Weaning Nutrition and Management

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One time-tested method of adding value to a calf-crop is to retain the calves post-weaning at a minimum through a 45-d preconditioning program. The 45-d length is required to participate in many special sales or programs and is viewed as the "gold standard" of having cattle ready for a forage based stockering program or directly into a feedyard. Beyond post-weaning management, many other ingredients are necessary for a successful program which maximizes your potential for added value. The one which takes the greatest planning and most forethought is the genetics of the calf crop. What is the sire's EPD's, etc. Repeat customers and premiums frequently are based on the genetic base of the cattle and documented performance. The other key ingredient to reputation cattle is an effective and well documented herd health program. Health and genetics are probably the two greatest determinants of achieving added value through selling preconditioned calves or retaining ownership through the stockering or feedlot phases.

The key to management through this process is a sound approach to calf management and nutrition through the weaning process.

Calf management - The focus of management practices should be to enhance value and decrease stress throughout the weaning process. That means castration and dehorning are done young and health vaccinations administered on time and according to label recommendations. Exposure to creep feed for a few weeks before weaning can decrease the required time post-weaning that it takes for calves to start consuming dry feed. Even low levels (1lb/hd/d) of creep consumption can hasten adaptation to feed post-weaning and minimize weight loss.

Recent attention has also been given to the weaning process with the management strategies of fence-line weaning or two stage weaning (stop nursing, then separate cow and calf). Both strategies have been compared to abrupt calf weaning and removal in research trials including one conducted at the Shenandoah Valley AREC in 2005 and 2006. Calves were assigned to a fence-line group, a nose-clip group where the clip was an anti-suckling device where calves remained with dams or a control group where the cows and calves were abruptly and completely separated. Fence-line weaning provided superior gain results as compared to nose clips or control groups when measured at days 7-14 post-weaning. In a Michigan research trial, the benefits of fence-line or nose clips dissipated by d-42 post-weaning. Both alternative strategies offer some short-term benefit in reducing stress on the calf but advantages in animal gain tend to be short-lived. These alternative, lower stress management options can become more important as the age at weaning is reduced.

Calf nutrition - During the first week post-weaning, the focus should be on intake, intake and intake. Nutrient density also plays an important role but dry matter intake is generally the most important challenge. Feeds offered should be high quality and palatable. Calves are accustomed to grazing; so long stem hay for the first 3-7 days is a recommendation. This should be high

quality, leafy hay. Hand feeding allows you to limit offer the forage to the point where the calves leave a small amount (generally 1-2% of body weight).

1. Hand feeding allows a better feel for true feed intake of the calves
2. Limit feeding forage lightly pressures calves to consume more dry feed
3. Many feeders find that slightly limiting intake and keeping calves somewhat aggressive allows for easier detection and pulling of sick calves
4. Limit feeding allows a better examination of feeding behavior and perhaps allows better general management of the group

Calves can be successfully started on many different feedstuffs including corn gluten feed, soyhulls, corn silage, etc. The important thing is to allow time for the calves to develop an appetite for new feeds, and the rumen bacteria to adapt to the new feeds. The feed mix should also meet the nutritional requirements of the calves (Table 1).

- Corn gluten feed adds energy and protein without contributing starch. As with many by-products, quality and nutrient content vary with source. Phosphorous content is an issue and the general economy of this leads to potential misuse. 1% of body weight is much preferred to ad libitum intake.
- Soyhulls are a very palatable, safe feed to use. They will add fiber, but not roughage. Protein content is 12-14%. Better as a supplement to forage programs and limited to 1% of body weight.
- Whole corn can work as well (or better) as ground corn in a starting ration. If grinding, avoid too fine and dusty.
- Calves can be started on corn silage, but a 2 week adaptation is best.

There are excellent commercial pellets available and several formulated for specifically for pre-conditioning.

Table 1. Suggested Nutrient Concentrations for Stressed Calves (dry matter basis)

Nutrient	**Unit**	**Suggested range**
Dry Matter	%	80-85
Crude Protein	%	12.5-14.5
Total Digestible Nutrients (TDN	%	60-70
Net energy for maintenance	MCal/lb.	.59-.73
Net energy for gain	MCal/lb.	.36-.41
Calcium	%	.6-.8
Phosphorous	%	.4-.5
Potassium	%	1.2-1.4
Magnesium	%	.2-.3
Sodium	%	.2-.3
Copper	ppm	10-15
Iron	ppm	100-200
Manganese	ppm	40-70

Zinc	ppm	75-100
Cobalt	ppm	.1-.2
Selenium	ppm	.1-.2
Iodine	ppm	.3-.6
Vitamin A	IU/lb	1800-2700
Vitamin E	IU/day	180-230
NRC (1996)		

Other notes/ cautions -

- If the calves are not part of a retained ownership program, be cautious of gains exceeding 2 lb/d due to supplementation. Calves can be considered too fleshy and potentially discounted by buyers.
- Purchased, commingled calves should follow the same nutritional program, but the lack of nutritional history and additional stress increase the challenges.
- Growth promoting implants will usually increase daily gain 10% during the preconditioning period and return a profit over your investment.
- Newly weaned or received calves should have enough feed bunk space so all the calves can eat at one time (18-24”/hd).
- Non-protein nitrogen sources such as urea or chicken litter should not be introduced until the calves are settled in.