

PERFORMANCE AND HEALTH OF DAIRY CALVES FED WITH ACIDIFIED MILK IN TROPICAL CLIMATES

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INTRODUCTION

Milk quality should be evaluated not only on its nutrient content, but also for its microbiological quality. Poor microbial quality may be responsible for the occurrence of diseases. The objective of feeding acidified milk is to prevent microbial growth in whole milk which can be a challenge especially in feeding programs with free access to milk or in calf operations that not have refrigerated storage.

MATERIAL E METHODS

- Thirty-eight dairy calves individually housing;
- Fed different liquid diets:
 - 1) Whole milk refrigerated (**WM**);
 - 2) Acidified milk (**AM**);
 - 3) Commercial milk replacer (22.9% CP; 18.8% fat; 14% solids) (**MR**);
- Milk was acidified to a pH of 4.5 with formic acid;
- Kept in ambient temperature (23,7 °C) for 12 hours;
- Starter and water free-choice;
- 6L/d of liquid diet until 56d of age;
- Blood samples weekly collected;
- Health evaluated daily

RESULTS

Table 1 – Performance and blood metabolites of dairy calves fed with different liquid diets

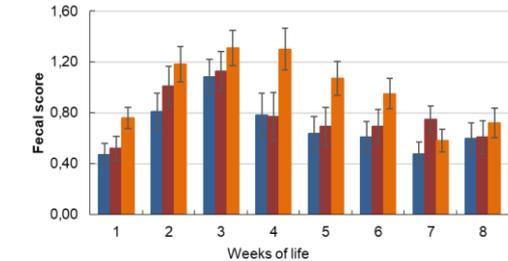
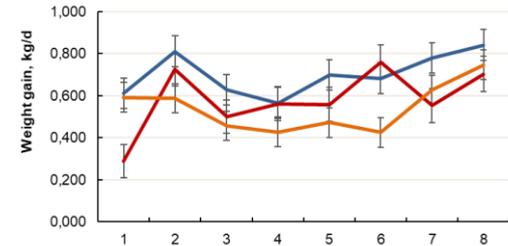
Item	Treatment				SEM ⁽¹⁾	P< ⁽²⁾		
	WM	AM	MR	T		W	TxW	
Intake								
Liquid diet, L/d	5.95	5.82	5.93	0.02	0.01	<0.01	<0.01	
Starter MS, g/d	214.16	167.54	185.38	39.66	0.66	<0.01	0.85	
Body weight, kg								
at birth	30.69	31.63	30.74	1.80	0.24	-	-	
at weaning	70.54 ^a	63.56 ^b	61.15 ^b	1.677	<.0001	-	-	
Weight gain, Kg/d	0.703 ^a	0.582 ^b	0.543 ^b	0.023	<0.01	<0.01	0.08	
Glucose, mg/dL	134.86 ^a	111.03 ^b	117.41 ^b	3.28	<0.01	<0.01	0.27	
Lactate, mg/dL	13.92 ^a	11.24 ^b	12.84 ^a	0.47	0.01	<0.01	0.51	
Protein, g/dL	5.88	5.78	5.74	0.105	0.55	<0.01	0.01	
BHBA, mmol/L	0.129 ^a	0.141 ^a	0.081 ^b	0.008	<0.01	<0.01	0.45	

Table 2 – Health and fecal pH of dairy calves fed with different liquid diets

Item	Treatment			SEM ⁽¹⁾	P< ⁽²⁾		
	WM	AM	MR		T	W	TxW
Fecal score	0.68 ^b	0.77 ^{ab}	0.98 ^a	0.08	0.01	<0.01	0.43
Days with diarrhea							
Score - 2	6.33 ^b	8.20 ^{ab}	11.38 ^a	1.35	0.03	-	-
Score - 3	0.58	1.20	1.31	0.47	0.49	-	-
Total (2 and 3)	6.92 ^b	9.40 ^{ab}	12.69 ^a	1.55	0.04	-	-
Fecal pH	6.61	6.61	6.71	0.08	0.61	<0.01	0.12
Retal temperature	38.51 ^a	38.35 ^b	38.41 ^{ab}	0.04	0.01	<0.01	0.99
Days with fever	2.83 ^b	1.04 ^a	2.54 ^b	0.55	0.06	-	-

⁽¹⁾SEM: Standard error of the mean

⁽²⁾T: treatment effect; W: week effect; TxW: Interaction effect treatment x week; abc: different letters on the same line indicate statistical difference (p<0,05).



CONCLUSIONS

These results suggest that acidified milk is an alternative for feeding calves in tropical climates with performance similar to that observed for MR, but with lower days with fever.