POSTER 19

Effect of addition of malic acid salts on growth performance and ruminal functionality of beef cattle

EAAP'07

C. Carrasco[1*], V. Dell'orto[2], M. Innocenti[2], S. Vandoni[2], C.A. Rossi[2], M. Puyalto[3], A. Fuentetaja[4] and M.I. Gracia[1].

[1]Imasde Agroalimentaria, 28224 Madrid, Spain; [2]Dipartimento di Science e Tecnologie Veterinarie per la Sicurezza Alimentare, Universitá degli Studi di Milano, 20133 Milan, Italy; [3]Norel, 28007 Madrid, Spain; [4]Copese, 40480 Segovia, Spain.

Objectives

Study the efficacy of malic acid salts (MAS$^{\Psi}$) as a dietary additive in beef cattle in three different production systems.

Materials & methods

Experimental animals

Feeding regime

Trial 1	Trial 2	Trial 3
72 Charolaise or Limousine x Spanish crossbreeds	38 Charolaise	40 Charolaise
214±15 ⇨ 337±17 kg BW	451±51 ⇨ 680±54 kg BW	400±20 ⇨ 680±44 kg BW
114 days of trial	133 days of trial	180 days of trial
Concentrate (0.88UFC; 23%NDF) and straw *ad libitum*.	Four TMR diets based on: concentrate, corn, beet pulp, straw, molasses and hydrogenated fat (0.91-1.04 UFC; 40.72-27.70% NDF).	Five TMR diets based on: concentrate, corn, beet pulp, straw, molasses, hydrogenated fat and corn silage (0.93-1.05 UFC; 40.96-31.23% NDF).

Experimental design

C: control
M: C + 4kg MAS/t
6 replicates of 6 animals per treatment

TMR: control
TMR-M: TMR + 20 g MAS/head/day
20 replicates of one animal per treatment

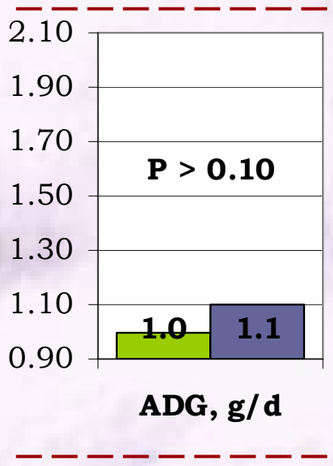
Results

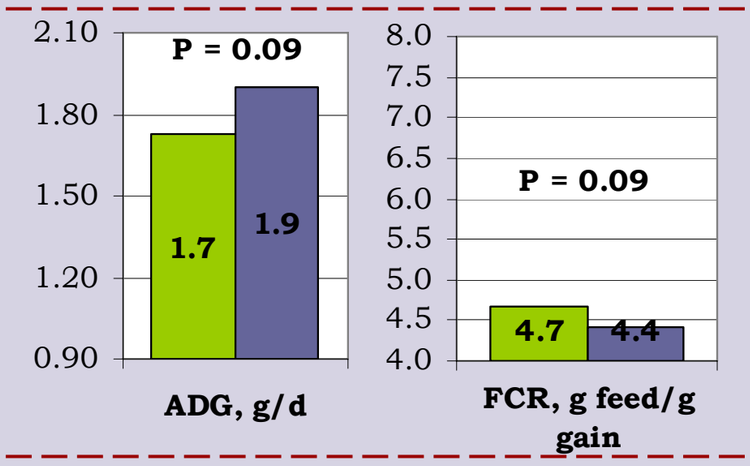
Trial 1: *Spanish rearing conditions*

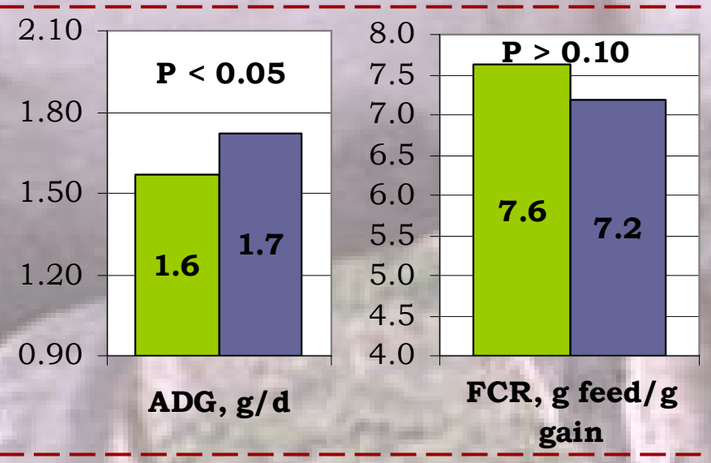
Trial 2: *TMR without corn silage*

Trial 3: *TMR with corn silage*

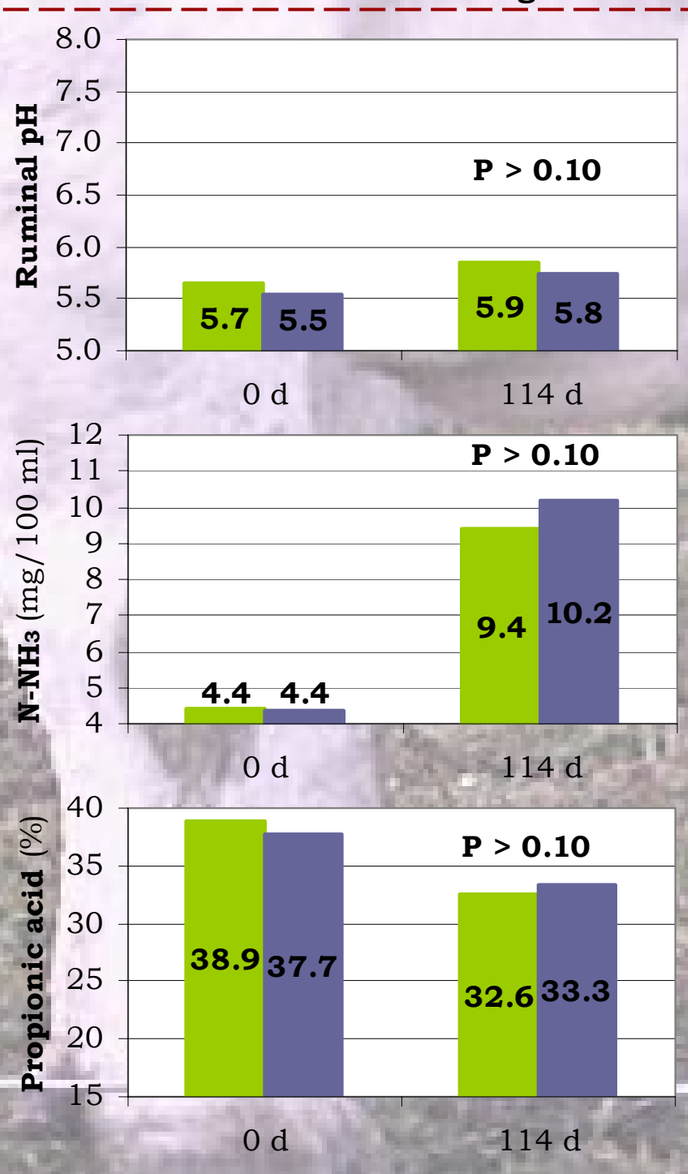
Productive parameters (Global period)

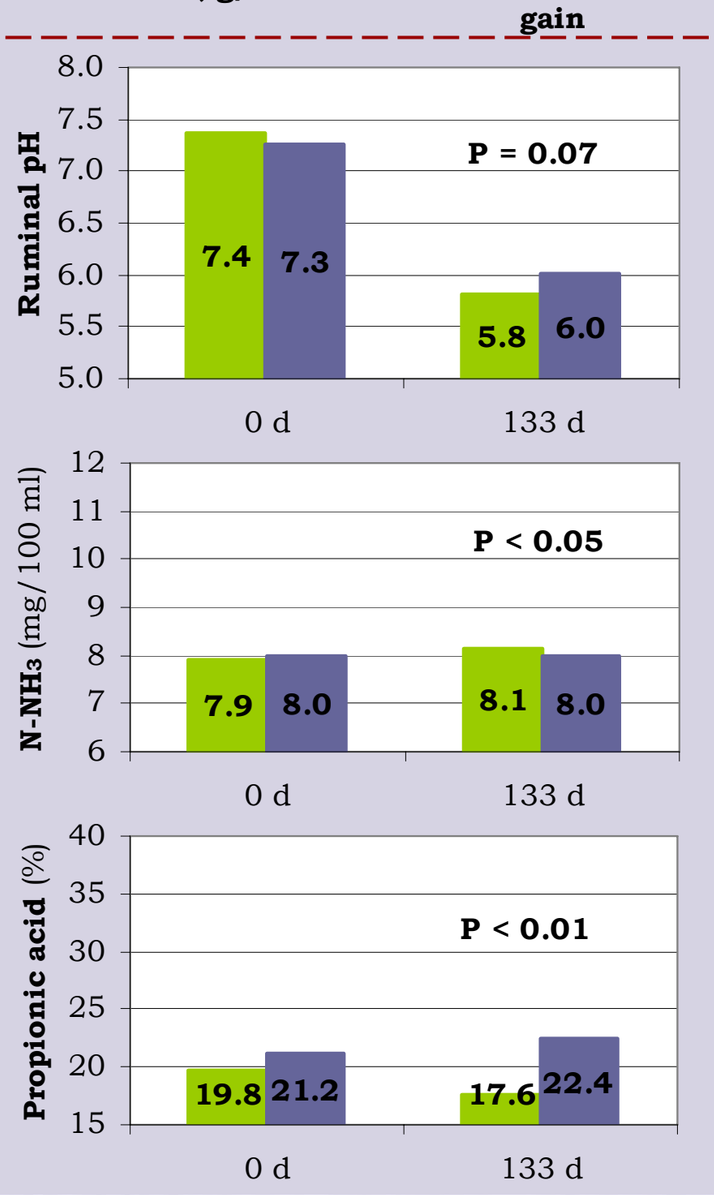


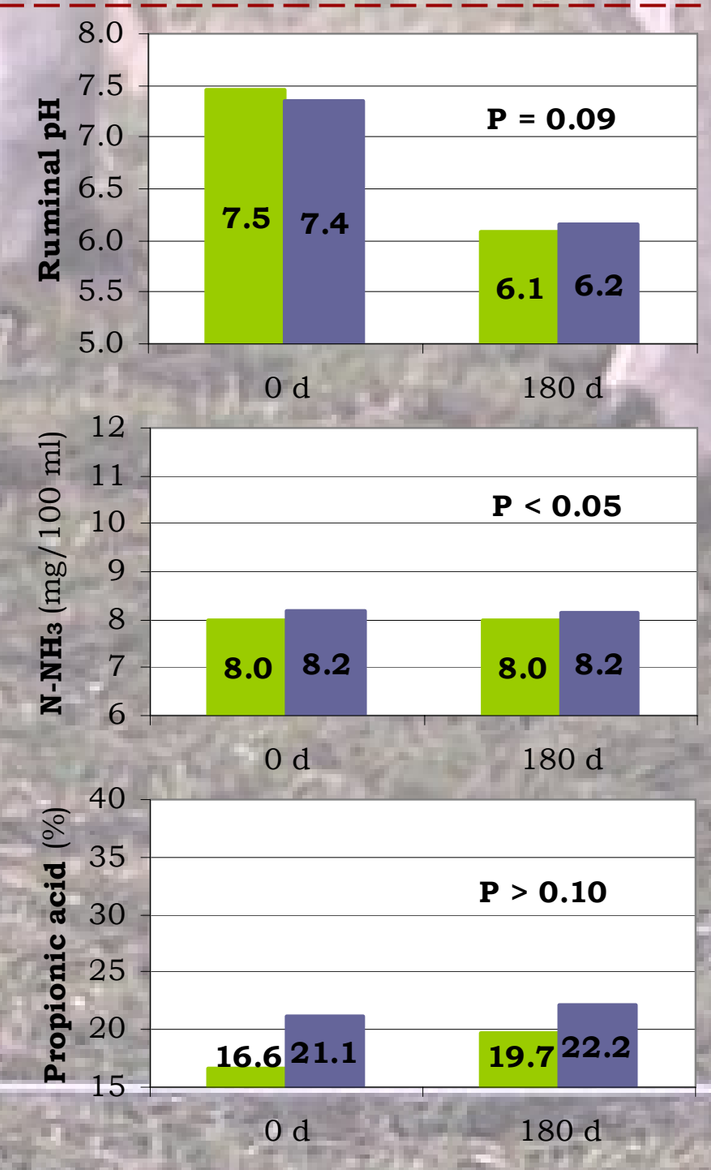




Ruminal metabolism parameters (Initial and final values)







Conclusions

Malic acid salts could act as ruminal pH stabiliser and growth promoter when beef cattle is fed TMR high energy diets. However, no differences in pH or growth were observed due to the addition of malic acid salts to low energy diets.

* Corresponding author: ccarrasco@e-imasde.com; $^{\Psi}$Rumalato; Norel S.A., Madrid, Spain.