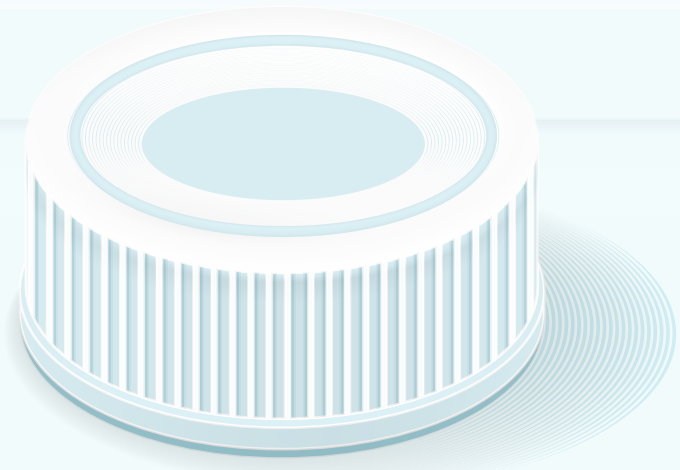
DAIRY ADULTERATION:
THE 3 DANGER POINTS



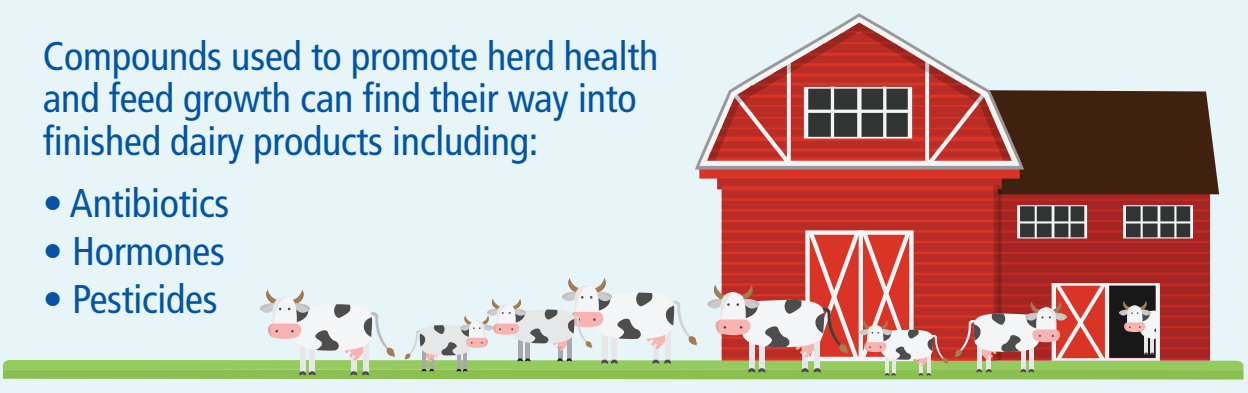
1 Fraud at the Farm

Protein is an important nutritional parameter in dairy, measured by testing for the total nitrogen concentration. Fraudsters can "bulk" milk products with nitrogen-rich compounds such as:

- Urea
- Whey
- Cyanuric acid
- Melamine

Compounds used to promote herd health and feed growth can find their way into finished dairy products including:

- Antibiotics
- Hormones
- Pesticides



2 Fraud In Transport

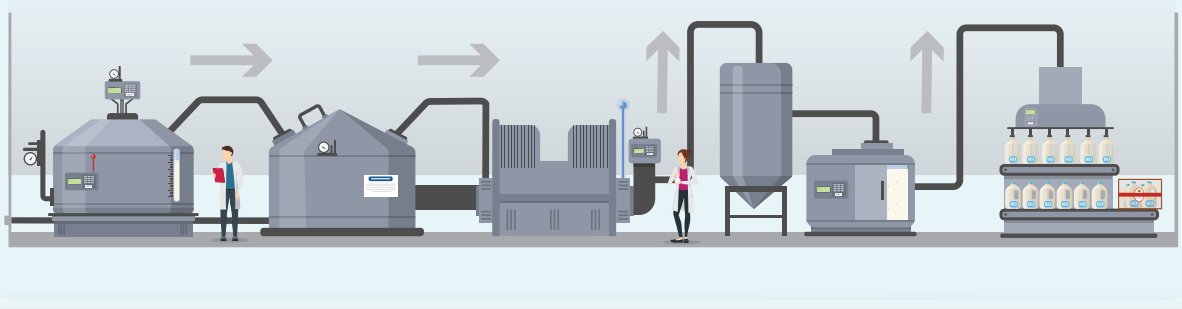
Dairy adulteration is a fraudulent practice that masks quality shortcomings and increase a product's "shelf life," before it even hits the stores. Compounds added to delay spoilage include:

- Hydrogen peroxide
- Formalin
- Boric acid
- Antibiotics

3 Fraud In Production

Milk producers, and food producers who use milk as an ingredient, can adulterate dairy products using similar methods to those at the farming or transport stage, such as dilution and adding protein-enhancing compounds. Additionally, they can use different methods including:

- Mislabeling (for instance, altering expiration dates, or labeling nonpasteurized products as pasteurized)
- Substitution of milk powder for fresh milk
- Blending cow's milk with more expensive goat's or sheep's milk



Dairy products are vital sources of nutrition around the world. But with a complex global supply chain and increased competition, the threat of adulteration for economic gain is real. **Food fraud** – is estimated to cost up to **$15 billion per year to the industry.**

Dairy Adulteration: Did You Know?

The most common adulterant used in milk? *Water*. Potential harm increases when the adulterated water is tainted, or when substances are added to increase density and/or color.

Contamination can occur when farmers don't follow safety procedure properly before milking. This can decrease milk's shelf life whilst increasing potential harm to public health.

In one sub-Saharan African country, of 300 milk samples collected, 95% were adulterated with water and 35% with starch. *None* had total solids according to standard values.

Research in one city in an emerging country found that one-third of all milk samples tested were contaminated with formalin – and this compound persisted even after the milk was pasteurized.

Protect Your Brand and Bottom Line

In today's social media 24-hour news cycle, undiscovered contaminants can create an instantaneous crisis, affecting your company's reputation and financial health.

To prevent your brand from taking a hit, put a comprehensive testing regimen in place, including:

- ☑ NIR for nontargeted screening for known and unknown adulterants
- ☑ GFAAS for lead analysis
- ☑ LC/MS/MS, HPLC to detect pesticides, antibiotics, and growth hormones
- ☑ Rapid screening tests for antibiotics

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