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Vespa

Plasma α-tocopherol content and its relationship with milk somatic cells count in Italian commercial herds.

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ABSTRACT

This work was aimed to investigate relationship between plasma vitamin E concentration and milk somatic cell count in healthy cows in commercial herds. 49 multiparous cows from two commercial dairy herds were monitored from the day of dry off until 90 DIM. BCS was assessed and blood samples were collected at dry off, day 0, 30, 60 and 90 postpartum. Plasma was analyzed for α-tocopherol content. Quantification of NEFA, BOHB, Zn and Se was performed in serum samples. Milk production and composition was obtained from routinely test-day of Italian milk producers association. Somatic Cell Score (SCS) was calculated and included in the dataset. Analysis of data was performed using MIXED repeated and CORR procedures of SAS.
We did not observe a correlation between plasmatic vitamin E and somatic cell score, and this can be explained by the low level of somatic cell score (averages 1.64 and 1.26). The lowest value of vitamin E was observed at parturition (1.64 µg/ml and 1.95 µg/ml). A significant (P<0.01) negative (-20%) correlation was observed between NEFA serum content and α-tocopherol plasma concentration. Serum selenium content was positively correlated (+42%, P<0.0001) to zinc concentration. Grouping cows on the basis of their plasma α-tocopherol content higher or lower than 3 µg/mL at dry off, SCS at 30 and 60 DIM tended to be higher in lactating animals with lower content of α-tocopherol (1.12 vs. 1.72, P=0.18 at 30d; 0.92 vs. 1.72, P=0.07 at 60d). However, plasma α-tocopherol content at dry off could be usefully correlated with somatic cell count in fresh cows.

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