

# AUTOMATIC CALF FEEDERS:

Insights & Best Practices

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Hello and thank you to Dr. James and Dave Long for organizing this event, and for the opportunity to speak with you this evening.

Tonight, I will talk with you about some of the advantages and benefits of automatic feeding.

Biotic Industries is committed to the development of new products that reduce the workload of farmers while helping to increase their profits.



## BIOTIC INDUSTRIES

Patented world's first  
automatic calf feeder in 1962

Located in Tennessee

Made in US since 1986

Products used across US  
& worldwide

Biotic Industries is located in Tennessee and has been manufacturing in the US since 1986.

Our feeders were originally developed in France, by Michel Legrain, a calf dealer buying and selling a large volume of calves.

Michel Legrain recognized the opportunity to create a better approach to feeding calf than bottle or bucket feeding, and 1962 he patented the first automatic calf feeder, and created the company ETS Legrain.

Today, our products are successfully used all over the U.S. and around world, and are recognized as an efficient, effective approach to feeding calf.

# AUTOMATIC CALF FEEDERS: INSIGHTS & BEST PRACTICES

Traditional calf feeding methods

Automatic feeders: features & advantages

Best practices & lessons learned



This evening we will look into the features and advantages of automatic calf feeders, as well as share a few of the best practices and lessons that we have learned, during Biotic Industries' long history of developing and producing automatic feeders.

Before we go into detail about automatic feeders, I want to share a quick look at traditional calf feeding methods and how our calf feeder evolved.



Nursing by Mother

Most natural method of calf feeding.

Convenient, low-labor.

Healthy for calves.

Calves feed “on demand”.

Milk consumption based on mother’s milk production.

Calves nursed by their mothers are strong & healthy.



We are all familiar with the most fundamental means of calf feeding: nursing by the mother.

This is the most natural method of feeding calf .

It is convenient, does not require much labor, and is a healthy option for the calves: calves feed on demand.

In addition, a calf’s access to milk is controlled by its mother’s milk production. This is a critical aspect of calf nutrition, digestion and physical development.

In other words, calves nursed by their mothers are typically strong, tough, healthy calves that do not tend to require special care.

Limitations for large-scale operations.

Requires availability of one mother for each calf.

Reduces or eliminates ability to sell milk.



However, nursing calves with their mothers can have some important limitations – including the fact that it requires the availability of a cow for each calf, and that it can limit – or eliminate – the opportunity to sell milk.



Now let's talk about an other method: Bottle Feeding or Bucket Feeding.



Allows nursing calves without mothers present

Permits feeding on pre-set schedule

Efficient & convenient for feeding groups of calves

The practice of bottle feeding or bucket feeding evolved in part as a response to the limitations of nursing calves with their mothers.

Bottle or bucket feeding alleviates dependence upon the availability of a mother and offers the efficiency of feeding calves as a group as part of a preset schedule.

But this method also comes with some fundamental disadvantages both from the standpoint of the calves and of the farmer:



### **Forces unnatural behavior for calves.**

- Calves must be taught to drink not suckle.
- Suckling is natural & instinctive.
- Supports important physiological processes, including digestion, food absorption & overall health, vitality & strength.

Bucket feeding forces calves to adopt an unnatural method of feeding: instead of suckling, which is a natural behavior for the young animal, bucket-fed calves must be taught to drink instead of suckle.

Suckling is an instinctive need for calves and one that sets in motion a chain of reflexes that control important physiological processes, including digestion, food absorption and, in turn, the overall growth and well-being of the animal.

While bucket feeding may present a convenient alternative to nursing a calf with its mother, the practice eliminates the benefits associated with allowing calves to fulfill their instinctive need to suckle.



### **Impedes physical development.**

- Calves must be tied or boxed for feeding.
- Creates stress, limits muscular development, Increases vulnerability.
- Calves more prone to digestive problems & illness.

Calves must be tied up or boxed in order to be fed in this manner. In addition to the physiological stress associated with restricted freedom and mobility, this practice can greatly limit calves' strength and muscular development.

It can also increase their physical vulnerability, making them more susceptible to digestive problems, illness and disease.



**Imposes unnatural feeding quantity & frequency.**

- Calves usually restricted to 1-2 feedings/day (vs. higher frequency when nursed naturally).
- Gulping milk in larger volume causes gastric problems & distress.

Bottle or bucket feeding can offer convenience for the farmer, but this method can create additional stress for the calves.

Bottle or bucket feeding imposes feed times and feed quantities that do not align with calves' natural feeding cycle.

While calves nursed with their mothers have the ability to consume and digest milk in smaller quantities, on demand, throughout the day, but bottle/bucket calves are usually rationed to one or two feedings per day. As a result, these calves may tend to gulp down milk in larger quantities than they would in a natural feeding environment, causing gastric problems and distress as they are forced to digest milk in larger volumes than they are physically equipped to handle.



### **Creates practical inconveniences:**

- Requires more human labor (time intensive).
- Use of additional supplements & resources may be required (antibiotics, antiseptics, special building etc)
- Does not produce animals at optimal health, weight & quality (optimal cost!).

Bottle/bucket feeding also creates some practical inconveniences.

The feeding process is highly dependent upon trained, qualified and dependable staff who understand how to correctly measure, dilute, heat, dispense the milk and clean up the bottle or bucket that has been used to feed the calves .

Any lack of oversight during this process may compromise the health of the calves.

This feeding method also tends to produce sluggish, under-developed calves with greater physical vulnerabilities than those fed in a more natural manner.

Farms often have to resort to using antibiotics, antiseptics, specially design building, and a variety of other artificial tools and processes

***at additional labor and financial cost***

in order to try to sustain calf health and viability.

To address these issues, other variations on this method have been tried, including milk pallets, cold milk, and acid milk, but without satisfactory results.



Automatic Calf Feeding offers the best of both feeding methods with great advantages in terms of cost-savings, efficiency, and calf health and development.

Based on the way a calf nurses with its mother.

Combines benefits of natural feeding approach with cost & labor-savings, increased efficiency, & management advantages.



Automatic feeders are designed to mimic calves' natural nursing cycles.

They combine the benefits of a natural feeding approach (nursing with mother) with important saving in cost and labor , increased efficiency, and management advantages.

Calves feed at their own frequency and volume throughout the day.

Calves are free to move around (does not require physical restriction).

Feeders designed to fulfill natural instinct to suckle.



Automatic feeders allow calves to independently determine the frequency and amount of their intake throughout the day in a manner similar to the way that they would nurse with their mothers.

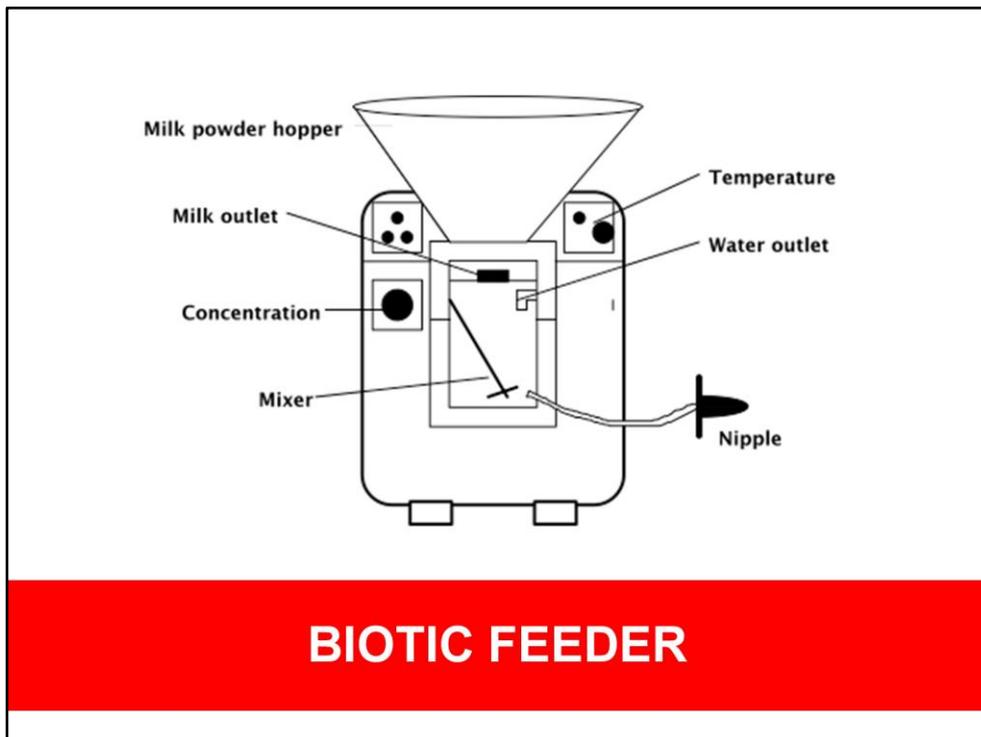
Calves raised on an automatic feeder are not required to be physically restricted. They can move around freely and feed at will.

The feeders are designed to fulfill calves' natural instinct to suckle (rather than drink or gulp), thus also supporting calves' normal digestion and food absorption, and limiting physical and physiological stress.



Biotic Feeders are the original automatic calf feeders.

As I mentioned, they were developed by Michel Legrain, who patented the first feeder in 1962.



### How the Feeder Works

The machine automatically mixes small quantities of milk replacer with warm water at a desired concentration. The animals take the mixed liquid by means of a nipple. The machine consists of a hopper, water tank and heater, mixing bowl with outlets for the nipples and an electro-mechanical system which mixes the powdered milk and water in desired proportion and temperature.

The mix is made in batches.

When the milk level goes below the sensor, the feeder start a new batch. The water enters the heating tank via a water valve where it is heated and controlled by a thermostat.

The machine can be washed once a day by turning on the powder/rinse switch to allow warm water to flow through the mixing bowl, nipple tubing, and nipples. It takes approximately five minutes per day per feeder to rinse the machine and refill the hopper will milk replacer.



## SAVES TIME & LABOR

Fully automatic

No mixing or feeding by hand

5 minutes/day maintenance

Installs in any building

Requires water & electricity

The Biotic system provides on-demand feeding that allows calves to nurse in a manner similar to nature. The system offers several advantages over manual feeding, including:

### **Time & Labor Savings**

- Biotic feeders are fully automatic, so no mixing or feeding by hand is necessary.
- The feeders work with minimal maintenance and require only five minutes per day for cleaning and monitoring.
- Biotic feeders can be located in any type of building and need only connections to running water and electricity.



## REDUCES COST & WASTE

Saves time & decreases labor

Eliminates product waste –  
uses only exact amount of  
milk replacer per calf.

Increases operation efficiency

- In addition to reducing labor costs and time requirements, Biotic feeders also help to reduce costs and waste by mixing only the amount of milk replacer necessary for each animal: there is no excess or waste.

- Automatically managing feeding helps to greatly reduce labor costs and product costs, and improves overall operational efficiency.



## DELIVERS MILK ON DEMAND

Calves feed on demand according to natural instinct & need.

Adjustable milk quantity & quality (strength of milk adaptable).

Given restricted feed times, bottle or bucket-fed animals typically try to eat all they can at once. This can trigger physical and physiological stress, and impede healthy calf development.

- Biotic feeders allow continuous access to the milk and gives calves the ability to feed at will or 'on demand' in accordance with their natural habits.
- Biotic feeders also permit the adjustment of milk/powder ratio
- (the strength of milk is adjustable).



## **STRONGER, HEALTHIER CALVES**

### **Allows free movement**

- Calves display better muscular development, form & meat quality.

### **Promotes healthy physical development**

- Milk is warmed.
- Artificial nipple promotes instinctive suckling action vital to important physiological functions.

The result is Stronger, Healthier Calves

There is ample evidence that calves reared quickly to weaning weight continue to outperform their peers throughout their lives.

- Biotic feeders allow calves to move about freely, resulting in animals with better muscular development, form, and meat quality.

- In addition, Biotic feeders support healthy physical development by allowing calves to drink warmed milk by means of a nipple, promoting the instinctive suckling action that is essential to the normal functioning of their digestive systems, and overall health.



The ID-TEK system takes the automatic feeding system one step further by making it possible to program and control individualized meals for each calf .



## ID-TEK

Customized automatic feeding with programmable milk quantities & feeding frequency for up to 25 individual calves.

If we go back to the natural method of nursing a calf with its mother, you will recall that a cow produces milk for her calf throughout the day, drop by drop. The cow's maximum daily milk production also becomes her calf's maximum daily milk intake – *the calf cannot consume more than its mother produces in a single day.*

***ID-TEK is based on this same principle.***

ID-TEK delivers customized, automatic feeding with programmable milk quantities, quality and feeding frequency for up to 25 calves per feeder.



## ID-TEK

Program & control maximum milk intake for individual calves.

Customize milk allowances & supplements based on a calf's health, condition & nutritional needs

By allowing you to create an artificial “mother” for each calf, you can program and control the maximum milk intake for each calf.

You can also customize milk allowances based on a calf's health, condition and nutritional needs, as well as gradually and automatically wean the calf when it reaches the appropriate weight.



## ID-TEK

### **Customized feeding for up to 25 calves.**

- Milk concentration
- Milk quantity
- Number of meals per day

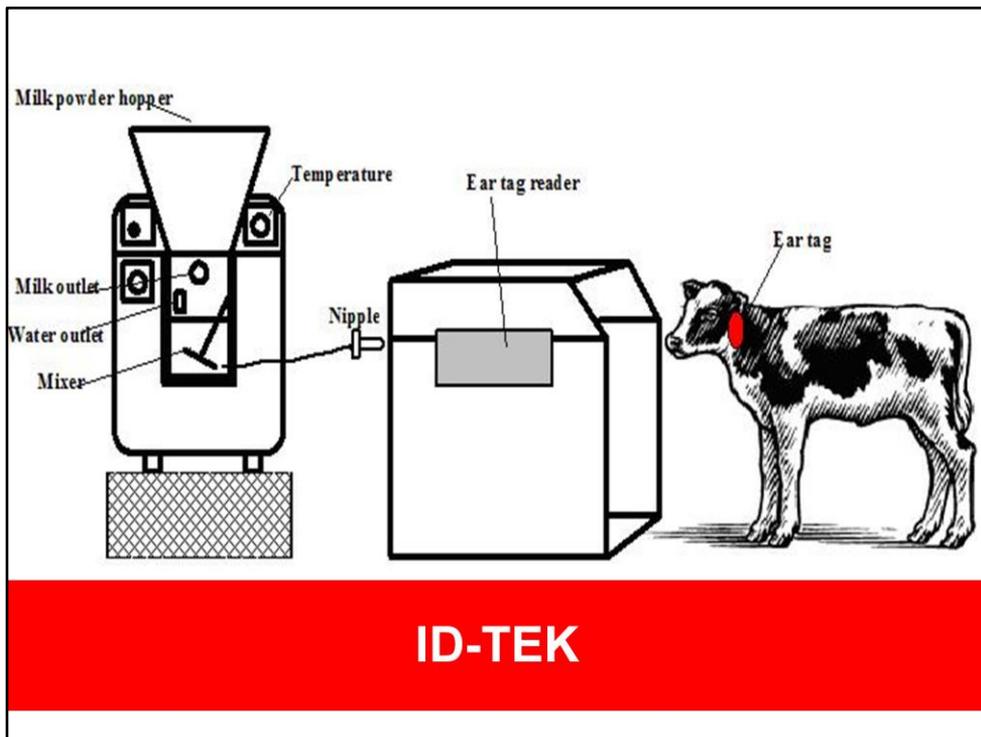
The ID-TEK allows you to program the following individually for up to 25 calves:

Milk concentration

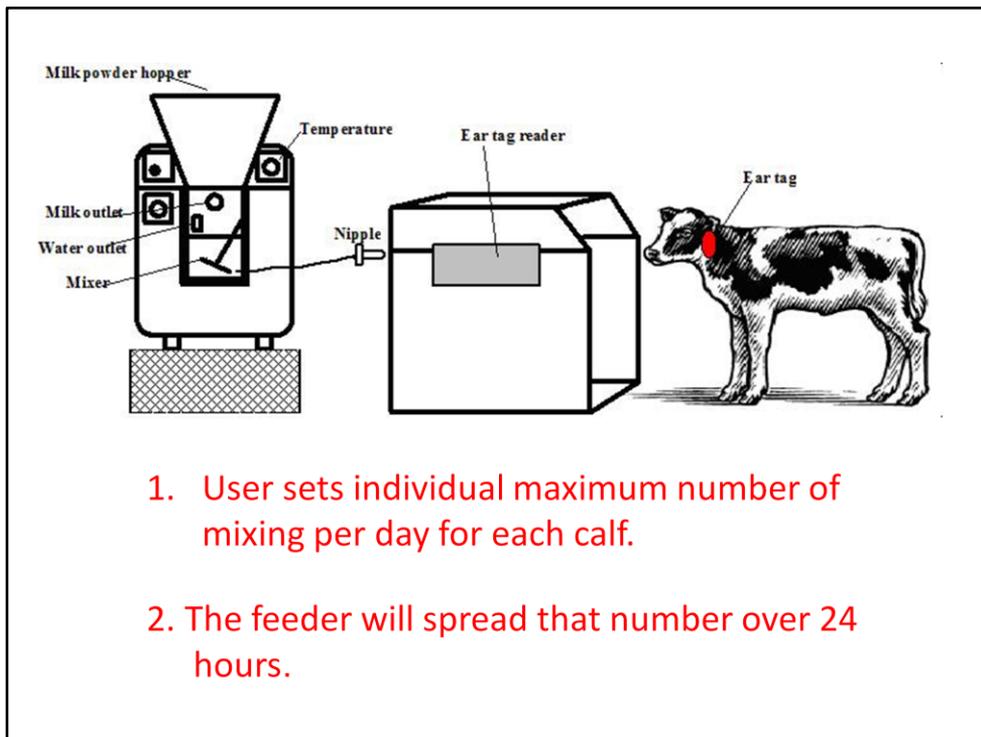
Milk quantity

Milk quality

Number of meal per day



The ID-TEK automatically recognizes and manages individual feedings for each calf. Here's how it works:



In the same way a cow's milk production limits her calf's maximum daily intake, users can program the feeder to establish a maximum intake for each individual calf, each day. Think of this as creating an artificial 'mother' for each calf.

This maximum milk intake is called the number of mixing per day or credit.

This number is spread over 24 hour. By setting the size of the mixing you can increase or decrease the frequency of feeding

For Example: if you want to feed 2 gallons per day with a 1 pint mixing size  
2 gallon is 8 pint so the calf can drink one pint every 3 hours



## HOW ID-TEK WORKS

3. Each calf wears scannable ear tag.
4. Feeder recognizes calf when it approaches feeder & mixes pre-set milk type, quality & quantity.
5. Calf is allowed to feed only when it has Credit.

3. Each calf wears a RFID tag that can be read by the feeder.

4. When the calf goes into the feeding station, the feeder mixes a small batch of milk specified for that individual calf.

5. the calf is allowed to drink only if he has credit.

If the calf has already drink its credit, the ID-TEK will not dispense milk to this animal.

If the calf did not drink its allowed mixing, 1 mixing come to its credit, so if the calf skip one time period I will get it on the next time he come to nurse.

The size of the mix can be adjustable, therefore increasing or decreasing the frequency of feeding.



## ADDITIONAL FEATURES

Keeps track of each calf consumption of today and yesterday.

**Starter Helper** helps accustom new calves to the system.

**Auto Wean** allows gradual decrease of milk intake according to pre-set pattern.

In addition to allowing you to easily calibrate the machine to prepare and dispense individualized mixes to each calf, ID-TEK keeps track of the consumption of the calf of today and yesterday.

This gives you valuable data that can be used to gain insight into the condition, nutrition, and health status of each calf. (If a calf is not coming to drink at the feeder or if it is not consuming all its Credit, this information could signal that a calf is sick ).

ID-TEK also has a Starter Helper to help you start and accustom a new calf to the new feeding system,  
And also ,has a Auto Wean that allows you to wean calves by gradually decreasing its quantity of milk per day.



From a business standpoint, ID-TEK offers several advantages over other automatic feeders.

## CUSTOMIZABLE

### **Specify & adapt milk quality, quantity & feeding frequency for up to 25 individual calves**

- Helps ensure each calf receives nutrition it needs to quickly reach weaning weight.
- Allows inclusion of small quantities of supplemental liquid products in with feed using auxiliary pump.



– the ability to specify and adapt customized feed quality, quantity and frequency for individual calves

helps to ensure that each calf has access to the nutrition it needs to quickly reach weaning weight.

You can also include small quantities of other liquid products in with the feed (such as medicine) using an auxiliary pump.

## VALUABLE MANAGEMENT TOOL

### Calculates & tracks feed consumption & frequency for all animals

- Changes in consumption provides warning tool for illness in individual or group.
- Provides insight into effectiveness of feeding plan/strategy.



- ID-TEK calculates and tracks all the feed consumption and frequency of all animals. Calves drinking habits can be easily accessed and are displayed on the controller screen. The screen will show first the calves that did not drink all their credits .

## REDUCES LABOR & TIME DEMAND

- Limited daily labor requirement
  - Needs just 5 minutes per day for cleaning & maintenance
  - Reduces labor & time demands
  - Ensures consistency of feed patterns, quantities & schedules



### Id Tek feeder Reduces Labor

The cleaning of the feeder require only 5 minute a day.

The most important is to clean the mixing bowl

There is a rinse switch when it is on, only warm water will fill up the mixing bowl for easy cleaning with a sponge or brush

## EASY TO USE

Simple user interface & easy menu-driven programming.

Does not require specialized labor or extensive training.



They are Easy to Use – ID-TEK offers a simple user interface that does not require time-intensive or specialized training to operate.

## COST SAVINGS

Reduces labor costs

- Fewer people required to feed more calves
- Less time required for each person

Reduces waste – only mixes exact quantities of milk as specified.

Start-up costs significantly less than other systems.



– As well as reducing demands on time and labor, the ID-TEK feeder is highly cost-competitive compared to other automatic feeders.

## REVENUE GENERATOR

Ultimately creates **HIGHER VALUE ANIMALS** with better muscular development, form & meat quality as adults.



– Capitalizing on natural feeding methods and a low-stress feeding environment helps create higher value animals with better muscular development, form, and will reach its maximum potential as an adult



## LESSONS & BEST PRACTICES

Now that we've taken a look at Biotic's automatic feeder systems, let close by sharing some of the lessons and best practices we have learned about using automatic feeders.



## 1. BIOTIC FEEDERS BENEFIT CALVES

### **Automatic feeders benefit calves.**

Automatic feeders mimic the way calves naturally nurse.

This approach respects and supports their natural instincts, digestion, and development.



**Supports natural feeding instinct:** suckling vs. drinking fosters critical physiological development.

**Freedom of movement** promotes proper muscular development, form and meat quality.

**Low stress, non-competitive feeding** environments help ensure happier, stronger, healthier calves that perform better as adults.

automatic feeders support critical physical and physiological development by allowing calves to suckle frequently instead of drinking. This closely aligns with the way calves naturally nurse and helps ensure proper development of digestive processes vital to long-term viability and health.

Calves that must be boxed or tied to be fed do not have the opportunity for proper muscular development and are subject to the unnecessary stress of physical confinement. Automatic feeders allow calves to move about freely in between feeding without the need for confinement.

automatic feeders help ensure the feed environment is low-stress and non-competitive, in turn promoting healthier, happier, stronger calves that perform better as adults.



## **2. FEEDING IN SMALL GROUPS IS BETTER**

One of the practices we have learned in testing and in the field is that small group feeding is better.

It is much easier to manage a small group of calves around several feeders (15-20 calves per feeding station) than a large group around a single feeder.



**Increases** calves' access to feeder & opportunity to feed on instinct/need (further reinforces more natural feeding approach).

**Limits stress & competition** among calves for food. (Happier, healthier calves = better performing adults).

**Facilitates better tracking** of individual calf performance (calves easier to monitor in smaller groups).

There are a couple of important advantages to feeding calves in smaller groups of 15-20 rather than in one large group ( having several feeders rather than one big feeder):

**First, this increases each calf's opportunity to feed on instinct at the frequency it needs.** This is one more way of ensuring that the feeding environment is as close as possible to the way a calf might naturally nurse.

**Feeding in small groups also further limits stress and competition among calves for food.** When calves are stressed, they are less able to assimilate their meals and become more vulnerable to illness and disease. This helps to ensure a low-stress feeding environment that in turn promotes healthier, happier, stronger calves that perform better as adults.

**Facilitates monitoring of individual calf health and behavior.** Feeding in smaller groups makes it easier and more efficient to oversee the health and well-being of each calf, and to spot calves that are under-performing or sick.



### **3. BIOTIC FEEDERS BENEFIT BUSINESS**

Biotic Feeders also benefit business.

As we have discussed, there are important limitations to nursing calves with mothers and to bottle or bucket feeding. These approaches can also be labor and time intensive, and costly.



**SAVES MONEY** by reducing labor costs (requires 5 minutes/day for cleaning & maintenance).

**REDUCES NEED FOR HIGHLY TRAINED STAFF** (very simple & easy to use)

**INCREASES EFFICIENCY** of operations & management (centrally manage multiple feed schedules & plans for large groups; starter & auto wean functions save additional time).

**PROVIDES VALUABLE MANAGEMENT TOOL** (data & reporting offers useful insight for assessing success of feeding strategies, calf health & development).

**Id-Tek feeders:**

Save money by reducing labor costs

Eliminate the need for highly trained or specialized staff

Provide a valuable management tool



## **4. NOTHING REPLACES HUMAN INVOLVEMENT**

But Nothing can replace human involvement.

Even tho IDTEK feeders save a lot of time, it is very important to spend time monitoring each calf to ensure their healthy development and well-being.

Since we all know that prevention is better than medication, some of the time you save using an ID-TEK feeder can be used to ensure that you are keeping an eye on each calf, catching any problem or illness before they become troublesome.



**QUESTIONS?**