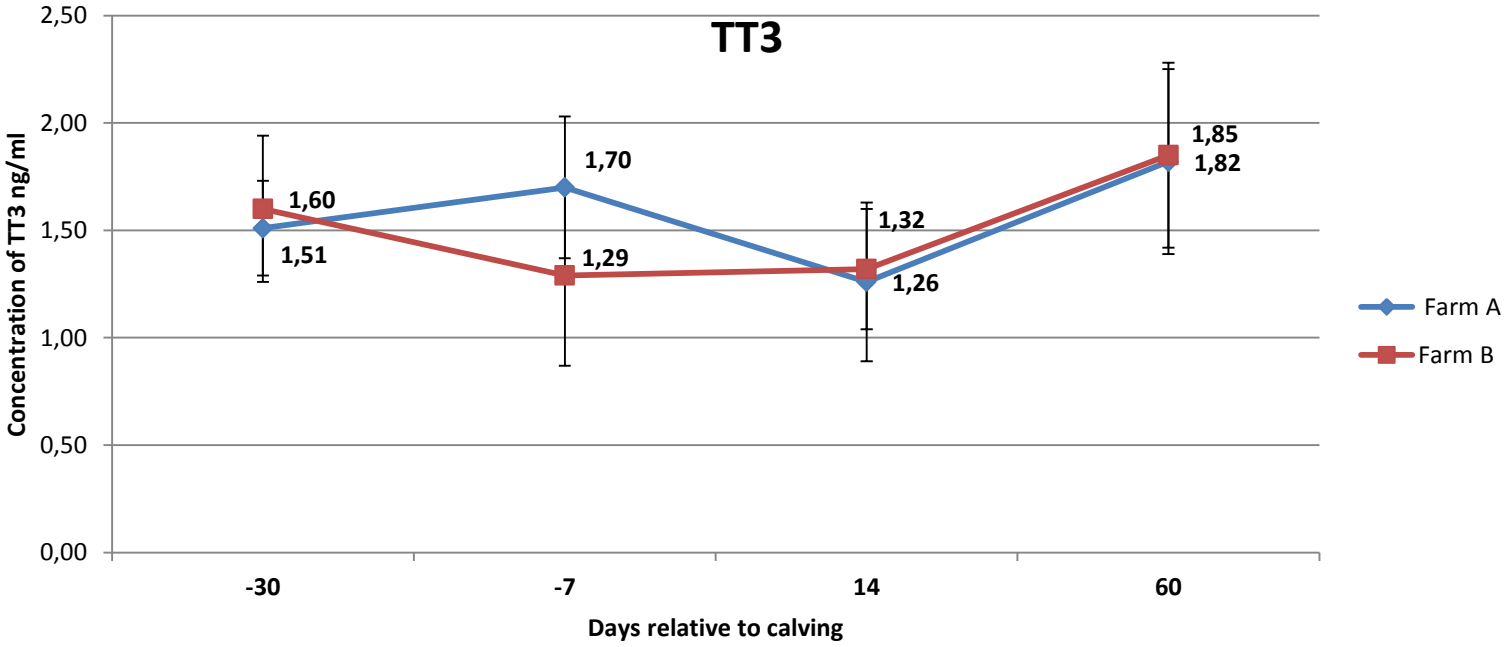
Blood samples were taken from v. jugularis at days 30 and 7 before expected time of calving, as well as at days 14 and 60 after calving.

Glucose
NEFA
BHBA

tT3
tT4
fT3
fT4

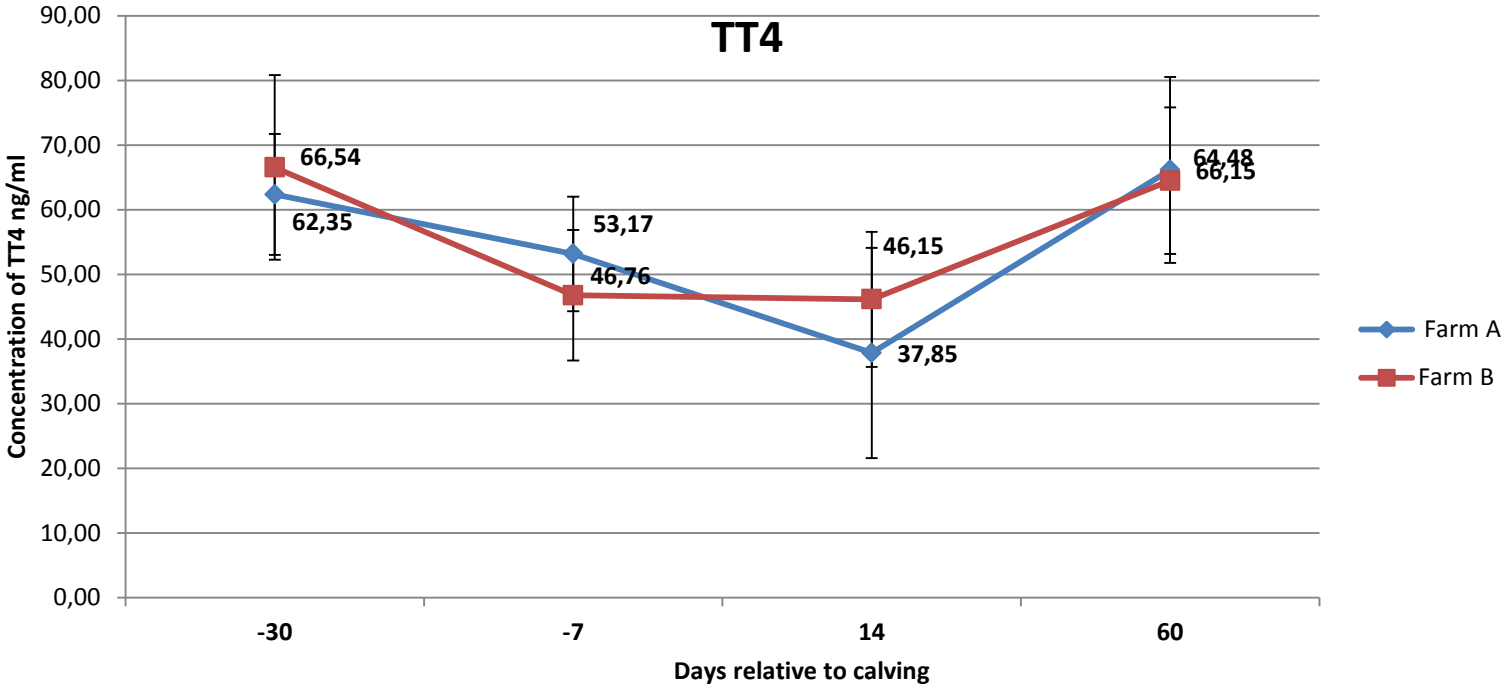
Results and Discussion

Concentration of TT3



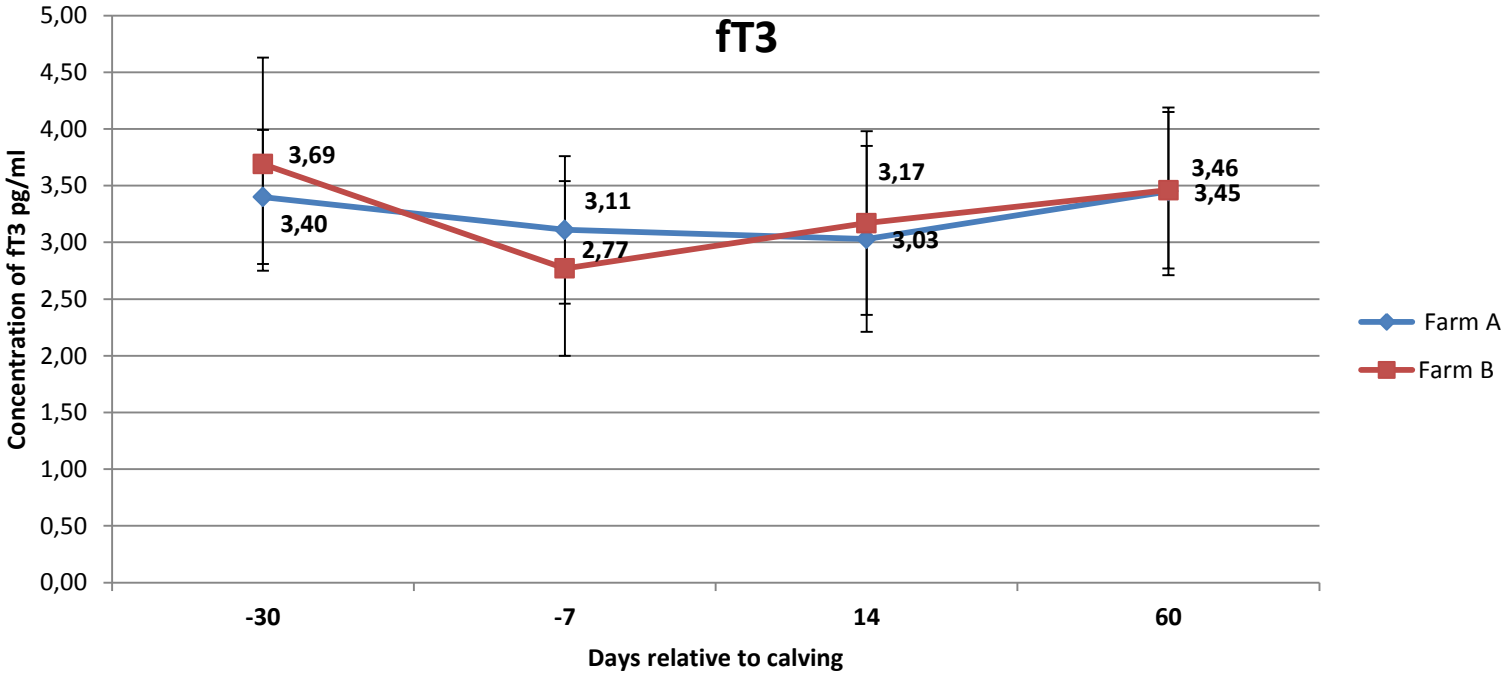
Results and Discussion

Concentration of TT4



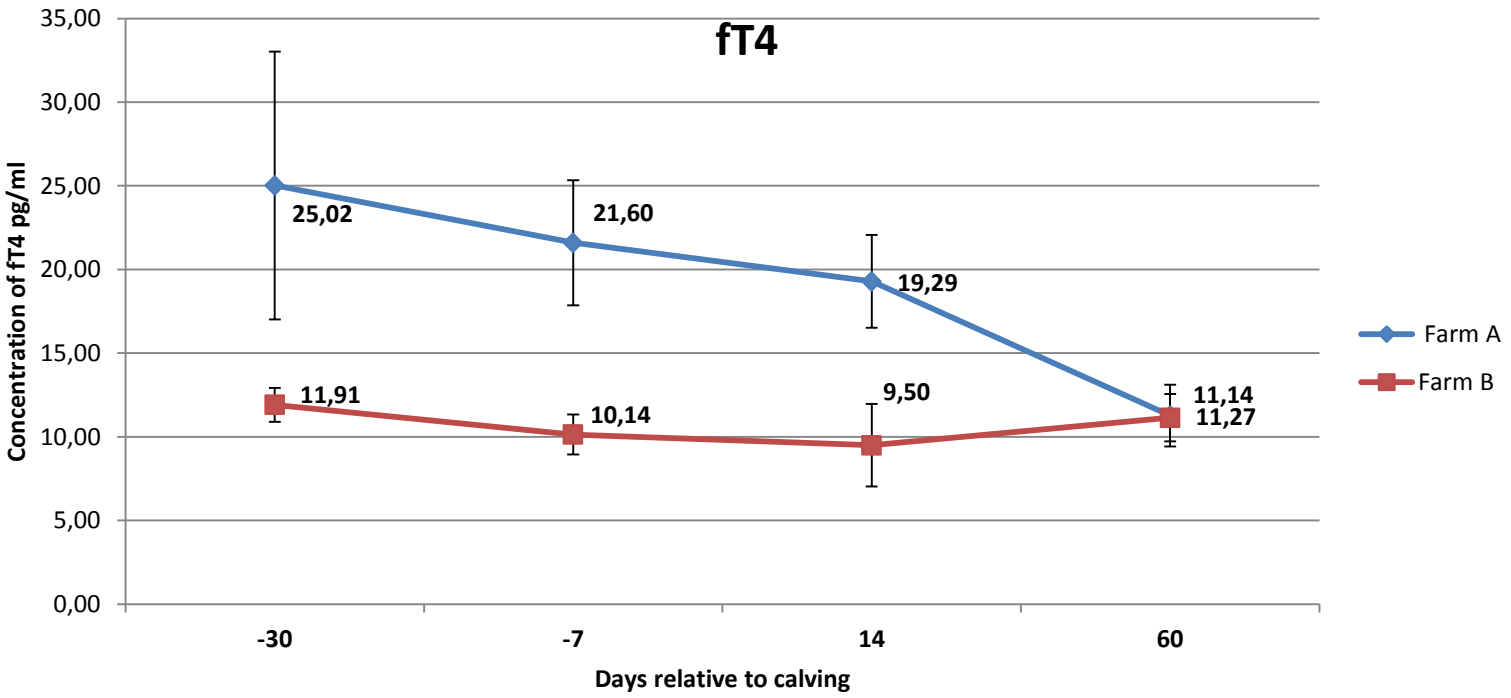
Results and Discussion

Concentration of fT3



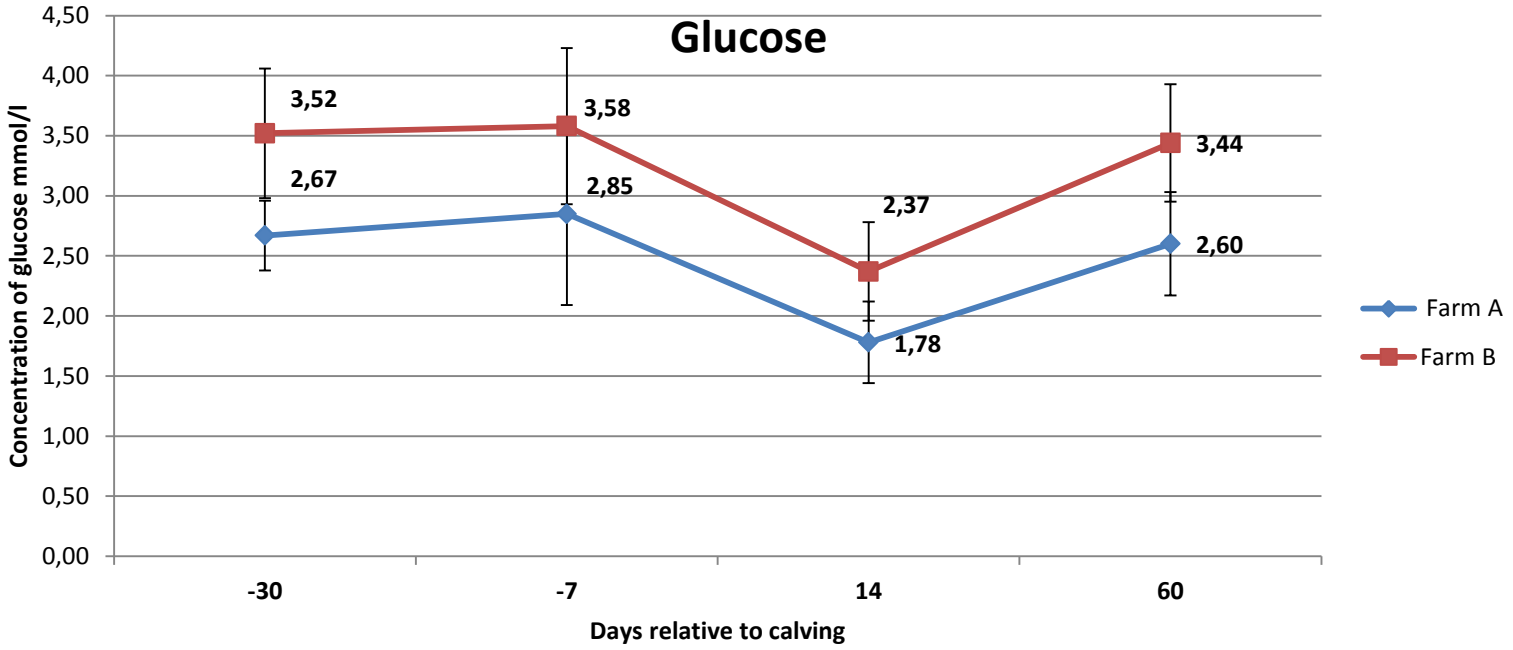
Results and Discussion

Concentration of fT4



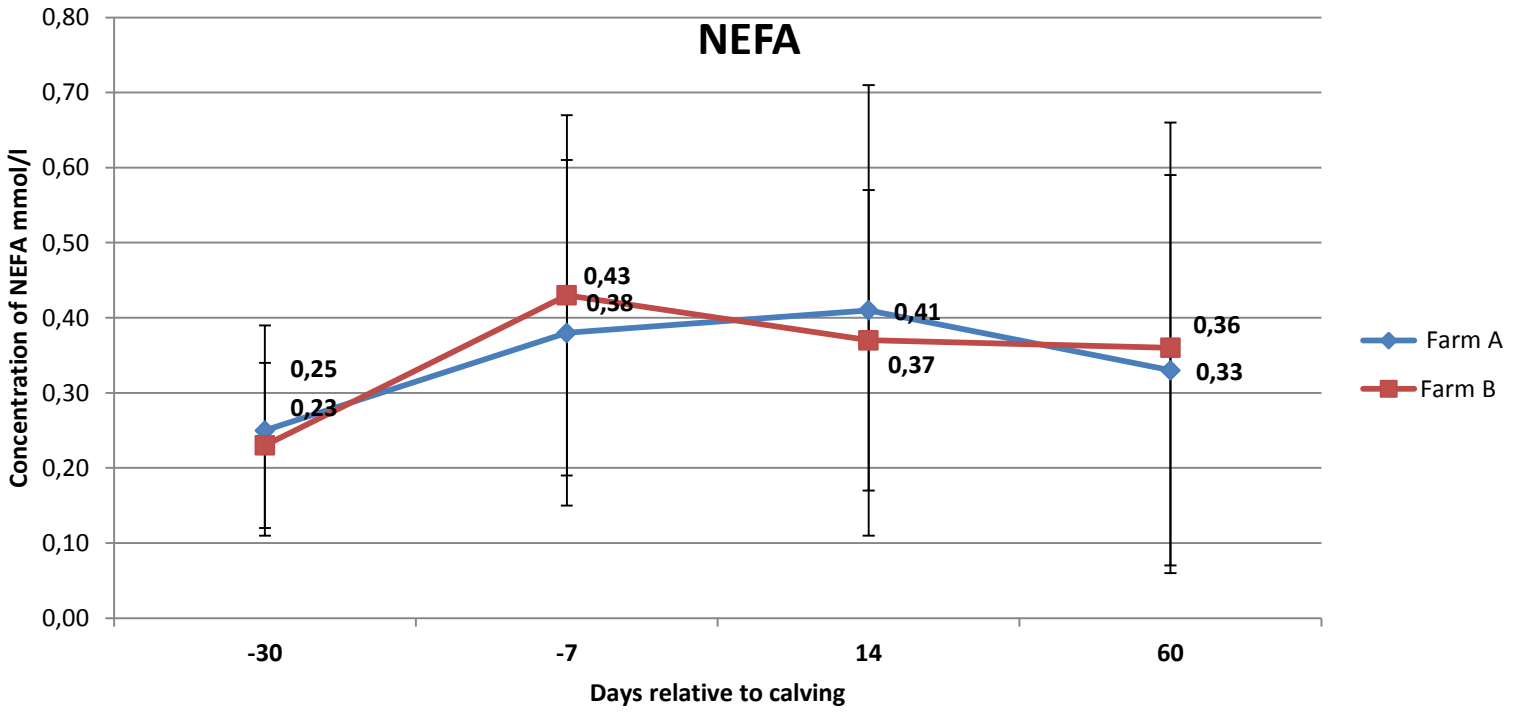
Results and Discussion

Concentration of Glucose



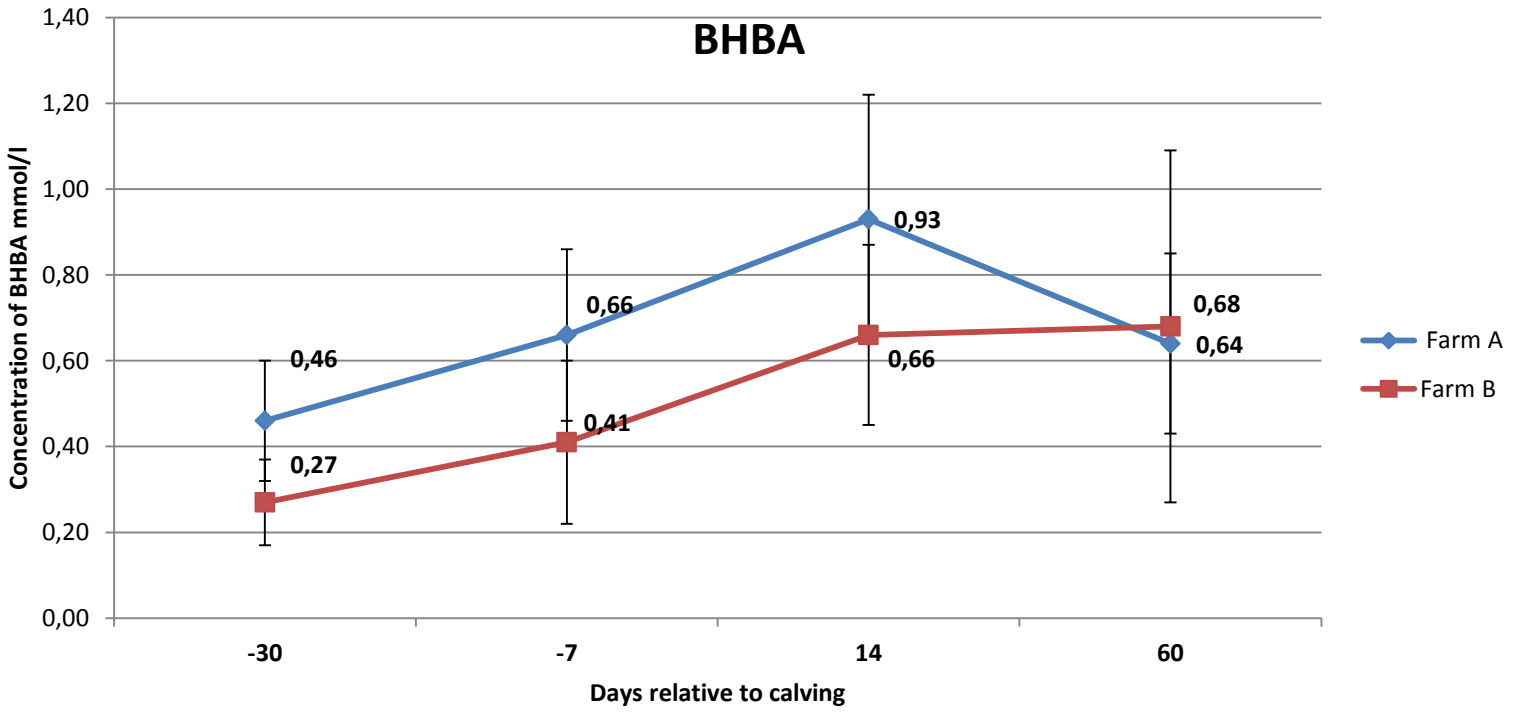
Results and Discussion

Concentration of NEFA



Results and Discussion

Concentration of BHBA



Conclusion

Physiological bioactivity of fT_4 may play important role in metabolic rate of dairy cows during transition period by increasing oxidation of glucose and enhancing hepatic ketogenesis.

Due to importance of adequate transition of dairy cows from late pregnancy to early lactation period, this inappropriate adaptation provoked by inadequate feeding strategy may be significant risk factor that could result metabolism disturbance and consequently decreased milk production and increased incidence of metabolic diseases in pariparturient dairy cows.

Thank you for your attention!

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