



Feeding calves during third and fourth months

Providing more hay (long) than 5% of total intake along with the starter for steer calves during their third and fourth months of age has benefits.

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The month after weaning is actually a transition month, although often it is not thought of that way or managed that way. Too often, the approach is now that we have the calf weaned, let's vaccinate it if we have not already done so, dehorn it if not already done, move it into a large group from an individual hutch or pen (the most common housing according to the 2014 NAHMS report), stop feeding that higher-priced texturized starter, and provide free choice hay or a higher forage TMR. Too many such changes at one time insures calves will be stressed, immunity drops, and a respiratory problem can ensue which can impair them for life. Also, if a high level of milk replacer has been fed (>0 1.5 lb solids/day), and starter intake has not been high enough for 2 to 3 weeks before weaning, then rumen development will be inadequate resulting in lower intake, daily gain, and digestibilities (Kertz 2018).

On the other hand, if too much forage is fed too soon, then gut fill can result and confound true growth measurements. This was noted in a study (Kertz 2011; Khan et al., 2011) in which calves fed only a poorly texturized calf starter were also allowed to eat hay free choice. At 10 weeks of age, calves allowed to eat hay did have improved rumen pH from 5.06 to 5.49, but they also had 10.4 lb more gut fill. This resulted in less true body growth. In the study by Overvest et al. (2016; Kertz 2016), calves had been weaned at 50 days of age. From 8 to 12 weeks, calves were fed

either a 71% forage TMR, 15% chopped gras hay blended with starter, or only starter. It is significant to note that the starter was texturized. Intake was 35% less and daily gain was 40% less for the TMR-fed calves vs the other 2 treatments which did not differ. So, is there a happy medium?

A study by Aragona et al. (2020) fed weaned Holstein steers with initial body weights of 150 lb (trial 1) at an age of 58 to 59 days at the Provimi Nurture Research Center. There were two trials with 48 calves per trial and 4 calves per group pen. In trial 1, the four treatments were starters with either low starch (8%) pelleted (~16% CP as-fed) physical form blended with 5% chopped hay which averaged 12.9% CP as-fed and fed free choice; a high-starch (45%) textured starter blended with 5% chopped hay fed free choice; the low starch pelleted starter limit fed to 4.4 lb DM daily with free choice long grass hay; or the high starch textured starter fed up to 4.4 lb DM with free choice long grass hay. In the second trial, calves averaged 168 lb initial body weight. The two treatments were a free choice blend of 95% texturized starter and 5% chopped hay or the same starter limit fed 5.2 lb DM along with free choice long grass hay. Starter in trial 2 averaged about 17% CP as-fed and hay averaged about 8.7% CP as-fed. Water was available free choice in both trials to all groups.

Total DMI and starter DMI (**Table 1**) decreased with long hay treatments while hay DMI increased with long hay treatments. This partially reflects that starter DMI was limited to 4.4 lb. daily, so it might be expected that calves would then increase free choice long hay intake. Daily gain was greater for the chopped hay treatments and for textured vs pelleted starter treatments. Likewise, hip width increase was greater for chopped hay and textured starter treatments. Chopped hay treatments also had increased body condition scores, but these were not different for the two starter treatments.

Table 1. Calf performance parameters in Trial 1 during days of age from about 60 to 96.

	Chopped hay Textured starter	Chopped hay Pelleted starter	Long hay Textured starter	Long hay Pelleted starter	SEM
Dry matter	6.14	5.95	5.00	5.02	0.40

intake, lb/day					
Starter DMI, lb/day	5.86	5.88	4.18	4.29	0.33
Hay DMI, lb/day	0.29	0.29	0.81	0.73	0.15
Daily gain, lb	2.29	1.98	1.96	1.59	0.11
Hip width increase, inch	2.28	1.92	2.01	1.81	0.09
Body condition +	0.4	0.3	0.2	0.1	0.07

Results from Trial 2 were like the results from Trial 1 in that total DMI and starter DMI were increased when hay was limited to 5%; while long hay intake then increased when starter was limited to 5.17 lb. DM daily. Hip width and body condition score were also increased when calves were fed 5% chopped hay mixed with the textured starter vs limit fed starter with free choice long hay.

Table 2. Calf performance parameters in Trial 2 during days of age from about 60 to 96.

	Chopped hay	Long hay	SEM
	Textured starter	Textured starter	
Dry matter intake, lb/day	7.53	6.50	0.18
Starter DMI, lb/day	7.18	5.09	0.18

Hay DMI, lb/day	0.35	1.41	0.12
Daily gain, lb	2.69	2.22	0.07
Hip width increase, inch	1.89	1.54	0.24
Body condition increase	0.6	0.3	0.05

There are several caveats with this study. First, there were no measures of gut fill. But from other studies such as Khan et al. (2011), we can surmise that more long hay intake, and being long, also likely increased gut fill and reduced intake and true body growth. Next, these trials we done with Holstein steers rather than heifers. When I was with Purina, we analyzed calf trials over several years to see if there were any differences in performance during the first two months of age for males and females, If they were the same body weight, then there were no differences. But male calves in the herd averaged 8.5% mor birthweight than female calves (Kertz et al., 1997). After two months of age, Holstein steer calves diverged somewhat in DMI, daily gain, and body composition; but that would be minimal (Fortin et al., 1980) for ages in this trial.

The Bottom Line

Providing more hay (long) than 5% of total intake along with the starter for Holstein steer calves during their third and fourth months of age reduced intake, daily gain, and probably increased gut fill as well. There may also be a safety margin in continuing to feed a textured starter during this transition period with introduction of forage and increasing forage level in the ration, That is why I recommend limiting forage to 1 lb. daily during month three along with free choice textured starter, and then increase the forage to 2 lb. during month four along with a pelleted grower.

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