



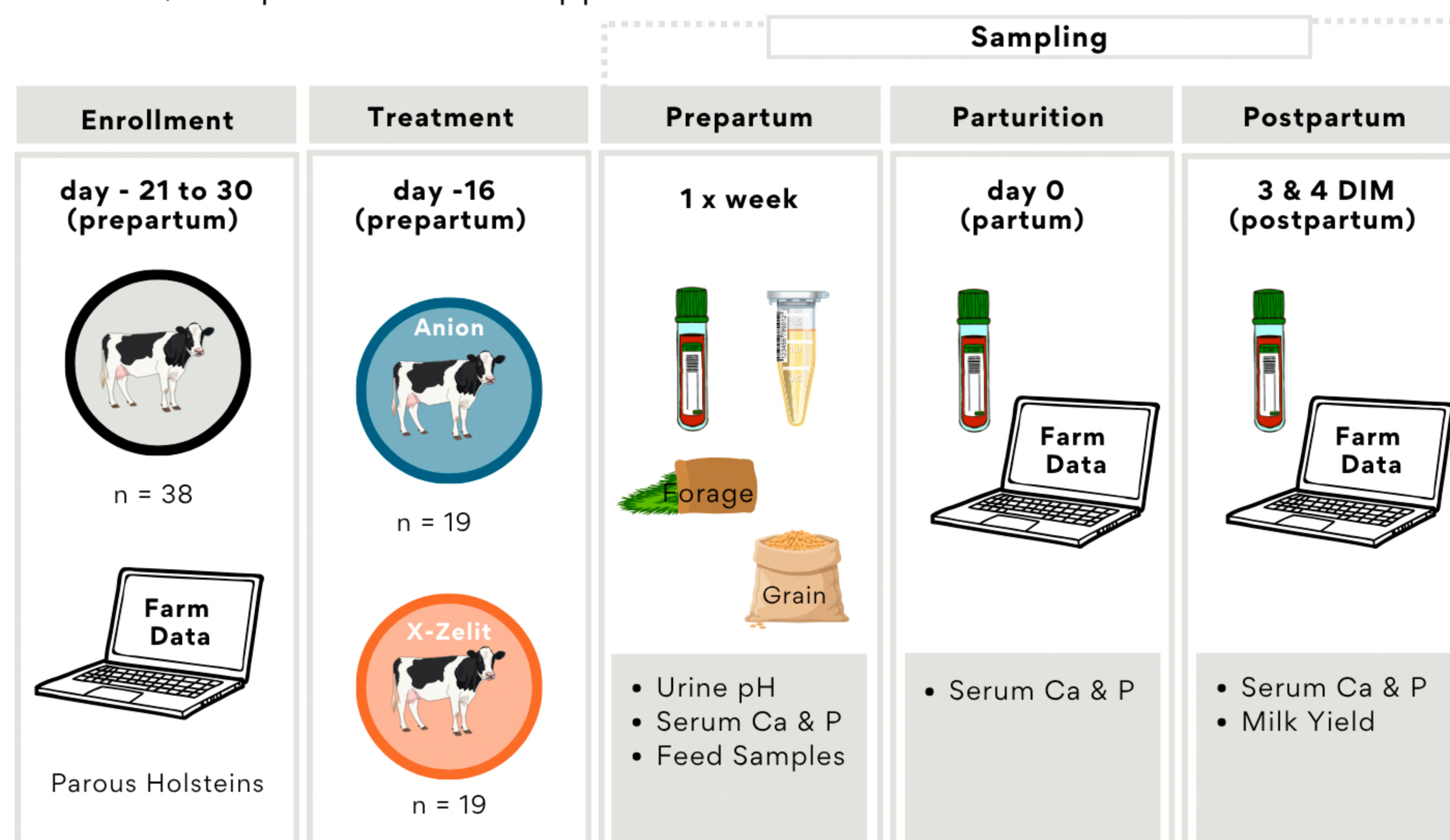
INTRODUCTION

- Sustainable scaling of grazing dairy herds in Colombia and subtropical areas are susceptible to hypocalcemia.
- Well-managed anion supplementation (DCAD) is difficult due to system type, palatability, and reliance on high K forages (primarily Kikuyu).
- Other options are needed to better control periparturient hypocalcemia to fit grazing systems in Colombia and the subtropics.



OBJECTIVE AND DESIGN

The study sought to evaluate the effect of synthetic X-Zelit A fed prepartum on hypocalcemia and performance of multiparous Holstein cows in a grazing dairy in Colombia, compared to anion supplementation.



Figures (L to R; T to B): 1) pasture of Holsteins on enrolled farm; 2) prepartum paddock setup to manage enrolled cows; 3) example of X-Zelit fed to cows added to prepartum concentrate; 4) commercial anion fed to cows enrolled as DCAD in prepartum concentrate.



KEY TAKEAWAYS

- It is **difficult to create a state of compensated metabolic acidosis** (≤ 6.5 pH) in Holsteins grazing on high K forage based on current feeding recommendations for commercial anion products.
- **Blood** mineral concentrations (Ca, Mg, P) were **not different** between cows fed X-Zelit and those fed DCAD prepartum
- **Milk** production was **greater** in cows fed X-Zelit compared to those fed DCAD.

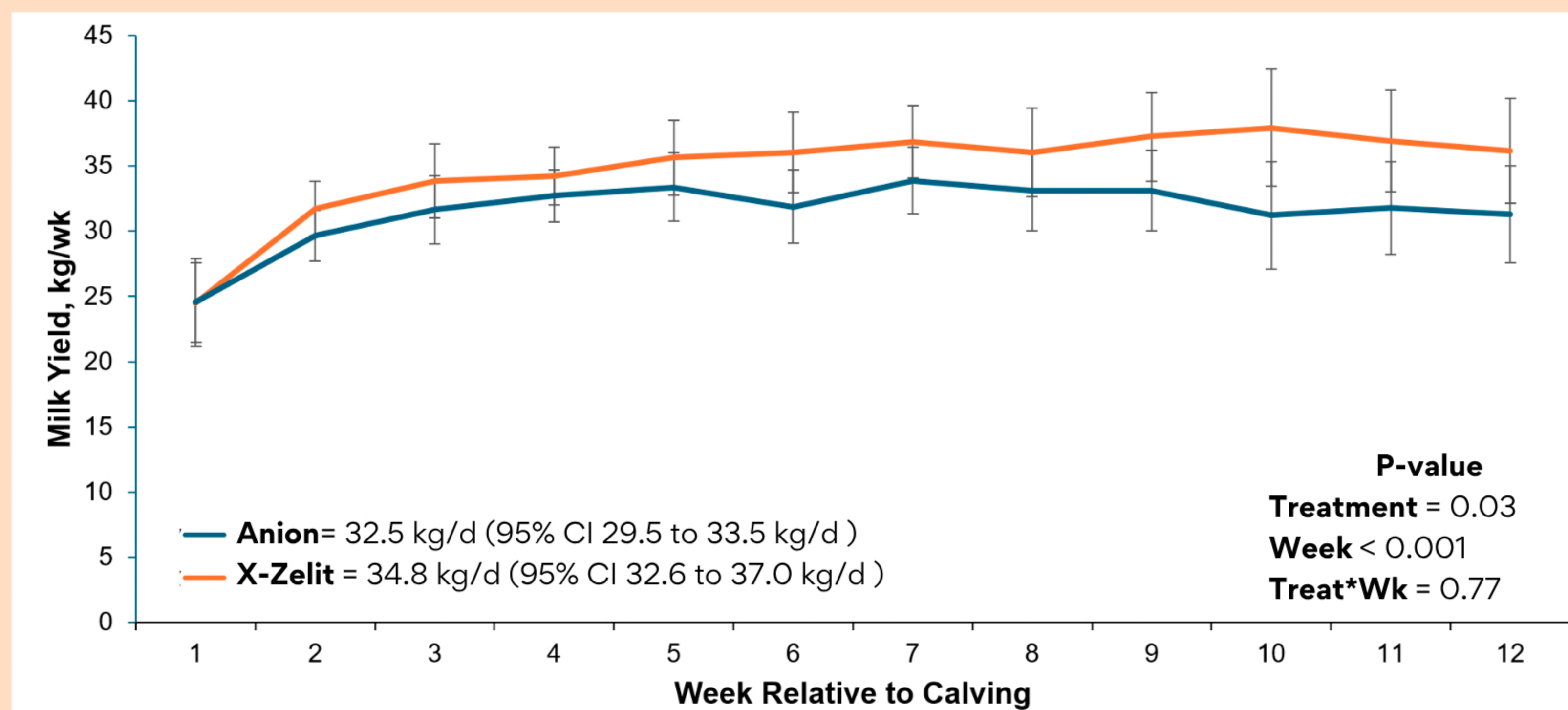


Figure 5. Average weekly milk yield of cows by treatment (X-Zelit vs. Anion) over the first 12 weeks of lactation.

- Cows fed X-Zelit had **improved odds of pregnancy** at first service.
Though significant, the wide confidence interval suggests that this should be repeated with a larger data set to confirm.

Table 1. Descriptive statistics of cows enrolled in study.

Variable (95% CI)	Treatment Group		P - val
	Anion	X-Zelit	
Cow Count, n	19 (50)	19 (50)	-
Prev ME305, kg	7754.42	7825.68	0.38
Days on Treatment, d	13.7 (10.5, 16.8)	15.7 (13.8, 17.7)	0.23
Urine pH ¹ , pH	8.2 (7.8, 8.6)	8.0 (7.3, 8.6)	0.53
Entering Parity, n			0.78
2	3	3	-
3 +	16	16	-

¹Missing data for 6 cows fed Anion and 9 fed Zeolite.



FUTURE DIRECTIONS

These findings suggest a positive effect of X-Zelit on milk production, particularly when compared to cows that struggle to reach the required compensated metabolic acidosis to control hypocalcemia by anions alone in high-K forage conditions. More work should be conducted on a larger dataset to understand these results and the potential implications on reproduction outcomes.

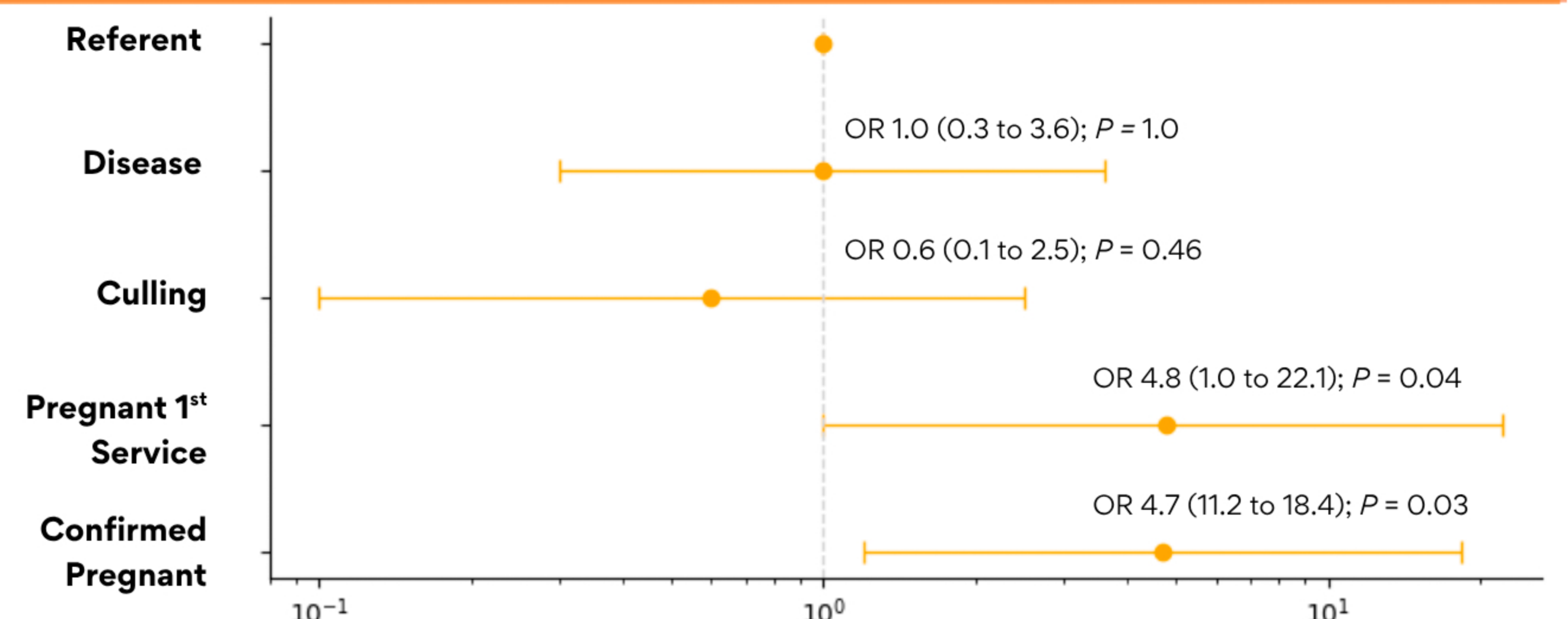


Figure 6. Odds ratios (OR), 95% CI, and P-values of disease, culling, and reproductive outcomes for cows fed X-Zelit prepartum relative to the referent, Anion fed cows. Diseases were diagnosed by farm personnel and included clinical hypocalcemia, mastitis, metritis, and retained placenta.

