

TECH TALK

B Vitamins and Choline for Transition improved health and productivity of transition cows receiving choline-only supplement

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Commercial trial, New York, USA

OBJECTIVE

To evaluate the benefits of supplementing a **Rumen-Protected blend of B Vitamins and choline (RPBV)** as a replacement for a commercially available choline-only product during the close-up period, and their effects on health parameters and productivity in dairy cows during early lactation.

MATERIALS AND METHODS

- The trial was conducted on a large dairy farm located in New York with Holstein cows housed in a free stall facility
- The **Jefo Rumen-Protected B Vitamins** for Transition contained riboflavin, folic acid, cobalamin and choline (**RPBV**)
- Cows received the B vitamin blend 21 days before calving at 100 g/head/day
 - Supplement was incorporated into the TMR
- The TMR was based on corn silage and haylage
- The trial was conducted as a switchback design (off-on-off design; Table 1)
- Lactation performance (milk production, milk fat percentage, milk protein percentage and somatic cell counts) were evaluated using data from three monthly tests
 - Only cows included in all three tests were used for analysis
- Health records were evaluated for the first 30 days after calving
- Culling rates were evaluated

Table 1. Trial Design

Period 1	Period 2	Period 3
Protected Choline	RPBV	Protected Choline
June 2023 - August 2023	September 2023 - February 2024	February 2024 - May 2024

- Period 1 & 3 = Protected choline group: 517 calvings
- Period 2 = **RPBV** group: 457 calvings

Statistical analysis

The difference in lactation numbers did not reach statistical significance ($P>0.05$). Lactation number was therefore not used as a covariable in the statistical analysis.

Differences in health incidence rates were evaluated using Fisher's Exact Test ($C\chi^2$).

Milk production results were compared by cow as a randomized complete block.

RESULTS

RPBV cows had decreased prevalence of retained placenta (RP; $P<0.001$), ketosis <15 DIM ($P=0.0384$), and both pneumonia ($P=0.003$) and mastitis <30 DIM ($P=0.0295$; Figure 1).

Test cows showed increased ECM by the 3rd test date ($P=0.002$; Figure 2).

RPBV cows had a lower removal rate from the herd prior to first breeding (-8.21%) and confirmed pregnancy (-3.44%).

Figure 1. Prevalence of disease and culling rate.

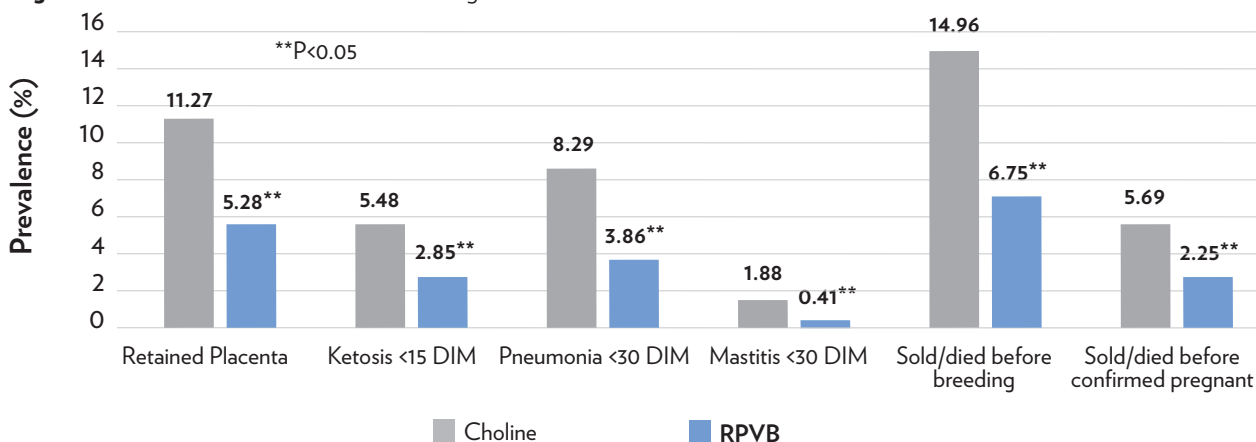
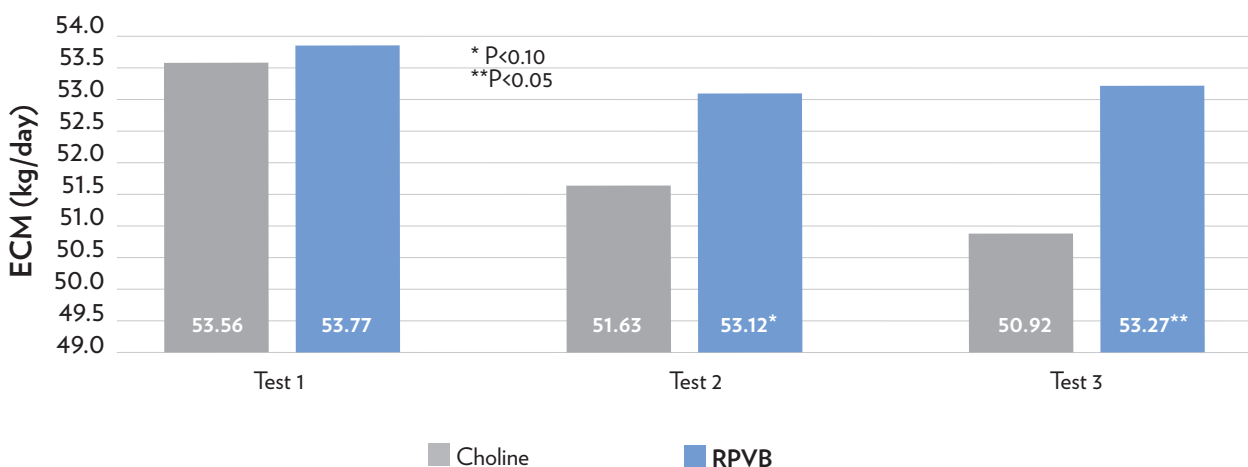


Figure 2. ECM values from tests 1, 2 and 3.



CONCLUSION

Rumen-Protected B Vitamins (RPBV) reduced both disease prevalence and culling rate while increasing milk yield. Results from this trial demonstrate that a blend of B vitamins and choline provides greater benefits than choline supplementation alone.