SarTec®

SarTec's Multi-Input Computerized Grain Processing System Insures Steady Profits

Stop the Controllable Factors from Eating Your Profits Today!

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SarTec's State-of-the-Art, Multi-Input Computerized Grain Processing System Enables Industry-Leading Grain Moisture and Inventory Management Control.

Precise on-line measurement and tracking of grain flow rate, dry moisture content, water application rate and grain conditioner application rate insure a consistent, high quality conditioned grain ration.

Stop the Controllable Factors from Eating Your Profits Today!

There are many factors chewing up a feedlot's profits. Some factors can be controlled; some can't. Cattle prices, grain prices, cattle supply and weather are just a few of the uncontrollable factors. These factors can seriously affect your profitability. There are some other factors that seriously affect profitability that are not so obvious but that we can control. Two of the most significant controllable factors are ***as-fed grain moisture content*** and ***grain inventory management***.

Uncontrollable Profit Factors

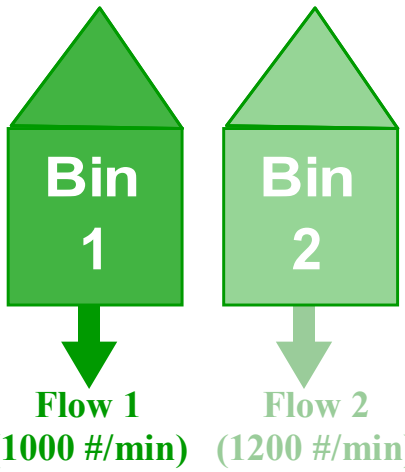
- Cattle Prices
- Grain Prices
- Cattle Supply
- Weather

Controllable Profit Factors

- As-Fed Grain Moisture Content
- Grain Inventory Management

Poorly Controlled As-Fed Grain Moisture Content Hurts Cattle Performance.

Most existing grain processing systems do not control as-fed grain moisture content very well. As a result, nutrient ratios change from feeding to feeding. Inconsistent nutrient ratios lead to variable total ration energy content and variable animal performance. Variations close to 30% are commonplace with manual processing equipment and even many of the existing computerized processing systems. These systems typically do not (or do not accurately) monitor the grain flow rate. Variations in grain flow rate are due to variations in auger speed, auger wear, and gate discharge rate (resulting in up to 20% variation in as-fed moisture content). Additionally, grain density or bushel weight changes can significantly impact grain flow rate (resulting in up to 10% variation in as-fed moisture content). Bushel weight changes are caused by changes in grain quality, variations in screening conditions and contamination by foreign materials or mixed grains.

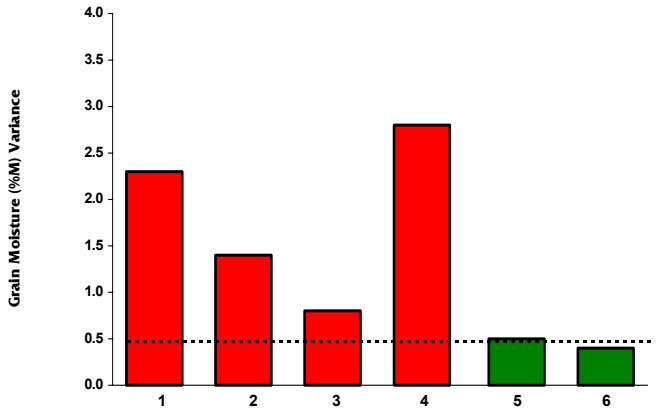


Grain Flow Variation Will *Cost You* in Several Ways

- **Over application of your grain conditioner**
- **"Shrink" or inventory loss**
- **Animal performance not fully optimized**
- **Variation in total ration energy**

Tight Grain Inventory Management Helps the Bottom Line.
The SarTec system not only measures the grain moisture content but also weighs the grain as it is processed. Accurate measurement of grain flow rate is essential to good grain inventory management. Besides insuring the proper application of grain conditioner, accurate grain inventory management protects a feedlot against excessive shrink (or grain inventory) loss. We have found that most people desire a variation in as-fed grain moisture content of less than +/- 1.0%. With the SarTec system we have documented a consistency of +/- 0.5%. Our customers report that the ability to accurately bill out processed grain inventories within 0.5% can mean up to a 50% difference in a feedlot's operating margin.

Variations in Grain Moisture for Systems at High and Reduced Processing Flow Rates



Non-SarTec Equipment and Grain Conditioner*

SarTec Equipment and SarTemp Conditioner*

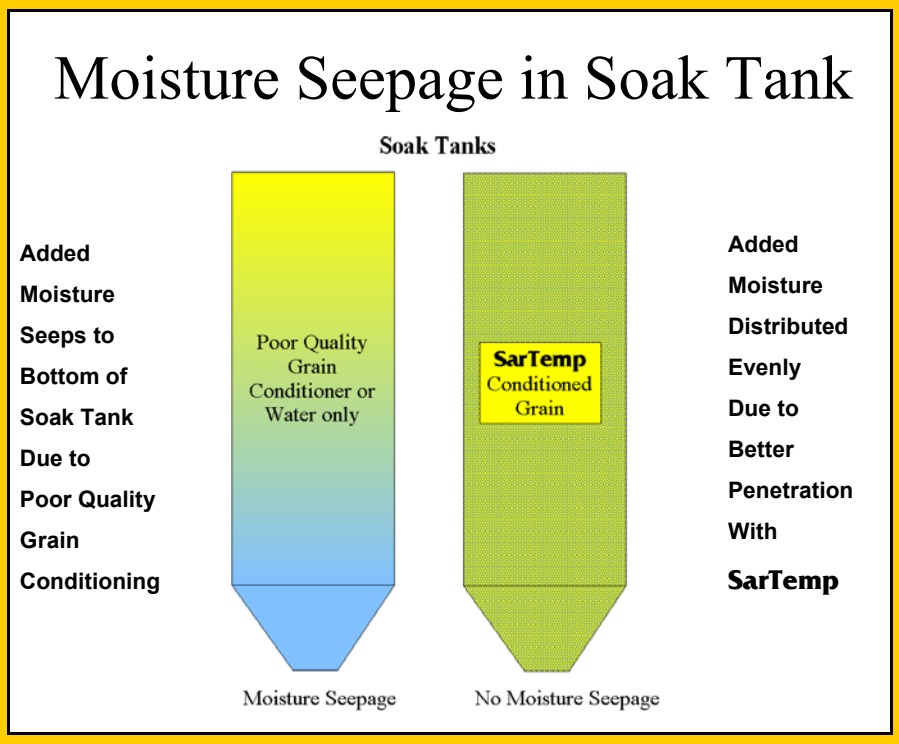
* Moisture analysis performed by independent laboratories. Grain samples obtained from 6 different commercial feedlots.

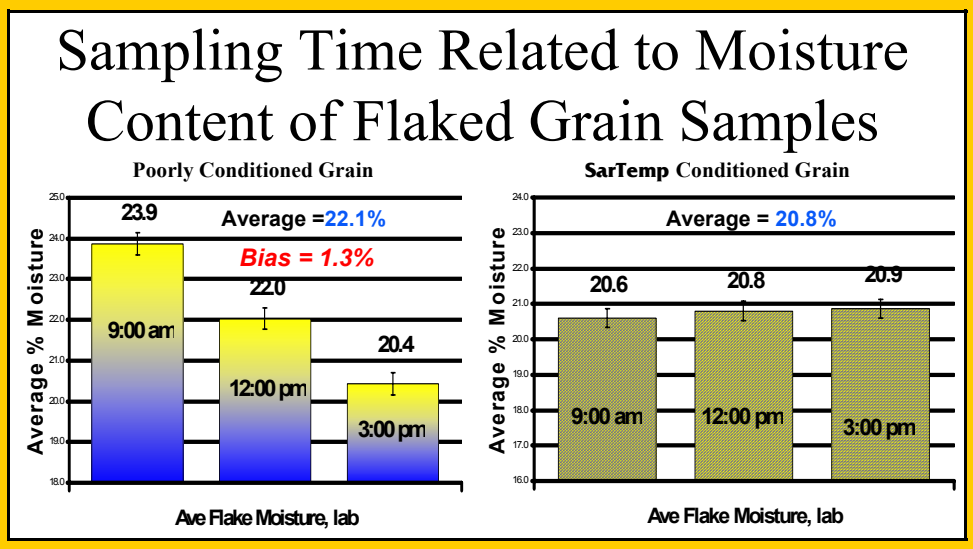
Under-Conditioned Grain Can Cost the Feedlot Big Money.
SarTec's multi-input computerized grain processing system is the only system on the market that is able to adjust for grain flow rate variation and thus consistently maintain a feedlot's as-fed grain moisture content. The difference between a 0.5% variation using SarTec's multi-input system and a 2.0% variation with a competitor's system is 1.5%. On $100 per ton grain a 1.5% difference in shrink amounts to $300 per day for a feed yard processing 200 tons per day. On a yearly basis this small deviation adds up to a total loss of $109,500!

The *Solution* to Grain Flow Variation

- **Average variation in moisture for non-weighing conditioning systems = 2.0%.**
- **Processing 200 tons of grain daily with a 2% error in moisture added can cost a feedlot over $100,000.00 annually at today's grain prices!**
- **SarTec's patented, multi-input computerized grain processing system can easily handle changes in grain flow.**
- **SarTec's state-of-the-art grain processing system adds the correct amount of water and conditioner, regardless of incoming grain flow. This means that with SarTec, your final grain moisture will be on target.**

SarTec's Grain Conditioner Eliminates Free Water Seepage. Another major reason to use a good grain conditioner is the problem of ***free water seepage***. As water and grain are mixed there is a natural tendency for the water to "run off" the grain. A surfactant lowers the surface tension of the water and in the case of SarTemp also changes the bulk properties of the water to allow for faster penetration into the hydrophobic grain. Faster water penetration means a more uniform grain tank moisture and less free water seepage. The effect of SarTemp makes measuring average as-fed grain moisture content easier and more reliable (less over-estimation due to sampling error). Assuming a grain cost of $100 per ton, a 1.5% overestimation of grain moisture content costs a feedlot processing 200 tons of grain per day over $100,000 per year. Accurate measurement of as-fed grain moisture content will also lead to a more consistent ration energy to the animal.





Free Water Seepage Will Bias Moisture Sampling Results. A case study was conducted at a commercial feedlot by taking grain samples from the bottom of the flaking rolls at 9:00 am, 12:00 pm and 3:00 pm. Replicate samples were taken from three different flakers. One day the grain was treated with no conditioner present in the water. Another day SarTemp was used. The incoming grain moisture content was similar (~12.2%) on both days. The amount of water added per amount of grain processed was virtually the same on both days, meaning the actual final moisture content was the same. Sampling results for both cases are shown in the graphs above. It appears that the final moisture content for each of the non-conditioned grain samples was strongly dependent on the time of flaking. This high-to-low pattern suggests the presence of free water seepage. On the other hand, the SarTemp conditioned grain samples were very consistent over time indicating much better homogeneity in the soak tank. In the case with no conditioner present a measurement bias of 1.3% occurred, resulting in excessive shrink loss. This level of moisture content over-estimation will cost a feedlot $80,000 annually.

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