



# Female dairy calves fed with a **Rumen-Protected B Vitamin Blend** around weaning have a better chance of reaching first lactation and improving milk production

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## INTRODUCTION

- Young calves are subjected to many stressors in their early lives, which can affect their health, growth and future milk production
- B vitamins are enzyme co-factors that facilitate many metabolic processes necessary for supporting health and growth of animals
- Supplementing young female replacement heifers with B vitamins can boost immunity, help them successfully reach their first lactation, and maximize future milk production
- *Summary of Roszkos et al., 2022:* In the previous trial, calves that received RPBV gained 25% more than the control calves ( $P < 0.001$ ) during the 42 d duration of the trial

## OBJECTIVE

To evaluate the carry-over effect of previous treatment of Rumen-Protected B Vitamins (**RPBV**) on female replacement heifers.

We hypothesize that female calves that received RPBV around weaning will have a better chance of reaching first lactation and produce more milk (up to 97 DIM).

## MATERIALS AND METHODS

- The previous trial allocated 80 female Holstein dairy calves into 4 consecutive batches, 20 calves each, based on their date of birth
- The feeding program is as presented:

Liquid feed program	Day 1 – 4	Day 5 – 67	Day 68 - 75
Type of liquid feed	Dam whole milk	3 L of MR 2x daily	1.5 L MR 2x daily
Solid feed program	Day 10 – 30	Day 31 - weaning	After weaning
	Calf concentrate	Mash	TMR

MR = Milk replacer; TMR = Total mixed

- Commercial starter concentrate (SC, pellets) was fed without (Control) or with **3 g/h per day of a blend of RPBV** (RPBV; B1, B5, B6, B8 and B9)
- The RPBV was included in the mash diet 21 d before weaning and 21 d after weaning in the TMR (total 42 d)
- The animals previously used in the calf trial that remained on the farm were followed through their lactation (up to 97 DIM)

### Statistical analysis:

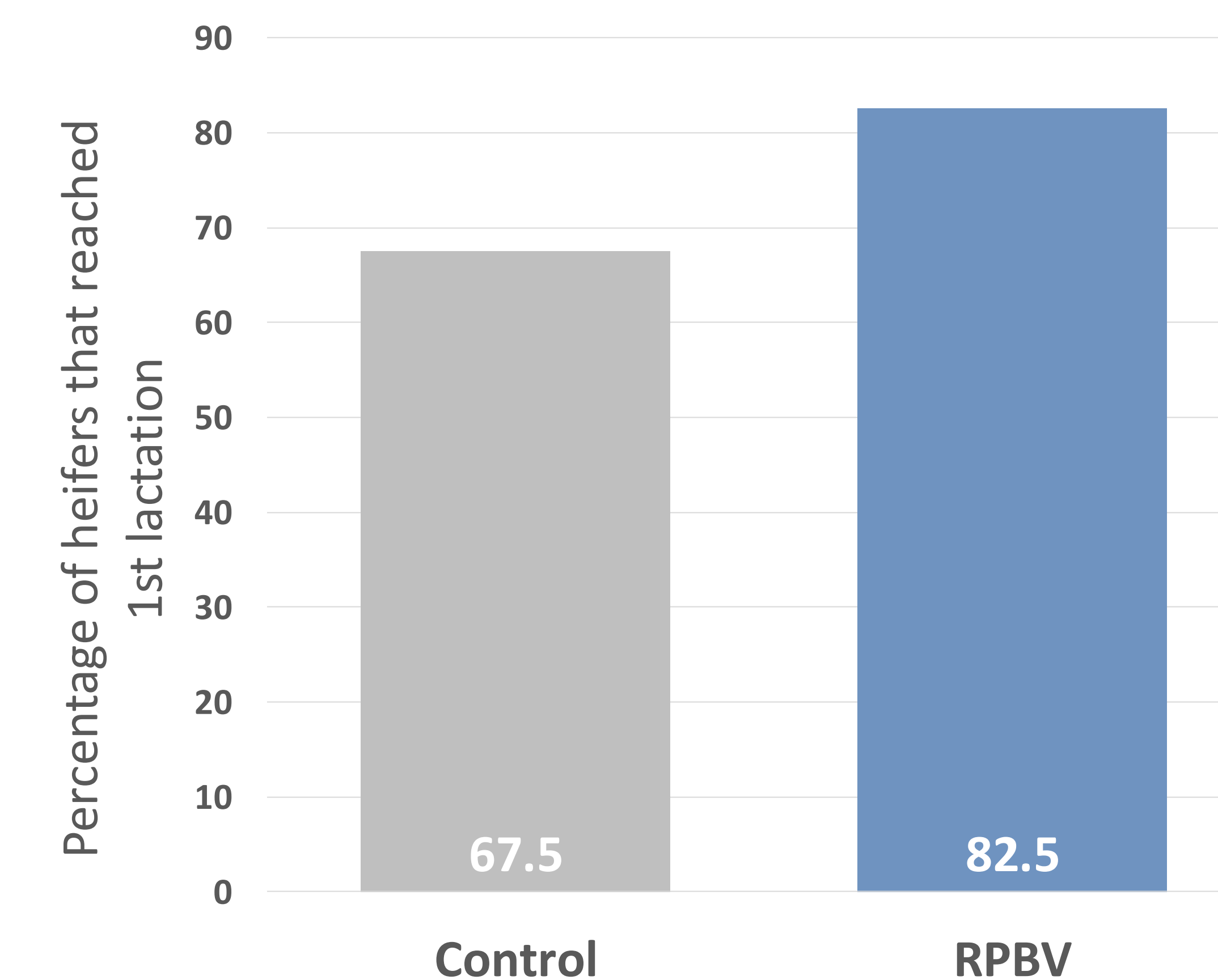
- Culling data were analyzed using chi-square test. Milk data were analyzed using ANOVA with repeated measures.

## SUMMARY

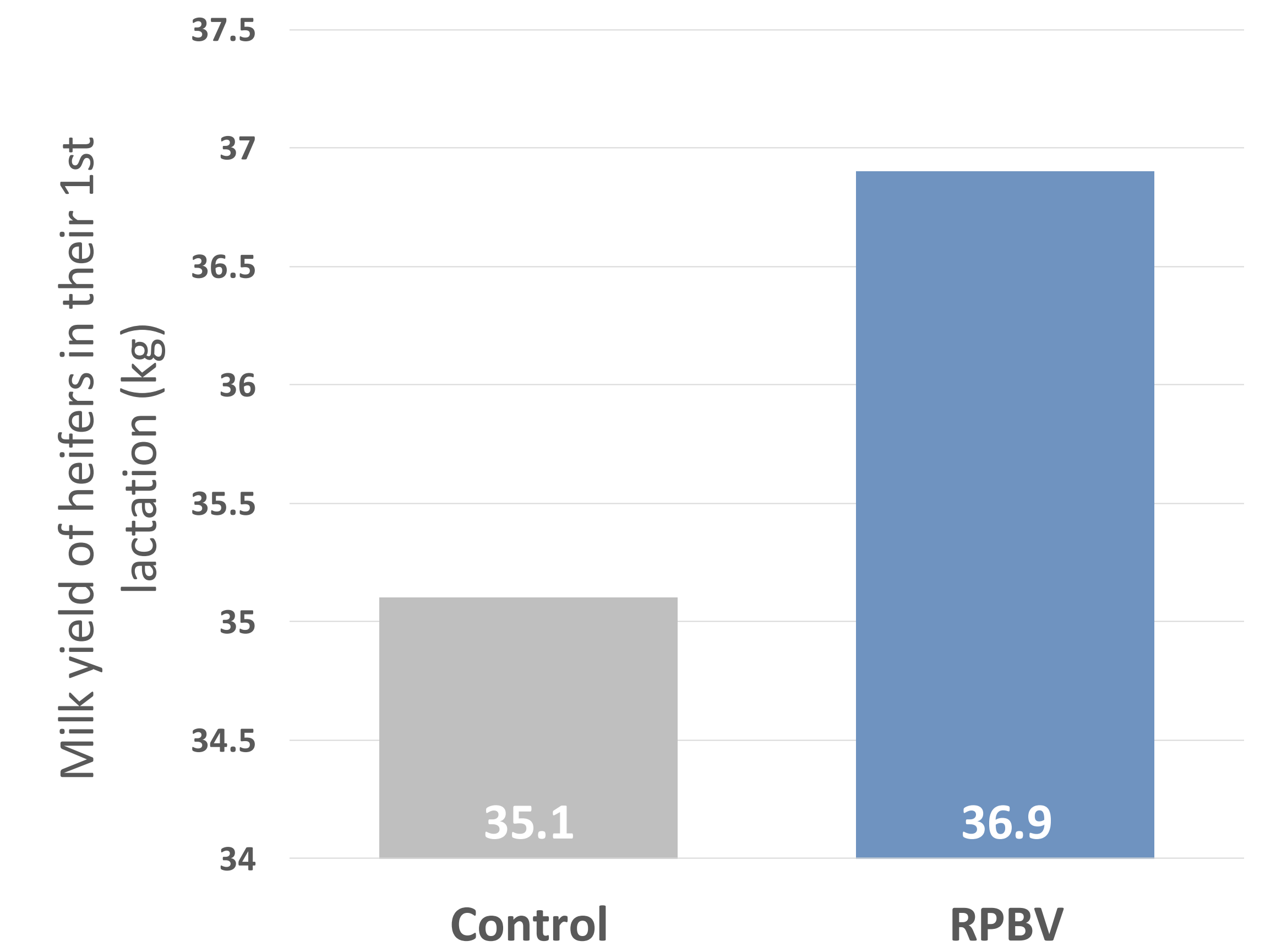
1. 80 Holstein female calves were randomly assigned to a control diet or a treatment diet with 3 g/h per day RPBV blend during the weaning period.
2. Compared with Control, RPBV female replacement heifers were more likely to reach their first lactation (82.5 vs 67.5%,  $P = 0.078$ )

## RESULTS

### The female calves supplemented with RPBV during the weaning period:



**Figure 1:** Heifers were more likely to reach first lactation (82.5 vs 67.5%,  $P = 0.078$ )



**Figure 2:** First lactation cows tended to produce more milk (81.35 vs 77.38 lb,  $P = 0.12$ )

## CONCLUSION

Holstein female calves that received a Rumen-Protected B Vitamin Blend at weaning tended to increase milk yield in their 1<sup>st</sup> lactation. There was also an increased number of animals that reached their 1<sup>st</sup> lactation.

This warrants more research into the impact of B vitamins fed during weaning on heifers' growth and development.

