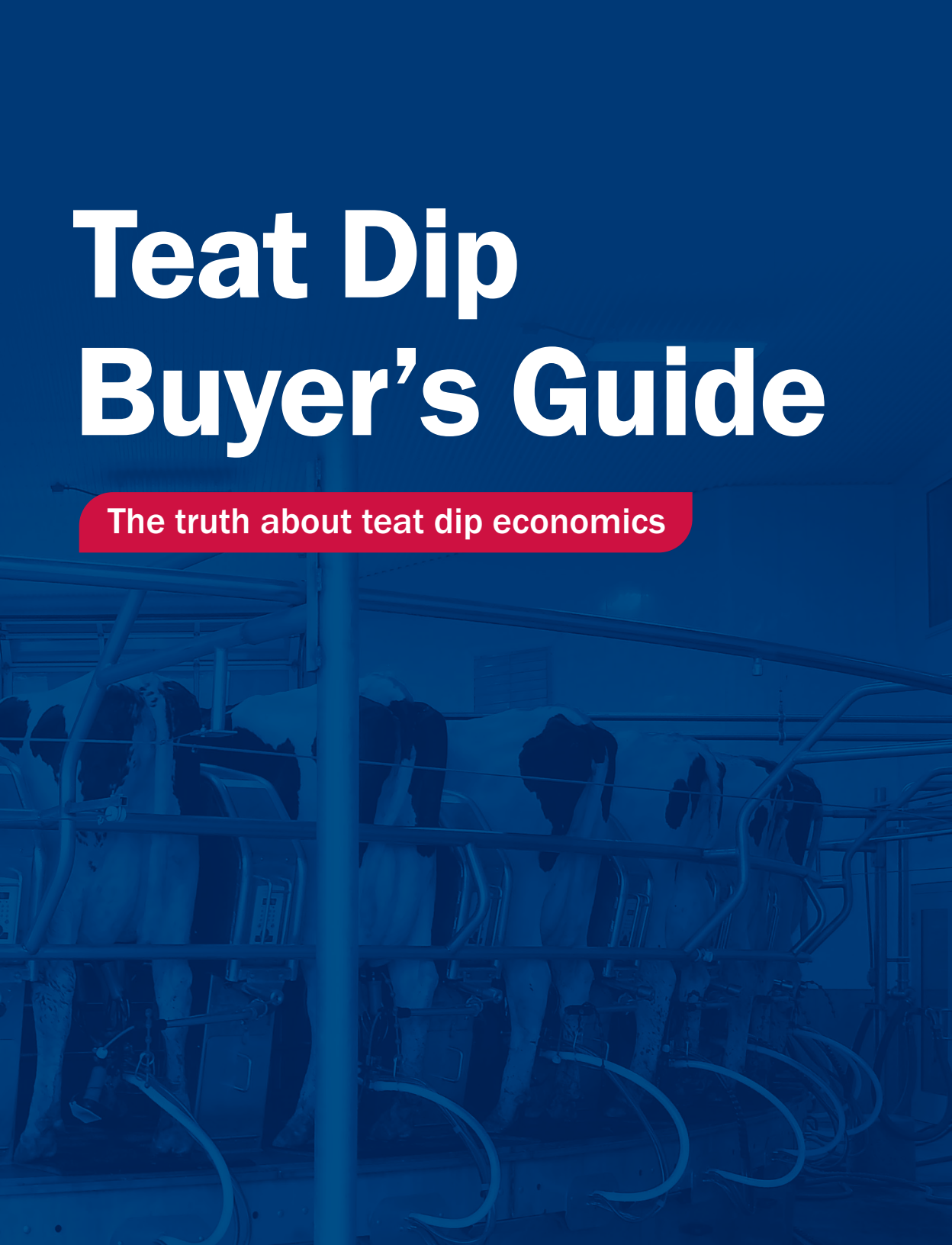
Teat Dip Buyer's Guide

The truth about teat dip economics



Introduction

Quality milk is essential to your dairy operation. The teat dip you choose affects not only udder health but also your bottom line.

We created this guide to help you sort through the myriad of teat dip options available to you today. We want you to make an **informed decision**, know the right questions to ask and what to watch out for. The goal of this guide is to protect you from products that have sparkling sales pitches but have no data and subpar results.

Many **new teat dip formulations** have appeared over the past few years. The low-price tag "deal" can be tempting, but many of these products make claims without the data to back them up. Unfortunately, not all products are created equally, and neither is the support companies provide.

Questions for dairy producers to ask before purchasing teat dip

1 Who manufactures your product?

The manufacturing process should start with a strong formulation with high-quality inputs. From there, the most reliable manufacturers follow Good Manufacturing Practices and perform quality control checks throughout the process.

"As a scientist formulating and testing udder care products for over 20 years, it is very evident formulation matters. Knowledge, testing, and adherence to Good Manufacturing Practice principles are essential to ensure the effectiveness and quality of a product."

DR. JOE MORELLI
CORPORATE SCIENTIST
ECOLAB

2 How many times has your product been reformulated?

Some in the industry regularly "re-formulate" their products to mimic the tried and true, research-proven products. Reformulations are known to be tested on-farm to see if they work without transparency or data support given to the dairies using it. Experimenting and reformulating on the fly is typically not in the best interest of anyone except the company trying to sell it, and can lead to issues for dairy producers.

A more reliable testing approach is following National Mastitis Council (NMC) guidelines that provide detailed guidance for conducting research studies on the efficacy of specific teat dip products. Once products go through this testing, reformulations are rarely needed.

3 Why is your price so much less than other offerings in the marketplace?

There is a reason that companies offer products at much lower prices in any industry and cutting corners on quality is almost always the reason. A cheaper price on a low-value teat dip product will usually cost more in expenses later, quickly erasing the "deal" you think you're getting. The formulation of any teat dip has many ingredient choices, some of which do not show up on the label. The decisions made by the chemist creating the formulation make a big difference in cost, which can make a big difference in product performance. The old saying, "You get what you pay for" is true for teat dips.

4 What support is available for this product?

Unfortunately, there is a wide range of support given for the variety of teat dip products out there. A low price typically can lead to low service levels.

The best teat dip support comes from dedicated milk quality professionals who understand your dairy before the product is ever used and continues throughout product use. Support can include milk quality audits, technical service visits for further analysis or bilingual milker trainings. Also, consider how long your provider has been working with the technology used in their products. For example, many companies are adding Chlorine Dioxide technology to their teat dips. Before jumping in, ask your provider how long their company has been manufacturing Chlorine Dioxide.

5 What is the effectiveness of using the product year-round and meeting seasonal needs?

Each season impacts teats differently. For example, a teat dip should be more conditioning in the winter since the weather is more drying to the teat. Alternatively, you may need a dip that dries faster and acts as a barrier in warmer, more humid conditions. Therefore, make sure your teat dip choice is meeting the need for each season.

Ask your teat dip provider how their products address seasonal and situational needs. How do those formulations differ to address those needs? Is your provider analyzing what is happening in the parlor and letting the cows' teats show which products are needed?

Answers you should insist on

1 What is the skin conditioning package in your formulation?

Dry and cracked teat skin has an often undetected impact on milk quality by increasing the risk of new, clinical mastitis. Various skin conditioning ingredients perform a slightly different task when it comes to skin health, allowing them to work together to provide healthy teat skin. Low-cost teat dip providers typically do not understand or have this needed level of protection, despite claims.

Complete skin conditioning packages include more than emollients and also contain occlusives, synthetic humectants, natural humectants and exfoliants. Formulas that include a balanced skin conditioning package are most successful in maintaining healthy teat skin.

"What is the best teat dip?" This critical question is important to ask and complicated to answer. My experiences have refined my answer to three fundamental details. What is the germicide(s), how are they formulated and what are the skin-conditioning ingredients. Labeling laws for udder care products allow limited information on the barrels. You must ask before you buy, "What is the detailed formulation for this product?" No details, no purchase!

Iodine and Chlorine Dioxide are the two most reliable and robust germicides. How they are formulated into the dip creates the biggest differences in performance. "You get what you pay for" is often an indicator of the quality of the formulation.

Skin conditioners are the most expensive ingredients. New research suggests smaller amounts of more than 1 ingredient produce healthier skin versus a lot of a single ingredient. An example is a small amount of an occlusive like lanolin will complement and reduce the quantity needed of a typical humectant found in a teat dip like glycerin."

ROGER S. THOMSON
DVM, MQ-IQ CONSULTING

2 What kind of pumps are needed for your product, and how do you support these pumps to ensure they are working properly on an ongoing basis?

Some companies offering low-cost acidified sodium chlorite teat dips are providing mixing systems that are extremely primitive. The mixing of a teat dip on the farm needs precision technology along with constant monitoring to guarantee a consistent formulation being delivered to your cow's teats.

Different pumps are required for every situation to meet the needs of your dairy. Is monitoring of the pumps, by testing the product to ensure accuracy, at the time of install and throughout the time you are using the product taking place? Does your supplier share pump performance information with you so you understand what is being done to assure proper mixing and flow?

3 Has this product been tested through an NMC protocol process and is it registered?

The NMC Protocol process is the gold standard for evaluating teat dip efficacy. Dairy producers can be confident using registered products will help prevent mastitis infections in their herd.

Not all products have gone through this process and alternatively are tested on farms on the fly. NMC-registered products give you peace of mind over "me too" products that claim the same formulation and standards that have not been thoroughly tested. Proven quality carries much more weight than a sales claim.

4 Is your pre-dip highly effective against environmental mastitis when using alternative bedding materials?

All teat dip germicides, including Chlorine Dioxide, Hydrogen Peroxide, Chlorine, Iodine and Chlorohexidine kill mechanisms are affected (quenched) by milk, manure and other organic materials. This increases the length of time to achieve a 5 log kill, decreasing the effectiveness and increasing the risk of new cases of mastitis.

Chlorine Dioxide performs best for alternative bedding materials and excels in challenging conditions. It is easy for products to perform when conditions are ideal, however, Chlorine Dioxide sets itself apart in tough conditions, and can be a massive difference in the results you get.

Do's & Don'ts

Do's

1. **Always** understand exactly what germicide you are buying and the pros and cons.
2. **Always** understand what ingredients make up the skin conditioning package.
3. **Always** buy from a reputable company with White Papers on the product.
4. **Always** get written research from the manufacturer for log kill under organic load.
5. **Always** buy products that follow NMC standards.
6. **Always** understand the exfoliation process and why it helps you.
7. **Always** measure success and understand what it is going to take for the teat dip to provide an economical return to your dairy. (Track new cases of clinical mastitis, not bulk tank SCC)
8. **Always** buy from someone with a proven track record of success.
9. **Always** understand what mastitis organisms you are fighting before switching teat dips.

Don’ts

1. **Never** buy a product based solely on an extremely low price.
2. **Never** buy from someone who hasn’t evaluated your herd’s needs.
3. **Never** buy a product that is drop shipped from out of state without local support.
4. **Never** buy from companies that can’t answer your questions with written documentation.
5. **Never** buy what you don’t know.
6. **Never** buy a product not thoroughly tested or one that is tested on your dairy.
7. **Never** buy from someone who does not bring additional value to your farm, especially for milk quality.
8. **Never** change a teat dip until you do a bulk tank culture so you know what organisms you are fighting.

Glossary

Cost of Mastitis
Industry numbers estimate each case of mastitis will cost the dairy $444 on average. This number includes items such as discarded milk, lost milk, death loss, reproductive effects, treatment costs, culling and labor costs.

5 Log Kill
5 log means 99.999% kill and is how teat dip effectiveness is measured. For example, if you start with 1,000,000 organisms and get 5 log kill, you will have 10 organisms left, greatly reducing your risk of a new case of mastitis.

Chlorine Dioxide (Acidified Sodium Chlorite)
Chlorine Dioxide works better than Iodine when organic materials such as milk, manure or bedding materials are present and increase pH on the skin. Iodine is negatively affected by pH increases and loses killing ability when organic material is present. Additionally, Chlorine Dioxide is an incredibly effective broad-spectrum, anti-inflammatory, bactericidal, fungicidal and virucidal agent. Chlorine Dioxide is the primary germicide in ABS Udder Care products.

Titrating Product
The process to determine product effectiveness and ensure pumps are working properly.

Skin Conditioners
Synthetic Humectant
Acts like a water magnet to rehydrate the skin. Attracts atmospheric moisture at a humidity of ≥70%. Also, pulls moisture from deep within the skin. Examples are Glycerine, Propylene Glycol, Sorbitol and Urea.

Natural Humectant
Attracts water like synthetic humectants and adds nutrients to improve the skin's ability to rehydrate itself. Examples are Alpha Hydroxy Acids (Lactic Acid), Aloe and Honey.

Emollient
Fills spaces between skin flakes with droplets of oil and decreases skin roughness. Examples are Lanolin, Mineral Oil and Fatty Acids.

Occlusive
Blocks water loss from the skin and creates a waxy barrier on the skin surface. Examples are Lanolin and Mineral Oil.

Exfoliant
Softens the outer layer of skin. Examples are Alpha Hydroxy Acids (Lactic Acid).

Contact Time
The amount of time that a teat dip is on the cow's teat. Many products need 30-45 seconds of contact time to obtain 5 log kill. The ABS Valiant line of products achieves 5 log kill in 15 seconds of contact time.

Chemical Exfoliation
The process of how Lactic Acid softens and loosens the outer layer of skin on the teat.

Physical Exfoliation
The process of physically removing dead skin (when it is ready to come off) from the teat. Typically happens when removing teat dip from the teat with a towel.

Bulk Tank Culture/Individual Cow Culture
The process of taking a sample from the cow or a sample from the bulk tank to learn what individual organisms you are fighting. This allows producers to determine the best treatment plan.

AOAC Testing
AOAC stands for Association of Analytical Chemists. The testing is done with a 10% milk challenge to simulate what is presented on a cow's teat skin to find out what organisms the product is effective against.

Pre-Dip Purpose
Your pre-dip needs to be designed to clean the teat quickly and safely (no harmful residue) and kill environmental pathogens so you have a clean, disinfected teat before the unit is attached. A well-formulated pre-dip is the best way to lower the risk of new cases of environmental mastitis.

Post-Dip Purpose
You need your post-dip to kill bacteria and rinse (dilute) the milk film left on the teat after the milking unit is removed. Your post-dip needs to be effective against contagious pathogens that remain in the milk film from previous cows while the teat end is naturally closing to create the ultimate protection for the cow. Your post-dip also needs to contain an effective combination of skin conditioners and exfoliants to maximize skin health. Not all post-dips can do this!

National Mastitis Council (NMC)
The National Mastitis Council (NMC) has existed for over 50 years with the mission of reducing mastitis and enhancing milk quality. The organization's website, nmconline.org contains a wealth of resources to answer all types of milk quality questions under the resources tab.

NMC Protocol Testing
The NMC Protocol Testing document, "National Mastitis Council Guidelines: Testing of Teat Disinfectants for Efficacy in Preventing Intramammary Infections," describes in detail their recommendations for conducting research studies on the efficacy of teat dip products. Due to the high costs of the recommended research designs, most new teat dip products have not been tested beyond laboratory formulation goals and lab personnel applying the product to the hairless forearm skin and noting any irritation or discomfort immediately or overnight. "Is the product a thoroughly researched teat dip formulation" should be part of a dairy producer's decision-making process before purchasing.

Linear Alkylbenzene Sulfonic Acid (LAS)/ Dodecyl Benzine Sulfonic Acid (DDBSA)
LAS/DDBSA provides residual protection from drying until the next milking. All ABS Valiant products except Valiant Shield feature LAS/DDBSA as the secondary germicide.

Heptanoic Acid
Accelerates dry time, conditions teats and provides residual germicidal protection up until the next milking, making a true barrier dip. Heptanoic acid is the secondary germicide in Valiant Shield.

How can I learn more?

The economic benefits of good udder health extend beyond quality milk and milk production. At ABS Global, we're dedicated to bringing the most reliable, valuable udder care products to the industry. The Valiant® Quality Milk System sets the standard in innovation for teat dip technology – brought to you with unparalleled service by ABS Representatives and their partners.

As a team, we'll help you find the best product for your operation and troubleshoot should you face any challenges. We understand if you are content with your current teat dip provider, but should something change, we'd love to talk and see if we're a fit for your needs.

To learn more, connect with ABS by visiting
www.absglobal.com/teatdip

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