PSXII-5: Simulation of feed restriction and anorexia during auction market and transportation and its effects on body weight recovery and concentrate intake on unweaned crossbred Angus-Holstein calves

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Introduction

Transportation of young calves is a common practice in beef production. During transportation, calves are exposed to commingling, physical trauma, unknown antigens, fatigue, among others [1]. In addition, these animals suffer feed and water restriction for several hours that negatively affect their energetic balance [2, 3, 4] and might alter their feed intake.

Objective

Evaluate the effects of feed restriction and anorexia (by simulating an auction market and transport situation) on concentrate intake and body weight recovery.

Materials and Methods

- 20 unweaned bull calves (44.1± 2.0 kg and 14.7 ± 0.63 d) individually allocated were used. Animals were randomly assigned to 1 of 4 treatments (n= 5 each) according to the feeding program during an auction market simulation and the amount of hours under feed withdrawal (transportation simulation) as showed in the following table:

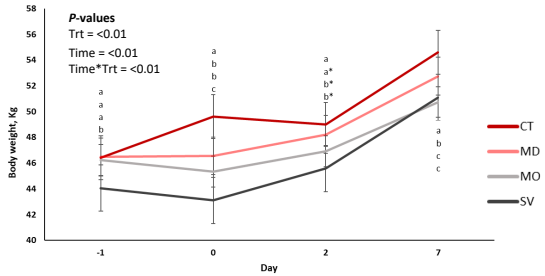
	Auction market simulation (d -4 to -2)					Transportation simulation (d -1)		
Treatments	MR*	RH*	Water	Starter	Straw	0 h	9 h	19 h
CT	X		X	X	X	X		
MD	X		X				X	
MO	X		X					X
SV		X	X					X

Treatments: control (CT), mild (MD), moderate (MO), and severe (SV).
RH= rehydration solution; **MR**= milk replacer
MR composition (% of DM): CP (26), fat (21). Gross energy (5.19 Mcal/Kg),
RS composition (% of DM): Dextrose (84.7), NaCl (4.11), K (1.31), Cl (9.83), CP (0.39).

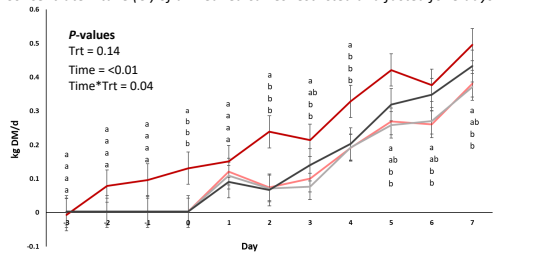
-From day 0, after the auction market and transport simulation, calves were fed MR, concentrate, and straw *ad libitum.*
-Measurements:
a. BW samples were recorded on d -1, 0, 2 and 7.
b. Concentrate intake (CI) was recorded daily from d -4 until d 7.

Results

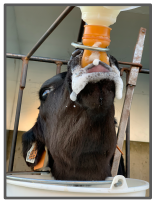
Body weight (BW) of unweaned calves restricted and fasted for 3 days.



Concentrate intake (CI) of unweaned calves restricted and fasted for 3 days.



a) BW was greater (P < 0.01) for CT compared with the rest on d 0 after auction market simulation and remain greater 7 d after transport simulation.
b) BW of SV was lesser compared with the rest from d -1 to d 0 (P < 0.01). However, BW recovery was faster indicated by the slop between d 0 and d 7.
c) 24h after transport simulation, CI was similar for all treatments. However, at d 2 CI of MD, MO and SV was lesser (P < 0.05) compared with CT.
d) Only SV calves achieved similar CI as CT from d 3 to d 7.



Conclusion

Calves BW recovery and concentrate intake was affected by the degree of restriction (9h vs 19h) and by the type of liquid diet (MR or RH) offered in long restriction periods.

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References

1. Cooke, R. F. 2017. Prof. Anim. Sci. 33:1-11. 2. Cernicchiaro, N. et al. 2012. J. Anim. Sci. 90:1929–1939. 3. Renaud, D.L. et al. 2018. J. Dairy Sci. 101:2669-2678. 4. Marques, R. et al. 2012. J. Anim. Sci. 90: 5040-5046.