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Intake, digestibility and growth in steers offered grass silage supplemented with sucrose

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1. Introduction

- Animal productivity can be sub-optimal with wet silages
- Asynchrony in the rumen between rapidly fermentable substrate and soluble, N-containing compounds could accentuate the limitations with silage.
- This experiment quantified the effects of fortifying grass silage with sucrose and/or supplementary concentrates on the productivity of growing beef cattle

2. Materials and Methods

Growth study

- 2 x 4 randomised complete block design
- Supplementary concentrates at 0 or 3 kg/head/d
- Grass silage + 0, 30, 60 or 90g sucrose/kg DM
- 12 steers (376kg mean starting liveweight)/treatment for 109d

Digestibility study

- 2 x 3 randomised complete block design
- Supplementary concentrates at same rates as above
- Grass silage + 0, 45 or 90 g sucrose/kg DM
- 8 steers (343kg mean liveweight)/treatment

3. Results

Grass silage

Dry matter (g/kg)	176
C. protein (g/kg DM)	121
WSC (g/kg DM)	7
NH_3-N (g/kg N)	126
Lactic acid (g/kg DM)	120
pH	4.0

WSC = water soluble carbohydrates

Animal productivity and digestibility

	Total DM intake (g/kg Lwt)	Lwt. gain (g/d)	FCE	Digestibility (g DM/kg DM)
Conc. (kg/head/d)				
0	14.3	257	45	670
3	17.7	934	126	711
P=	<0.001	<0.001	<0.001	0.002
Sucrose (g/kg DM)				
0	15.6	576	86	694 (0)
30	16.2	577	81	692 (45)
60	16.5	609	85	693 (90)
90	15.7	616	90	
P=	0.083	0.696	0.644	0.857
Conc. X Sucr.				
P=	0.650	0.420	0.461	0.629

FCE = Lwt. gain (g)/DM intake (kg)

4. Conclusions

- The animal response to supplementary concentrates was as expected
- The absence of a response to fortifying with sucrose for any of the variables may be explained by the high fibre and low protein content of the silage