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Cody J. Schneider
University of Nebraska-Lincoln

Brandon J. Nuttelman
University of Nebraska-Lincoln

Kelsey M. Rolfe
University of Nebraska-Lincoln, krolfe2@unl.edu

William A. Griffin
University of Nebraska-Lincoln, wgriffin2@unl.edu

David R. Smith
University of Nebraska-Lincoln, dsmith8@unl.edu

See next page for additional authors

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Authors
Cody J. Schneider, Brandon J. Nuttelman, Kelsey M. Rolfe, William A. Griffin, David R. Smith, Terry J. Klopfenstein, and Galen E. Erickson

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Use of Complete-feed Diets RAMP™ and Test Starter for Receiving Cattle

Cody J. Schneider
Brandon L. Nuttelman
Kelsey M. Rolfe
Will A. Griffin
David R. Smith
Terry J. Klopfenstein
Galen E. Erickson[1]

Summary

Performance of newly arrived 576 lb steer calves, fed two complete feeds or a control ration was evaluated. Treatment diets were fed for 30 or 31 days and included a control receiving diet consisting of alfalfa hay, Sweet Bran®, dry-rolled corn, and supplement or one of two complete feeds: RAMP and Test Starter which contained a high level of Sweet Bran and a minimal amount of forage. RAMP increased ADG when compared with the control diet. Cattle fed Test Starter had similar performance to the control receiving diet.

Introduction

RAMP is a complete-feed starter ration developed by Cargill, which contains a high level of *Sweet Bran* and a minimal amount of forage. RAMP is intended to serve as an alternative to a mixture of grain and forage for receiving cattle or adapting cattle to grain, therefore eliminating a large portion of the forage needed in feedlots and the need to mix a starter diet. Test Starter, another complete feed developed by Cargill, is very similar to RAMP but contains more forage. The objective of the current study was to compare performance and health characteristics of cattle fed two complete feeds (RAMP and Test Starter) during the receiving period.

Procedure

Crossbred steers (n = 965; BW = 576 ± 11 lb) from two livestock auction markets were received at the University of Nebraska–Lincoln Agricultural Research and Development Center, Mead, Neb., over two consecutive days: Oct. 14 and Oct. 15, 2010. Steers were blocked by arrival date and randomly allocated to pens within block based on processing order, resulting in 15 and 20 cattle per pen for blocks 1 and 2, respectively, with 17 pens per treatment. During processing, steers were identified with an individual ear tag, individually weighed, vaccinated with Bovi-Shield® Gold 5, Somubac®, and Dectomax® Injectable, and orally drenched with Safe-Guard®. Thirteen days subsequent to initial processing, cattle were revaccinated with Bovi-shield Gold 5, Ultrabac® 7/Somubac, injected with Micotil® and weighed.

Treatments included a control receiving diet (35% alfalfa hay, 30% Sweet Bran, 30% dry-rolled corn, and 5% supplement; 16.7% CP, 36.7% NDF) and two complete feeds: RAMP (21.9% CP, 41.9% NDF) and Test Starter (23.4% CP, 43.5% NDF). Both complete feeds contained a high level of Sweet Bran and a minimal amount of forage, which was formulated and provided by Cargill Inc., Blair, Neb. All diets contained 25 g/ton Rumensin and 12 mg/lb thiamine (DM). Cattle were offered *ad libitum* access to treatment diets for 30 or 31 days followed by limit feeding a common diet (47.5% Sweet Bran, 23.75% grass hay, 23.75 alfalfa hay, and 5% supplement) for five days prior to collecting final BW to minimize variation in gut fill. Final BW were collected over two days following the five-day limit-fed period. Initial weight was not shrunk because steers were weighed within 12 hours of arrival and had no access to feed before weighing.

Performance data were analyzed using the MIXED procedure of SAS (SAS Inst., Inc., Cary, N.C.) with pen as the experimental unit. Block was treated as a random effect, and treatment was a fixed effect. Treatment comparisons were made using a protected F-test ($P < 0.10$) separated with Bonferroni t-test. Incidence of BRD was evaluated as the rate of respiratory illness or the number of steers treated for BRD in a pen divided by the number of steers in that pen. Incidence of BRD was then analyzed using the GENMOD procedure of SAS. Incidence of BRD was affected by DMI and ADG; consequently, ADG and DMI were added to the model when assessing treatment effects on BRD. No significant effect of block existed so it was removed from the model. Treatment means for BRD incidence were calculated using the PROC MEANS function of SAS.

(Continued on next page)

Table 1. Performance of cattle fed RAMP, Test Starter, or a control receiving diet.

	Treatment				
Item	Control	RAMP	Test Starter	SEM	*P*-value
Initial BW, lb	576	578	573	11.2	0.89
Final BW, lb	645	657	645	10.3	0.36
DMI, lb/day	13.4	13.8	13.9	0.27	0.14
ADG, lb	2.73[a]	3.04[b]	2.81[ab]	0.13	0.07
Feed:Gain[1]	4.91	4.54	4.95	0.22	0.17
BRD incidence, %[2]	4.3	7.4	11.7	—	—
Treated for BRD, n	18/322	23/320	37/321	—	—

[1]Statistics calculated on Gain:Feed.
[2]Control vs. RAMP P = 0.03; Control vs. Test Starter $P < 0.01$.
[a,b]Means within a row without a common superscript are different, ($P = 0.03$).

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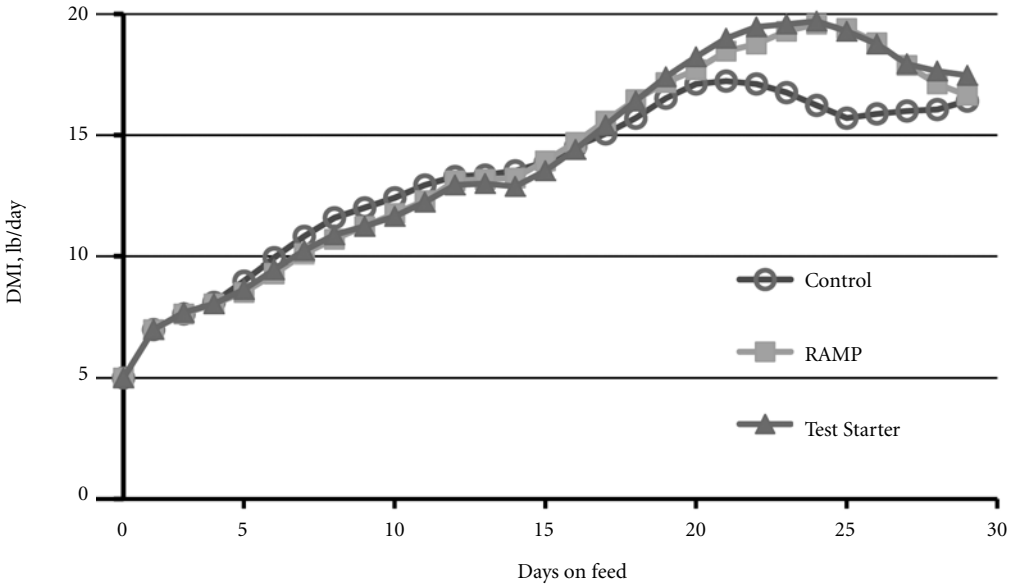

Figure 1. Dry matter intake over the receiving period for cattle fed control, RAMP, or Test Starter treatment diets.

Results

Feeding RAMP increased ($P = 0.02$) ADG compared to the control diet (Table 1). Daily gain of cattle fed Test Starter was not different ($P > 0.11$) from cattle fed control or RAMP. Dry matter intake was not different ($P = 0.14$) among treatments, although approaching significance with the complete feed treatments having numerically greater DMI than the control. On approximately day 19 of the feeding period, intakes of the control cattle seemed to plateau (Figure 1) and DMI of cattle on the complete-feed rations continued to increase, which might explain increased performance of the cattle fed RAMP. Final BW was not affected by treatment and F:G was similar for all treatments.

Incidence of BRD was affected by DMI and ADG; consequently, variation in ADG and DMI were accounted for in the analysis of treatment effects on BRD. Feeding both complete feeds increased ($P < 0.03$) the incidence of BRD; however, overall incidence of BRD was low (8%). Starting cattle on RAMP is a viable alternative to starting cattle on a mixture of grain and forage.

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[1]Cody J. Schneider, research technician; Brandon L. Nuttelman, research technician; Kelsey M. Rolfe, research technician; Will A. Griffin, research technician; David R. Smith, professor, University of Nebraska–Lincoln (UNL) Department of Veterinary and Biological Sciences; Galen E. Erickson, professor; Terry J. Klopfenstein, professor, UNL Department of Animal Science, Lincoln, Neb.

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