



Factors Contributing to Variation in Milk Replacer Price

Introduction

Within any class of goods or services, price differences between products that are perceived to be similar are inevitable. The same principle applies to the milk replacer market. It is not uncommon to find price differences of several dollars per bag among products whose tags seem very similar. Making sense of price differences can be a challenge – there are some things discernable from a feed tag, while others aren't. The objectives of this article are to highlight the basics of milk replacer formulation and identify possible reasons why price differences may exist.

Protein Source

- Alternative proteins such as soy protein concentrate, soy isolate, protein modified soy flour, soy flour, and wheat gluten typically do not support equivalent growth compared with all-milk or plasma-based milk replacers, but these proteins often confer a significant price advantage.
- Milk replacers containing egg protein are often lower cost as well, and calf performance has been shown to be variable and very sensitive to egg protein inclusion rate.
- Animal plasma-based milk replacers may be slightly lower cost, but performance will likely be as good or better compared with an all-milk protein milk replacer.

How do I find which protein sources are being used? *Percent fiber is not always indicative to protein source. Protein sources are listed on the feed tag in the Ingredients section so careful examination will reveal their presence.*

Protein Quality

- Whey proteins and skim milk proteins are the major sources of dietary protein in all-milk milk replacers. However, quality of dairy protein sources can vary. Quality measurements include degree of heat damage, chemical composition, flavor, physical appearance, and bacterial count. Ingredient prices are often significantly discounted if one or more of the aforementioned properties are below desired specification.

How do I determine protein quality? *There isn't a way to determine from looking at the feed tag. However, low protein quality may impact calf performance and/or ingredient solubility.*

Fat Source & Physical Form

- Whereas protein sources on milk replacer tags are fairly descriptive, fat source is more ambiguous. Fat is typically listed as either animal fat, vegetable fat, or animal and vegetable fat. Common animal fat sources are lard and tallow. Vegetable fat sources are numerous, differ significantly in fatty acid profile, and depending on the market can be quite variable in price.
- Fat can be purchased in liquid oil form or as a dry, protein-encapsulated form. Physical form of fat is important because mixing characteristics and mixing consistency may be affected. An acceptable fat source will stay suspended in a solution and not stick to the sides of the containers, thus resulting in consistent and intended amounts of fat being consumed by the calves.

How do I find what fat source is being used? *Specific fat sources and physical form are not listed on tags. A milk replacer supplier should be able to provide this information.*

Protein and Fat Concentration

- Protein and fat concentrations are major cost drivers for the price of a bag of milk replacer. It is important that nutrient concentration is considered when comparing price.

How do I find the protein and fat concentration? *Both must be listed in the Guaranteed Analysis on the feed tag.*

Medications and Additives

- Medications certainly add cost, some more than others. For example, neomycin & oxytetracycline (1600 g/ton of each) adds about \$3.50/bag, decoquinatate (45.4 g/ton) adds about \$1.50/bag, and lasalocid adds about \$0.25/bag.

How do I know what and how much medication is in the feed? *Both must be listed on the feed tag.*

- Additives such as mannanoligosaccharide (MOS), direct-fed microbials (DFM), essential oils, organic trace minerals, acidifiers, and gelling agents all add variable amounts of cost.

How do I know which and how much of an additive is in the feed? *The presence of an additive will be discernable from the Ingredients section of the tag. However, inclusion rate (with the exception of DFMs) is not noted on a tag. A milk replacer supplier should be able to provide this information upon request.*