Supplementary Material

Article

Evaluation and Development of Analytical Procedures to Assess Buffering Capacity of Carbonate Ruminant Feed Buffers

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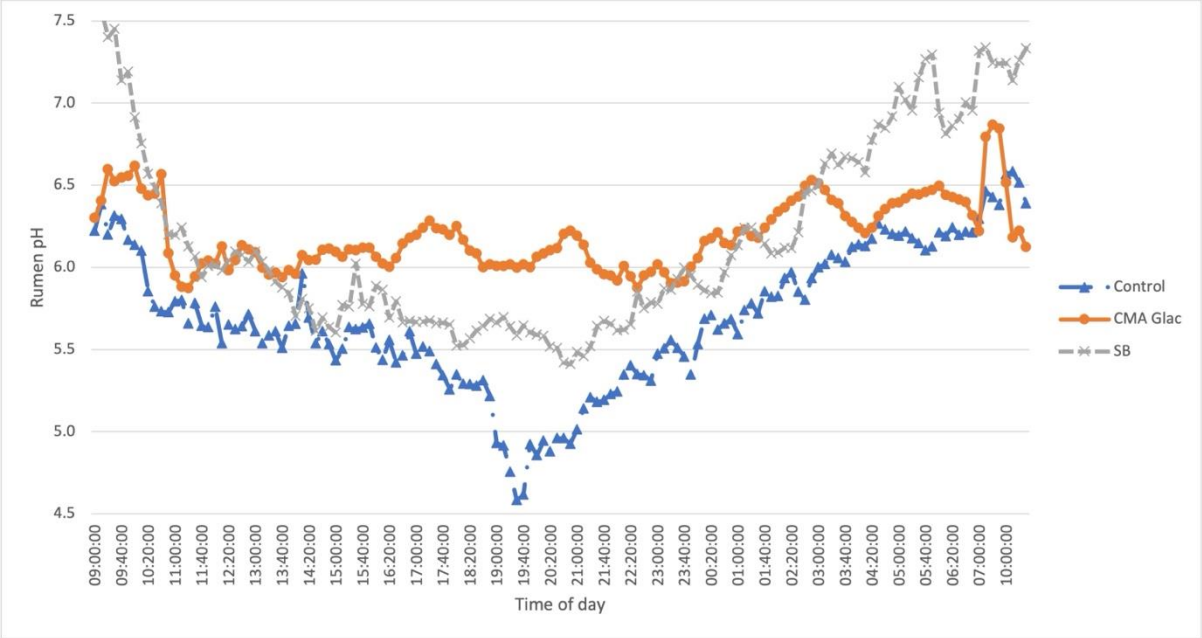


Figure S1: Rumen pH profile from *in vivo* sub acute rumen acidosis trial comparing SB 2X and CMA Glac from Neville et. al. [15]

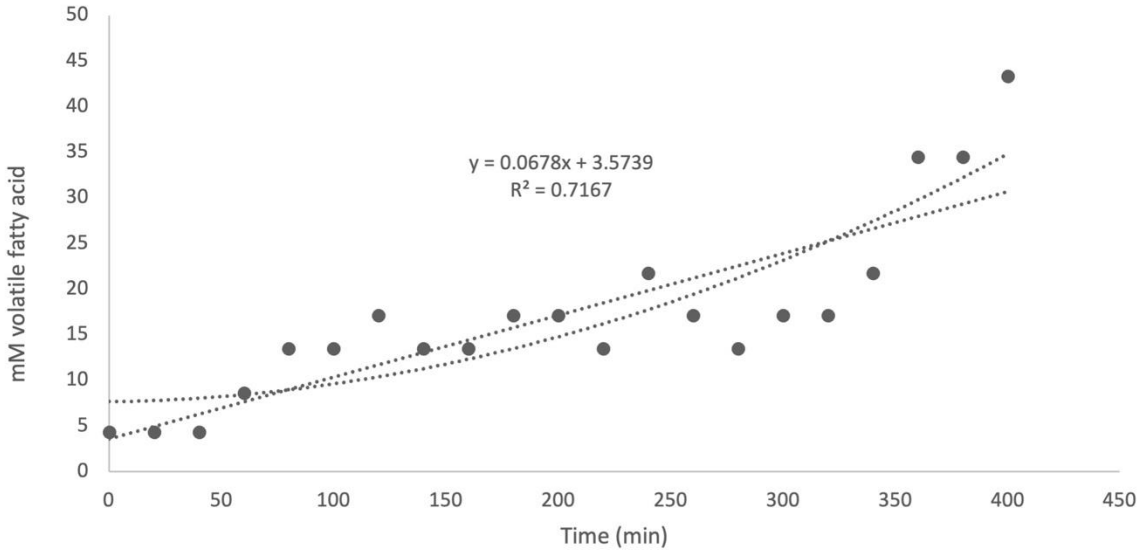


Figure S2: Rumen total VFA profile of the un-buffered control for the *in vivo* sub acute rumen acidosis trial from Neville et. al. [15]

Table S1. Calculation of mmol of acetic acid addition to 3 hour *in vitro* acidosis simulation using VFA concentration produced over 180 min from *in-vivo* rumen acidotic diet trial using cannulated dairy cows. (Raw data generated by Neville *et al.* [15]).

Acid accumulation	**Average of 180min**
mM acid/min	0.090
Addition mM per 25 min	2.250
Conversion to mmoles of acetic acid	0.337

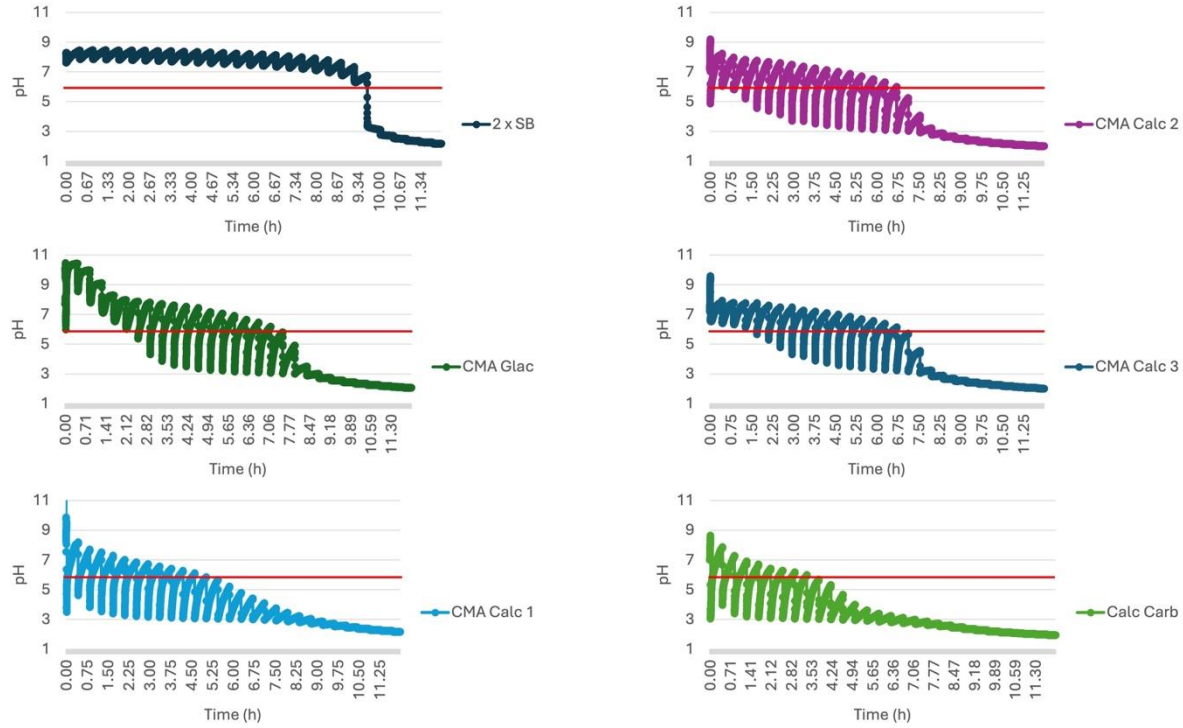


Figure S3: A comparison of the titration curves generated for each buffer material tested using the fixed HCl acid load methodology with respect to an optimal rumen threshold pH of 6.0.

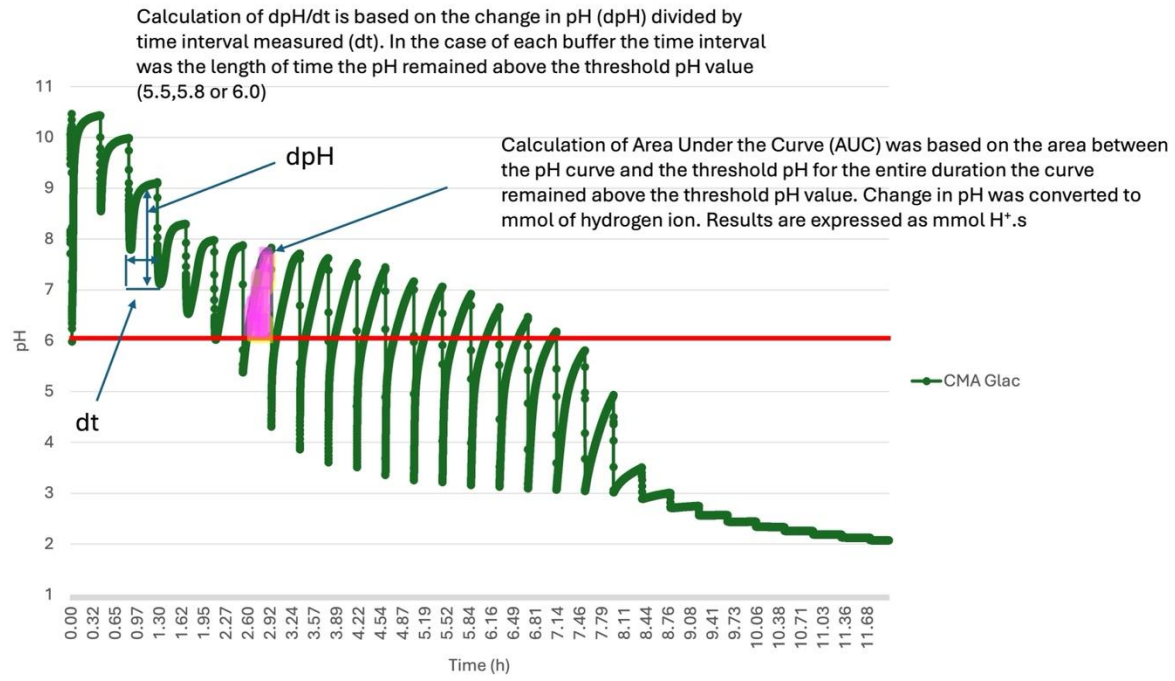


Figure S4: An illustration of the features of the titration curves that are summarise and described by the calculation of parameters dpH/dt and AUC generated for each buffer material tested using the fixed HCl acid load and acidotic diet methodologies. The red line indicates the pH threshold of 6.0

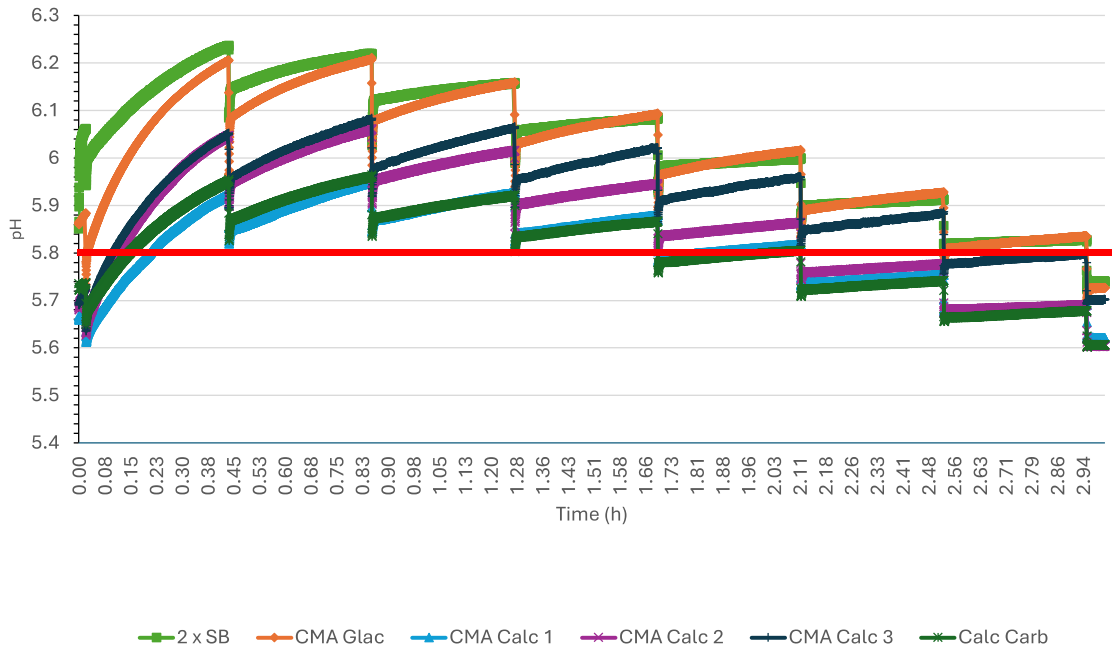


Figure S5: A comparison of the titration curves generated for each buffer material tested using the acidotic diet simulation with a rumen threshold pH of 5.8 indicated by the red line.