

# THE DIGESTIVE TRACT

## Manage nutrition during backgrounding phase

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One of the keys to maximizing feeder-calf value is nutritional management from weaning until sale of the feeder calf. Cow-calf producers have many options when it comes to how they will manage

weaned calves and when they will sell feeder calves. If you are selling calves right at weaning with no preconditioning or backgrounding, you may very well be leaving dollars on the table.

Backgrounding calves prior to entering the feedlot is done for a variety of reasons, including to:

- ▶ capture value from inexpensive or compensatory weight gain;
- ▶ add value through a vaccination program;
- ▶ utilize available feedstuffs;
- ▶ hold calves for grazing season; and
- ▶ delay marketing to sell on a more favorable market.

Once you have made the decision to background calves, you need to decide what method will work best for your operation. Factors that will influence this decision include, but are not limited to, cattle type and weight, available feedstuffs, facilities, grazing resources and season of the year.

### Manage nutrition

Nutritional management during the backgrounding phase is essential to success. Each operation needs to determine how many days they intend to background calves and the desired rate of gain.

This is certainly not a one-size-fits-all kind of decision. Feed prices, cattle prices, weather, and previous nutrition and environment of the calves will all dictate how long and how hard you may want to feed the calves.

Previous nutrition and environment are important factors to consider as they relate to future gain potential. Compensatory gain is defined as a period of rapid and efficient gain following a period of restriction.

### Considerations for Angus calves

As the Angus breed continues to improve genetics for growth, the likelihood of calves not having adequate nutrition prior to weaning increases. Angus growth genetics continue to have an upward trend line. However, actual on-farm weaning weights have not followed the same trajectory. This is most easily explained by inadequate nutrition (forage availability and milk production) to support the genetic potential for growth.

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**Table 1: Nutrient requirements of medium-framed growing steers**

Steer weight, lb.	Daily gain, lb./day	DM intake, lb.	Protein, %	TDN, %	NEg, Mcal/lb.	Ca, %	P, %
500	0.5	11.5	8.5	54	0.25	0.25	0.17
	1.0	12.3	9.5	58.5	0.31	0.32	0.20
	1.5	12.8	10.5	63	0.38	0.40	0.22
	2.0	13.1	11.4	67.5	0.44	0.47	0.24
	2.5	13.0	12.4	73.5	0.51	0.56	0.27
	3.0	11.8	14.4	85	0.64	0.69	0.32
600	0.5	13.2	8.2	54	0.25	0.23	0.18
	1.0	14.1	9.0	58.5	0.31	0.28	0.19
	1.5	14.7	9.8	63	0.38	0.35	0.21
	2.0	15.0	10.5	67.5	0.44	0.40	0.22
	2.5	14.9	11.4	73.5	0.51	0.46	0.24
	3.0	13.5	12.9	85	0.64	0.57	0.29

SOURCE: Adapted from NRC, 2000.

**Table 2: Nutrient requirements of large-frame steers and compensating medium-frame growing steers**

Steer weight, lb.	Daily gain, lb./day	DM intake, lb.	Protein, %	TDN, %	NEg, Mcal/lb.	Ca, %	P, %
500	0.5	12.0	8.5	52.5	0.23	0.24	0.17
	1.0	12.8	9.5	56	0.28	0.33	0.19
	1.5	13.4	10.4	59.5	0.33	0.39	0.21
	2.0	13.8	11.4	63.5	0.38	0.46	0.24
	2.5	14.0	12.4	67.5	0.44	0.55	0.25
	3.0	14.0	13.4	72	0.49	0.63	0.28
	3.5	13.6	14.7	78.5	0.58	0.73	0.32
600	0.5	13.8	8.2	52.5	0.23	0.22	0.18
	1.0	14.6	9.0	56	0.28	0.29	0.18
	1.5	15.3	9.7	59.5	0.33	0.35	0.20
	2.0	15.8	10.5	63.5	0.38	0.40	0.22
	2.5	16.1	11.3	67.5	0.44	0.47	0.23
	3.0	16.1	12.1	72	0.49	0.52	0.26
	3.5	15.6	13.2	78.5	0.58	0.61	0.28

SOURCE: Adapted from NRC, 2000.

**Compensatory gain is defined as a period of rapid and efficient gain following a period of restriction.**

This isn't necessarily a bad thing, but it does mean that most calves will be compensating after weaning. Understanding this, and being aware of the implications on dry-matter intake (DMI) and nutrient requirement is important.

Tables 1 and 2 indicate DMI for a 600-pound (lb.) medium-framed steer with a targeted gain of 3.0 lb. per day is 13.5 lb. per day; whereas, a compensating medium-framed steer at the same weight and targeted gain will eat 16.1 lb. per day. There are also differences in protein and energy requirements.

If the calves have not had access to creep feed prior to weaning, it is important to start them on a high-roughage receiving diet and transition them gradually to grain or coproducts.

Grain coproducts such as distillers' grains, corn gluten feed and soybean hulls make excellent feedstuffs during the backgrounding phase. When utilizing corn coproducts, a high-calcium coproduct balancer should be used to ensure an appropriate calcium-phosphorus (Ca:P) ratio.

As commodity prices move higher, backgrounding operations that rely on grain and grain coproducts are

less profitable. Backgrounding calves on forage is also an option. The quality of the forage will have a significant effect on

the achievable gain while grazing.

High-quality winter annuals can easily support gains exceeding 2 lb. per day. Summer annuals, winter range and crop residues are all options, as well.

Winter range and crop residues typically have crude protein (CP) in the 5%-7% range. If desired gain is 1.5 lb. per day, calves grazing these poorer-quality forages would need protein supplementation.

**Conclusions**

Cow-calf producers have the opportunity to add significant value to their feeder calves during the backgrounding phase. Understanding compensatory gain and having a plan in place to utilize least-cost feedstuffs or grazing options will allow you to capture the most value in your feeder calves. |

Editor's note: "The Digestive Tract" is a regular column in the *Angus Beef Bulletin* focused on nutrition for the beef cattle life cycle. Dan Shike is associate professor in animal sciences at the University of Illinois.