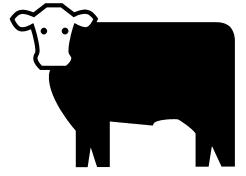


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# “Improving Your Grades”

## 25 TIPS TO ENHANCE

- ◆ Performance,
- ◆ Productivity &
- ◆ Profitability

By

Drew A. Vermeire, Ph.D., PAS, Dipl. ACAN

## I. Cattle Feeding: Tips to improve feed management and cattle performance

### 1. How often to feed?

- Surprisingly, cattle eat more when fed once per day, yet this gain more weight, more efficiently and more profitably when they are fed twice per day.
- The difference in profitability between once and twice per day feeding is about **\$18.53** per head!
  - Cattle fed twice daily gained 9.1 lbs more weight worth \$0.65/lb for an advantage of **\$5.92/head**.
  - Cattle fed twice daily gained more efficiently which saved **\$12.61** per head in feed cost compared to feeding once per day.

Performance and Economics of Feeding Cattle Once per Day vs Twice per Day									
Feeding System	Initial Weight, lbs	Final Weight, lbs	Avg Daily Gain, lbs	Feed Intake, DM lbs	Feed/Gain	Cost of Gain, \$/lb	Cost of Gain, \$/head	Value of Additional Gain	Value of Twice/day Feeding
Once per day	834.25	1231.4	2.78	21.72	7.86	\$0.3624	<b>\$143.93</b>	- 0 -	
Twice per day	837.05	1240.5	2.97	20.92	7.06	\$0.3255	<b>\$131.32</b>	<b>\$ 5.92</b>	<b>+ \$18.53 per head</b>

From: Hoffman, et al. 1992 Beef & Sheep Research Report, A.S. Leaflet R922, p. 115-118. Iowa State University, Ames, Iowa

### 2. What time to feed?

- Consistency is important. Always feed at the same time every day. This includes weekends and holidays.
- Optimally, feeding should begin between 6:00 and 7:00 am and between 3:00 and 5:00 pm

### 3. How much to feed?

- Stay ahead of the cattle. Feed increases (or decreases) should be based on the cattle, *not* the feed bunk! Watch the cattle at feeding time. About 25-30% of the cattle should be waiting at the bunk when the feed truck arrives, 50% should be stretching, and moving towards the bunk and the balance hanging back. When 45-50% are at the bunk, its time for an increase – guideline: 2%. Wait for 3-4 days before considering another change. The bunk will lie to you! It might be slick because of a mistake in feeding, or due to changes in the weather – not because the cattle need more feed. The key to feeding is to watch and read the cattle.
- Feed by the head, not by the pen. The number of cattle in the pen changes when sick cattle are pulled or returned, cattle are shipped, or cattle are received. Feed calls should be based on pounds per head, then multiply that amount by the number of head in the pen. Accurate pen inventories are required to properly feed.
- Increases and decreases in feed amounts should be by percentage, not by a set number of pounds per head. Feeds vary in moisture content and energy density and cattle consume more feed as they grow. Percentages remain constant regardless of moisture and intake. Normal changes would be 1-2%, while big changes would be 4-5% if some drastic action was needed.
- Feed slightly less (5%) than the cattle would consume given *ad lib* access to feed. This saves some feed, reduces the incidence of bloat, acidosis, and other feedlot disorders, and **saves about \$0.85 per head**. When 25-30% of the cattle are at the bunk at feeding time, then you are maintaining the proper amount of aggressiveness at the bunk. This is your feedback that the cattle are getting slightly less than they would consume *ad lib*.

Performance and Economics of Feeding Level: <i>ad libitum</i> , 5% Restricted or 10% Restricted Intake									
Feeding System	Initial Weight, lbs	Final Weight, lbs	Avg Daily Gain, lbs	Feed Intake, DM lbs	Feed/Gain	Cost of Gain, \$/lb	Cost of Gain, \$/head	Value of Additional Gain	Value of Feeding Program
<i>Ad libitum</i>	836.9	1240.4	3.00	22.36	7.50	0.3458	139.53	- 0 -	
<b>5% Restricted</b>	833.8	1235.2	2.89	21.34	7.42	0.3421	137.32	- 1.36	<b>+ 0.85</b>
10% Restricted	836.4	1232.2	2.73	20.26	7.48	0.3449	136.51	- 5.01	-1.99

From: Hoffman, et al. 1992 Beef & Sheep Research Report, A.S. Leaflet R922, p. 115-118. Iowa State University, Ames, Iowa

#### **4. Feed delivery?**

- Feed should be evenly distributed in the bunk from post to post. Cattle are creatures of habit and will eat within three feet of the same bunk location, at every feeding.
- Feed in the same pen order everyday.
- Feed 35-40% of the daily allocation in the morning.
- Feed 60-65% of the daily allocation in the afternoon.
- Feed every pen 1.0-1.5 lbs of feed per head on the first cover, then finish the morning allocation.
- Keep bunks clean of fines, foreign material, and any spoilage that may occur.

#### **5. Feed mixing?**

- For 4-screw and rotary boxes, add in order while mixing: Dry roughage, grain, liquids, supplement.
- For 4-screw and rotary boxes, add in order while mixing: Silage, base mix, supplement, grain, liquids.
- For 3-screw boxes, add in order while mixing: 1/2 grain, roughage, balance of grain, liquids, supplement.
- For roughage-based diets, mix 3-6 minutes after last ingredient is added.
- For Corn/pellet no-roughage mixes, add in order with mixer off: Whole shelled corn, supplement pellets. Mix 1-2 minutes, then discharge mixer.

#### **6. What to feed?**

- Feed what you have! If you have facilities for roughage - silos, feed bunks, mixer, feed truck, etc., feed silage, base mix plus protein ingredient (or supplement), and grain.
- If you don't have extensive facilities, consider whole shelled corn/supplement no-roughage program.
- By-product ingredients require consistent, large supply, steady price, physical storage and handling facilities to be profitable in most cattle feeding situations.

#### **7. No-Roughage Feeding with Steer Stuffers.**

- Limit Steer Stuffer bunk space to 2-4 inches per head by keeping enough cattle in pen. Animal-to-animal competition helps reduce overeating and feedlot disorders.
- Adjust slide gate to 3/4" to 1" only. This helps keep feed clean. When cattle work at feed to eat, fewer feedlot disorders occur such as bloat, acidosis, founder, etc.
- Elevate one end of Steer Stuffer 2-4 inches to help fines accumulate in one end, for easier cleaning.
- Mixing feed too long in power mixers will break down pellets into fines. Do not over-mix!
- Bedding should be added frequently in small amounts. Do not bed with large amounts of straw!
- Keep Steer Stuffer clean of fines, foreign material, and any spoilage that may occur.

#### **8. Water and Waterers**

- Animals can live about 60 days without food, but less than 7 days without water. Water is tremendously important, but often overlooked. Cattle will not eat if they cannot drink enough water.
- Waterers should be cleaned frequently (2-3 times per week during summer, weekly during winter).
- We do not recommend waterers with floating balls (nearly impossible to clean and become like septic tanks) or metal hinged-lid waterers (difficult to clean, must put hand in water to clean, too much exposed area to heat). We strongly recommend Nelson livestock waterers. These are durable, easy to clean, do not require much energy to heat, and can be cleaned quickly without ever getting your hands wet.
- Keep toilet bowl brush handy to clean waterers.

## II. Cattle Management: Tips to Manage Cattle and Facilities

### 1. What type of facilities do I need?

- Barns were made for people comfort – not for cattle. Actually, cattle are more comfortable outside, with some wind and water protection. Improve ventilation of existing barns by opening ridge peak to 12-16” and replacing siding above 5’ height with “Yorkshire Boarding” - 1” x 4” boards vertically mounted with 1” gap between boards. This provides draft-free ventilation for the cattle, reduces incidence of respiratory disease, and improves performance.
- Pens should never be square shaped. Squares do not make cattle handling easy, but allow cattlemen to practice their rodeo skills every time they try to move cattle out of the pen! The preferred pen shapes are diamond or herringbone. Pens built as diamonds or herringbones make cattle handling easy.
- Cattle need fresh air, a dry place to sleep, and protection from the wind. In Alberta, Saskatchewan, and Manitoba, Canada and Washington, North Dakota, and Montana, where winters are extreme with cold temperatures and severe winds, feedlots are built of oilfield pipe or wooden fencing with wind break protection made of porosity fences. The best porosity fences are “Yorkshire Boarding” - 1” x 4” boards vertically mounted with 1” gap between boards. These fences are about 10’ high, and are either used for the perimeter of the pen, or are built in the center of the pen in a “W” or lazy “Z” shape to allow the cattle to get out of the wind, regardless of which direction it blows.
- The table below shows the results of research conducted at Iowa State University comparing three housing systems for yearling cattle: Confinement, a simple shelter (consisting of a 3-sided shed), or no shelter whatsoever. Interestingly, cattle performance in confinement was poorer than no shelter at all. Cattle provided some shelter (3-sided sheds) gained more weight, gained weight more efficiently, and returned \$15.62 more per head than confinement and \$14.25 more per head than No Shelter.

Performance and Economics of Housing System: Confinement, Shelter or No Shelter									
Housing System	Initial Weight, lbs	Final Weight, lbs	Avg Daily Gain, lbs	Feed Intake, DM lbs	Feed/Gain	Cost of Gain, \$/lb	Cost of Gain, \$/head	Value of Additional Gain	Value of Feeding Program
Confinement	840.86	1236.50	2.59	20.22	7.82	\$0.3606	\$139.06	---	---
Shelter	840.04	1248.64	3.14	22.00	7.00	\$0.3227	\$131.86	\$8.42	<b>+ \$15.62</b>
No Shelter	839.15	1237.95	2.87	21.53	7.60	\$0.3504	\$139.74	\$2.05	+ \$1.37

From: Hoffman and Rabearimisa 1992 Beef & Sheep Research Report, A.S. Leaflet R923, p. 119-122. Iowa State University, Ames,

### 2. Cattle handling facilities (Much of this information from Dr. Temple Grandin, Colorado State University)

- Cattlemen need to be able to efficiently move and work cattle: receiving and processing new cattle, treating sick cattle, shipping fed cattle, etc.
- A basic handling system is needed for every cattle facility and includes: holding pens, a curved lane to a round forcing pen, a loading ramp, and a curved race chute and squeeze chute. These can be simply designed and built.
- Cattle handling facilities should be curved and have solid sides. Curves take advantage of cattle’s natural circling tendencies and prevent cattle from seeing the squeeze or truck.
- Cattle have excellent senses of smell and hearing. Avoid loud noises which startle cattle. Music helps to keep cattle calm. Shaking a plastic garbage bag will move cattle easily. Put rubber bumpers on metal gates and avoid clanging.
- Prevent bruising by gentle handling.
- Cattle have panoramic vision and can see behind without turning their heads. Lighting should be diffuse and avoid sharp contrasts, shadows, drain grates, shiny objects, flapping objects, coats on fences, dogs, water puddles, pinpoint light sources. Light dark places you are moving cattle to, but avoid bare bulbs that shine in cattle’s eyes.
- Do not build ramps or chutes facing into the sun.
- Use cattle’s herd behavior to your advantage – allow leaders to move first and the rest of the cattle will follow. Avoid moving only one animal. Move 4-5, separate the one you want, and send the rest back.

### **III. Health Management: Tips to Reduce Sickness and Medical Costs**

#### **1. Working with your Veterinarian**

- Your local veterinarian should be part of your management team. Keep accurate records and have regular visits with your veterinarian to develop a health management program to prevent sickness and maximize your operation's profit potential.
- Develop a set of "standard operating procedures" with your veterinarian. These should be your usual treatment protocol for common diseases you encounter with your operation. You'll maximize your treatment effectiveness and the expertise of your veterinarian.
- Every animal that dies should have a necropsy performed to understand the disease process and prevent other animals from falling to the same sickness.
- When disease outbreaks occur, call your veterinarian as soon as possible. He or she will take tissue samples to help make an accurate diagnosis and prescribe the best medications for the disease you are fighting.
- Antibiotics have no effect on viruses or nutritional illnesses. Don't waste time, money and medications. The right diagnosis leads to the right treatment.

#### **2. Receiving cattle**

- Prevent sickness if possible. Giving every animal a dose of Micotil<sup>®</sup> or Nuflo<sup>®</sup> on arrival can prevent sickness in feedlot cattle. Many feedlots use Micotil<sup>®</sup> or Nuflo<sup>®</sup> on arrival for all animals with a temperature of 103.5° F or above and LA-200<sup>®</sup> on those with lower body temperatures.
- Feed management and composition are critical during the receiving period. BABY DOLL<sup>®</sup> has receiving products and programs specifically designed for high-risk cattle on arrival. Because stressed cattle don't eat very much feed, these products are very nutrient-dense so every mouthful counts!

#### **3. Sick pen**

- Locate the sick pen as close to the office and entrance/exit as possible. Cattle that need attention should be the first seen when you arrive and the last seen when you leave.
- Sick pens should be well bedded and well protected from wind, rain, mud, and heat. A shed with a high roof is beneficial so long as it has lots of draft-free air movement.
- Sick pens should be adjacent to handling facilities to make treatment easier for the cattleman and gentler for the cattle.

#### **4. Pulling and treating sick cattle**

- The easiest time to check pens for sick cattle is immediately after feeding. Sick cattle generally don't come up to the bunk and eat with the rest of the cattle. Pull sick cattle as soon as they are identified. Handle sick cattle as gently as possible – they don't feel well!
- Treat sick cattle and keep accurate records of the date and time the animal was pulled, body temperature, symptoms exhibited when pulled, etc. and the treatments given.
- Withdrawal times of medications must be carefully observed. Put an additional, bright colored ear tag in the ear of cattle given medications requiring a long withdrawal indicating the earliest ship date for the animal. For example, if a steer was treated with a drug requiring a 45 day withdrawal on June 17, put an ear tag in the ear showing August 1 since June 17 + 45 days = August 1.

#### **5. Vaccines**

- Vaccines are generally either killed strains or modified live strains of a disease organism. Follow manufacturers directions carefully for the particular type of vaccine you are using.
- Do **not** use alcohol or other antiseptics on needles or syringes used for modified live vaccines. This will kill the modified live vaccine and render it ineffective.
- Make certain that vaccines are not used beyond expiration date.
- Work with your local veterinarian to develop a vaccination program appropriate to your operation.
- Do not give partial doses of vaccines. They have been developed with a particular dosage needed for protection against a particular disease.
- Do not mix vaccines in the same syringes. They may negatively react and reduce disease protection.

## 6. Feeding to prevent sickness

- Sick animals are often money losers. They do not gain weight rapidly, efficiently, or profitably.
- Consistent feeding at the same time every day, consistent amount of feed, and well balanced feed improves performance and reduces feedlot disorders and metabolic disturbances.
- Feeding organic trace minerals (zinc, manganese, copper, iron, iodine) and certain vitamins (vitamin A, vitamin E) stimulate immune system function. Fewer animals become sick and those that become sick recover faster. Net result: lower medication cost and more efficient and profitable gain. The BABY DOLL Program exclusively uses organic trace minerals for zinc, manganese, copper, iron, and iodine. We never use low bioavailable forms of these trace minerals like oxides and sulfates. We formulate to higher levels of vitamin A, vitamin D, and vitamin E to help protect cattle from disease. We guarantee the levels of many more nutrients than is required by AAFCO. This is your assurance of high quality and consistent products.
- Least cost formulation increases feed company profits, but costs cattle producers performance and profit. Least cost formulated feeds have changing ingredient composition that causes cattle to resist the unfamiliar smell and taste and poor pellet quality that causes fines which can lead to respiratory challenges. Fixed formulas result in more consistent feed intake, better products, better performance, and greater profit opportunities. All products in the BABY DOLL Program have fixed formulas for higher quality products and consistent performance.

## 7. Where to give shots

- The cattle you raise today will be on someone's table tomorrow. Always make certain medications are used properly. Never give injections into the hind leg, rump, or back muscles which are the most valuable cuts and you risk injection site abscesses (walled off infections). Injections should only be given into the neck.
- Injections can be given into the muscle (intramuscular or IM), under the skin (subcutaneous or Sub Q), into the body cavity (intraperitoneal or IP), or into the blood (intravenous or IV). Check the label for recommended injection method. Use the least invasive technique available – sub Q is preferred to IM, whenever possible.
- Avoid injection site defects (abscess formed at site of injection) by using sharp, clean needles and proper delivery techniques. A wet animal is a dirty animal – disinfect injection site.
- Implants should be given in middle third of ear. We recommend Component™ products from VetLife. These products have a superior delivery device (gun) and many types of implants use the same gun. Clean and disinfect ear prior to implantation if the ear is dirty or wet. Many feedlots put the implant cartridge into a gallon size Ziplock® bag with 1-2 teaspoons of Terramycin® soluble powder. They shake the bag and thus coat the implant pellets with the antibiotic powder to reduce or prevent infections in the ear.

## IV. Cow-Calf Ranch Topics

### 1. Weaning

- Wean calves early to improve calf performance and cow reproductive performance. Calves can be successfully weaned at 90 days or less with creep feed and careful management. Cows will maintain better body condition and have improved reproductive performance.

### 2. Body condition scoring

- Use body condition scoring to improve cow nutrition. Cows in poor body condition need additional feed if they are to breed and produce a healthy calf.
- Cull open cows. A cow is an expensive incubator and an open cow is losing money every day. Replace open cows with heifers that will produce a calf every 12 months.

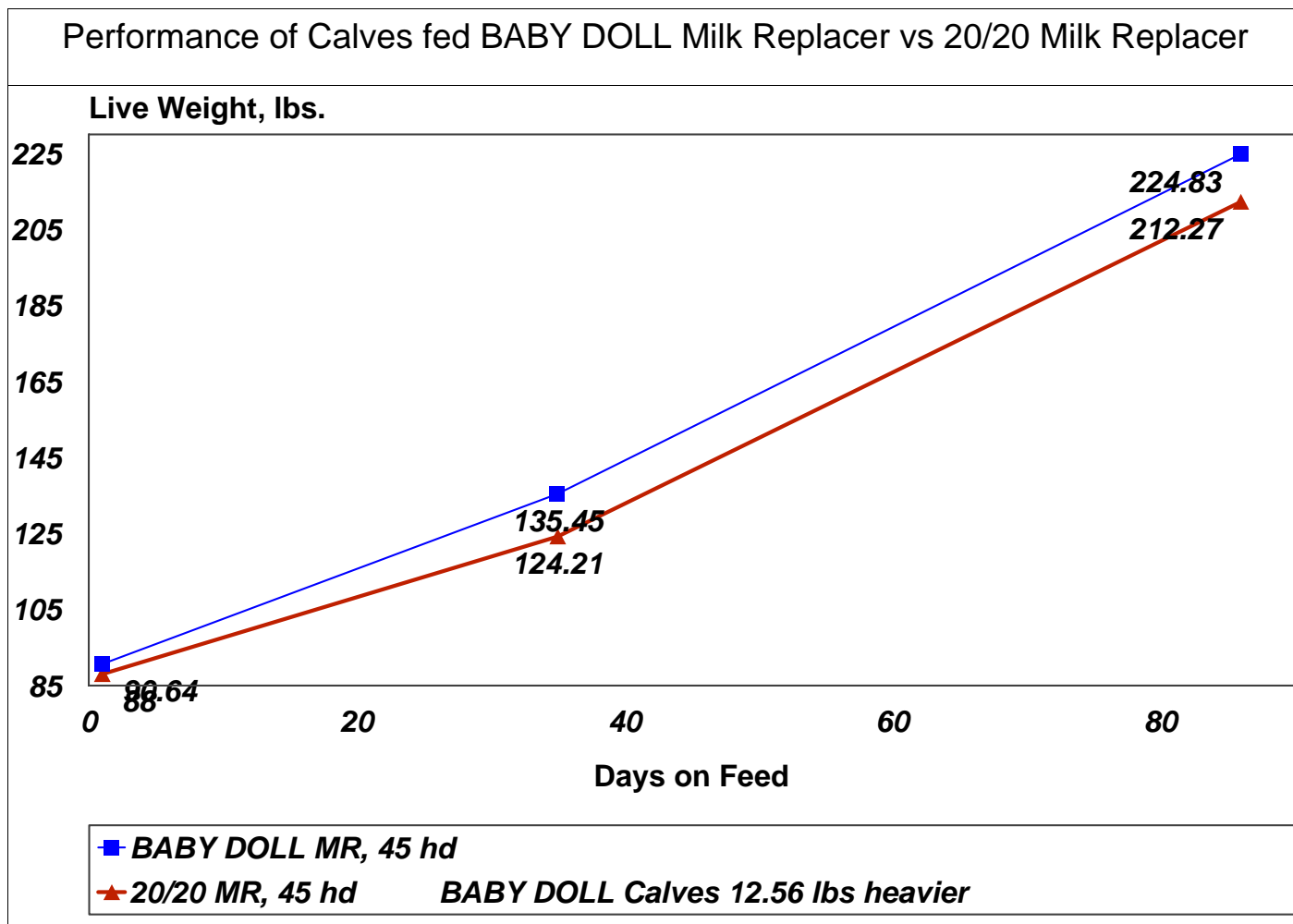
### 3. Feed management

- Utilize rotational grazing program to maximize forage resources. Test soils and forages to determine fertilization program best suited for your operation. Harvested feeds are much more costly than pasture resources. Extend the grazing season with cool season grasses, corn fodder, and crop residues in winter and warm season grasses in the heat of summer. Small round bales left in the field can provide low-cost winter feed.
- Manage mineral intake of the cow herd. Provide salt blocks when mineral consumption is excessive and mix some ground corn or soybean meal with the mineral to increase consumption. Monitor cow mineral intake and make adjustments as needed.

## V. Calf Ranch Topics

### 1. Milk replacer management

- Use a scale to weigh the milk replacer powder for the calves. Mix in hot water (120-130° F) with a wire whisk or power mixer. Do not over-mix with power mixing equipment as the fats can separate like butter.
- BABY DOLL Milk Replacer is NON-MEDICATED. For outbreaks of scours or respiratory disease, neomycin sulfate and oxytetracycline can be added to milk replacer at the time of mixing.
- BABY DOLL SMART STARTER™ is designed as the perfect complement to BABY DOLL Milk Replacer. Bovatec® in SMART STARTER™ prevents coccidiosis and improves feed efficiency of calves. The vitamins, minerals, and balanced protein sources are designed to maximize calf performance when the two products are fed together.
- Do not add additional vitamins, minerals, or medications to BABY DOLL Milk Replacer – it is already fully fortified.
- Wean calves early. Calves can be weaned when they are healthy, at least 21 days old, and meet the following criteria: 1) daily intake of Smart Starter™ is at least 1% of the calf's initial body weight; 2) cumulative intake of Smart Starter™ is 9% of the calf's initial body weight; and 3) calf has gained at least 12% of its initial body weight. This weaning strategy results in healthier, bigger calves and saves \$2.50 – \$5.00 per head.
- BABY DOLL Milk Replacer is designed to maximize performance of Holstein calves. In controlled research, calves fed BABY DOLL Milk Replacer gained 25% more weight and had half the death loss of a 20/20 all-milk typical milk replacer. Research results are shown below. Calves were weaned at equal age in this research study. We recommend weaning according to the protocol above, and in practice, calves are weaned earlier with BABY DOLL Milk Replacer than with 20/20 milk replacers, but calves perform better with BABY DOLL Milk Replacer. This particular group of calves had high morbidity and mortality rates, but illustrates the performance differences between BABY DOLL Milk Replacer and a 20/20 Milk Replacer. Even with disease outbreak, calves fed BABY DOLL Milk Replacer made a profit, while calves fed the 20/20 Milk Replacer suffered a loss.



## 2. Implants

- Do not implant baby calves that weigh less than 300 lbs. The limitation on growth at this age is feed intake and implants do not increase weight gain of calves at this age or body weight.
- Holstein steers should be given 1 implant only! Use Component E-S, Synovex S, or Ralgro when the cattle weigh 300-500 lbs. Never implant Holstein cattle within 130 days of market or heavier than 700 lbs.

## 3. Dealing with scours

- Keep scoured calves hydrated. Calves with scours and droopy ears and/or sunken eyes have lost 6-9% of their body weight in fluid and require 2-4 quarts of electrolyte PLUS 4 quarts of milk replacer per day.
- We recommend Nouriche Nutrition's C.H.E.E.R.S. electrolyte because it contains sodium citrate and **no bicarbonate**. Unlike bicarbonate, citrate does not interfere with milk digestion and allows you to keep feeding milk and, therefore, meeting nutritional requirements of the calf. In addition to electrolyte, feed 4 quarts of milk replacer each day.
- When calves stop sucking, they are showing a symptom of serious dehydration. You will need to "tube" electrolyte and milk and/or provide IV electrolyte solution, in order to successfully break the cycle of dehydration.
- Calves will encounter scours generally during the first 10 days of life. Scours caused by viruses do not respond to antibiotics and most calves will recover if they are kept hydrated with plenty of electrolyte solution.
- Prevent coccidiosis scours near weaning by treating with amprolium from day 12-17 of age.

## VI. Cattle Economics

### 1. Only feed "Good Cattle"

- The BABY DOLL definition of "Good Cattle" : Cattle that make money are good cattle!
- Feed cattle based on sound economics, not emotional ties to a particular type or breed of cattle. Sometimes the most profitable cattle are those that nobody else wants to feed. Cattle purchased the week of Christmas, for example, are usually bought well under the market because few cattlemen want to bring in new cattle during the holiday week. Those that are willing to work during the holiday are usually rewarded with a profit.

### 2. How much can you spend for cattle?

- Estimate your cost of gain including: feed costs, yardage (labor, facilities, etc.), interest, death loss, medication, and profit.
- Estimate future market value of cattle from Chicago Mercantile Exchange futures price minus any basis discount and freight, commissions, and misc. costs. Futures prices are reported in many newspapers, The Wall Street Journal, and can be found at the Chicago Mercantile Exchange website at [www.cme.com](http://www.cme.com).
- Subtract the production costs from the future value to estimate how much you can afford to spend on feeder cattle. Don't spend more than you can afford to spend or you'll lock yourself into feeding cattle at a loss!

### 3. Cost of gain vs price per ton

- Do not get caught up in the price per ton game. Feed companies can easily make feeds cheaper by reducing the nutrient level. Professional cattle feeders are concerned with the bottom line cost of producing cattle and the profit opportunities provided by quality nutritional programs. Compare programs with the performance and cost of gain, rather than the price per ton of feed.
- The most expensive feed to use often has the lowest price per ton. The bitter taste of poor performance lingers longer than the sweet taste of a low price.
- The BABY DOLL Program is your best value. Our programs and products are designed for high performance, and healthy, profitable cattle. We provide technical expertise and assistance that only beef specialists can provide. Our products are neither the highest or lowest priced products on the market, but are always the highest quality products available. Our balanced nutrition includes organic trace minerals and high vitamin levels to improve immune system function and reduce costly sickness in cattle. The result is high performance, low cost of gain, and better profit opportunities for you, the cattle feeder.