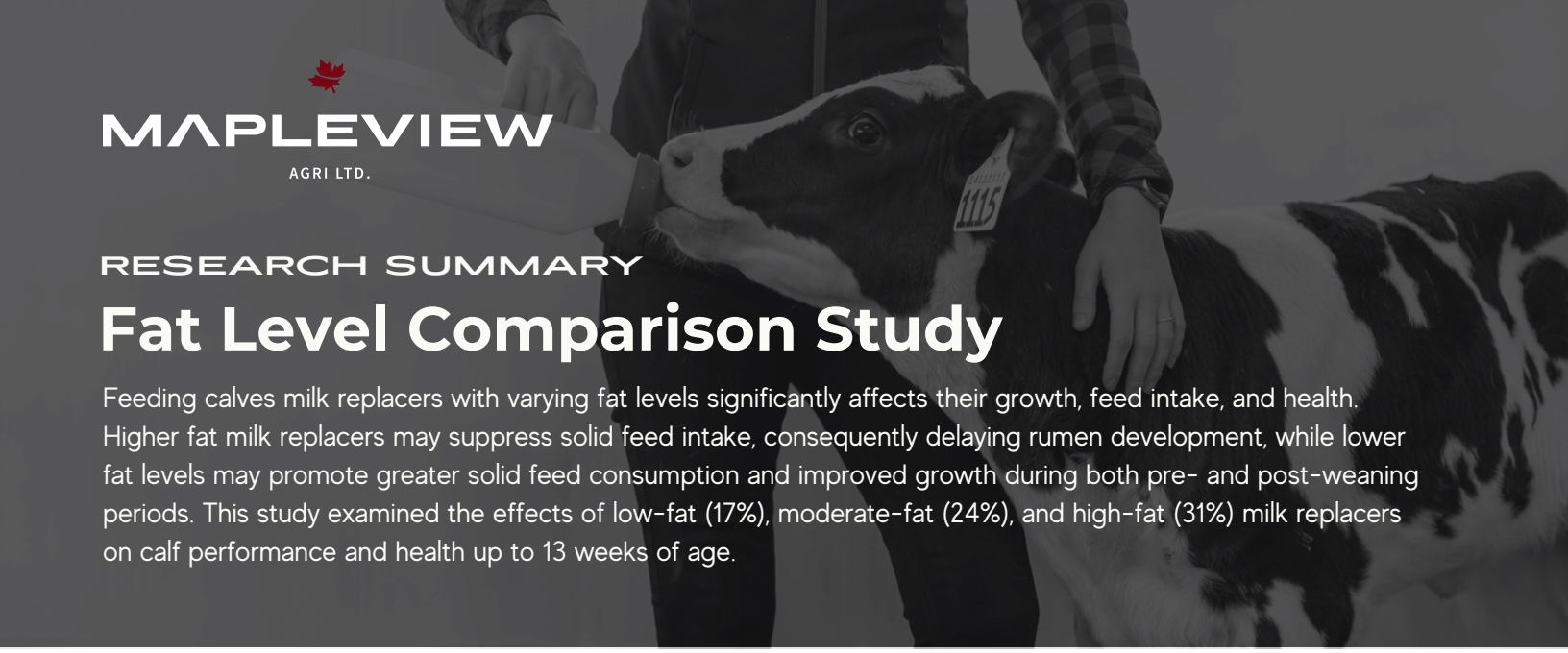


MAPLEVIEW AGRI LTD.

RESEARCH SUMMARY

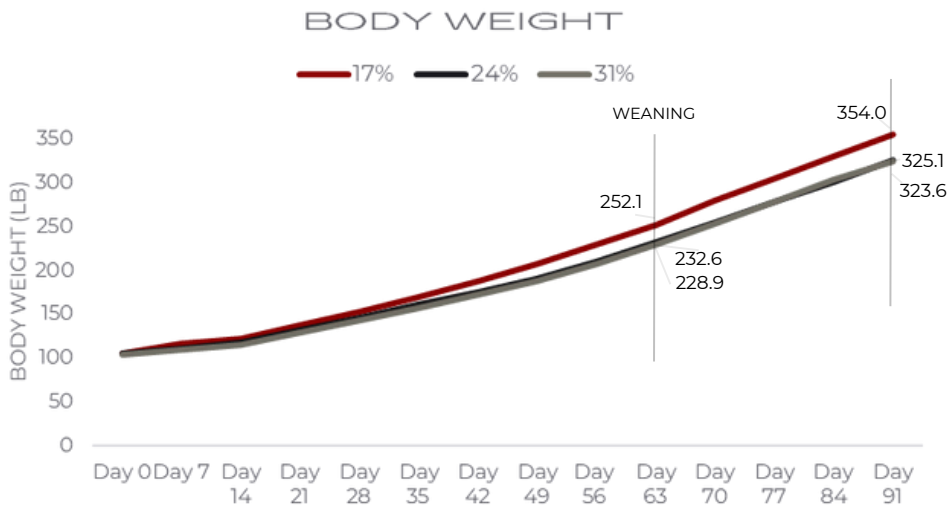
Fat Level Comparison Study

Feeding calves milk replacers with varying fat levels significantly affects their growth, feed intake, and health. Higher fat milk replacers may suppress solid feed intake, consequently delaying rumen development, while lower fat levels may promote greater solid feed consumption and improved growth during both pre- and post-weaning periods. This study examined the effects of low-fat (17%), moderate-fat (24%), and high-fat (31%) milk replacers on calf performance and health up to 13 weeks of age.

METHODOLOGY

Conducted at Mapleview Agri Future Performance Research Centre, the study involved 128 Holstein bull calves housed individually until weaning, followed by pair housing until 13 weeks. Calves were randomly assigned to one of three milk replacer treatments, all containing 26% crude protein with varying fat levels. Milk replacers were skim-milk-based and free of antibiotics and probiotics. Solid feed and water intake were provided ad-libitum, body weights were recorded weekly, and health metrics such as fecal consistency and respiratory symptoms were monitored daily.

DAILY MILK REPLACER FEEDING RATE	DAY 0-6	DAY 7-13	DAY 14-20	DAY 21-41	DAY 42-48	DAY 49-55	DAY 56-63
	520g-4L	650g-5L	910g-7L	1040g-8L	910g-7L	650g-5L	325g-2.5L



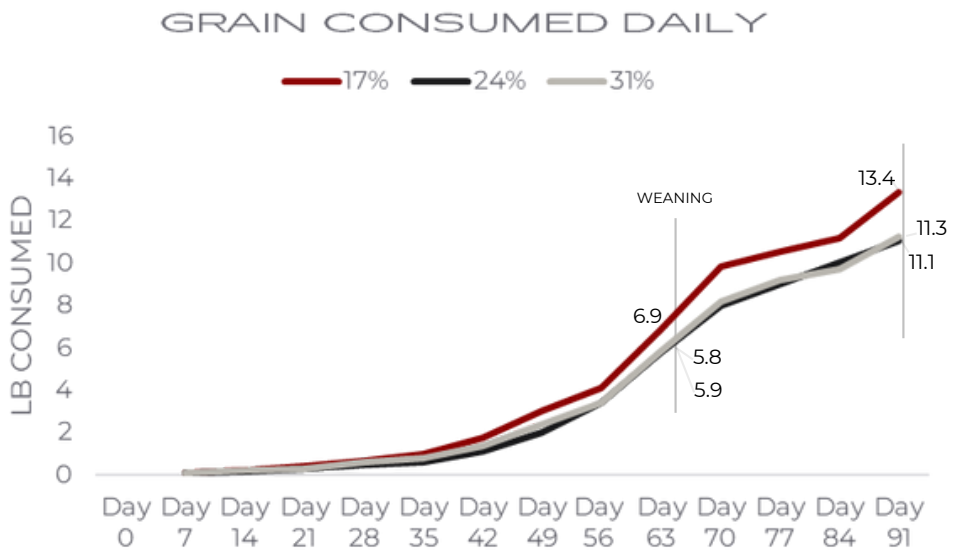
17% Fat showed the **highest weight gain and ADG,** both pre- and post-weaning.

24% Fat and 31% Fat had similar post-weaning ADG, but lower pre-weaning ADG compared to 17% Fat.

TREATMENT	DAY 0 WEIGHT (LB)	DAY 63 WEIGHT (LB)	DAY 91 WEIGHT (LB)	PRE-WEANING ADG (LBS/DAY)	POST-WEANING ADG (LBS/DAY)
17% Fat	105.0	252.1	354.0	2.33	2.74
24% Fat	105.1	232.6	325.1	2.02	2.42
31% Fat	103.6	228.9	323.6	1.99	2.42

FEED EFFICIENCY

	17% FAT	24% FAT	31% FAT
Grain Consumed Pre-Wean (lb)	127.33	98.12	105.95
Grain Consumed Post-Wean (lb)	314.99	266.86	268.38
Grain Consumed During Whole Growing Period (lb)	442.32	364.98	374.34
Milk Replacer Consumed (kg)	49.02	49.05	49.07
Feed Efficiency Pre-Weaning	1.61	1.63	1.72
Feed Efficiency Post-Weaning	3.09	2.89	2.83
Overall Feed Efficiency	2.22	2.16	2.20



TRIAL CONCLUSION

Calves fed milk replacers with 24% and 31% fat had differences in health but consumed less starter grain, likely due to an excess energy supply leading to earlier satiety. As a result, calves offered the 17% fat milk replacer consumed more starter grain and achieved a higher average daily gain (ADG), resulting in a lower cost per pound of gain when assuming equal costs for milk replacers and starter grain.

KEY TAKEAWAYS

1. **Lower Fat Milk Replacer Advantage:** Calves offered the 17% fat milk replacer consumed more starter grain, leading to improved performance metrics.
2. **Higher ADG:** Increased starter grain intake with the 17% fat milk replacer resulted in a higher average daily gain (ADG).
3. **Cost Efficiency:** When assuming equal costs for milk replacers and starter grain, the 17% fat milk replacer offered the most cost-effective gains, with a lower cost per pound of weight gain.
4. **Feeding Strategy Implication:** Balancing fat content in milk replacers is crucial for optimizing starter grain intake, growth rates, and economic efficiency. Breed, environment and age will also affect optimal parameters.