

- Hygienic and safe milk production practices including steps for prevention and control of milk contamination, adulterants, antimicrobial residues, agrochemicals, subclinical mastitis or udder infections

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In order to get high quality milk, certain hygienic practices such as

- Appropriate sanitation and disinfections of the teats,
- Dairy utensils and equipment,
- Properly good quality water
- Mastitis control measures are essentially required at **dairy farm.**

The ultimate quality of dairy products offered to the consumer, is determined by the complete process (from animals production till consumers utilization).

Principles of Clean Milk Production

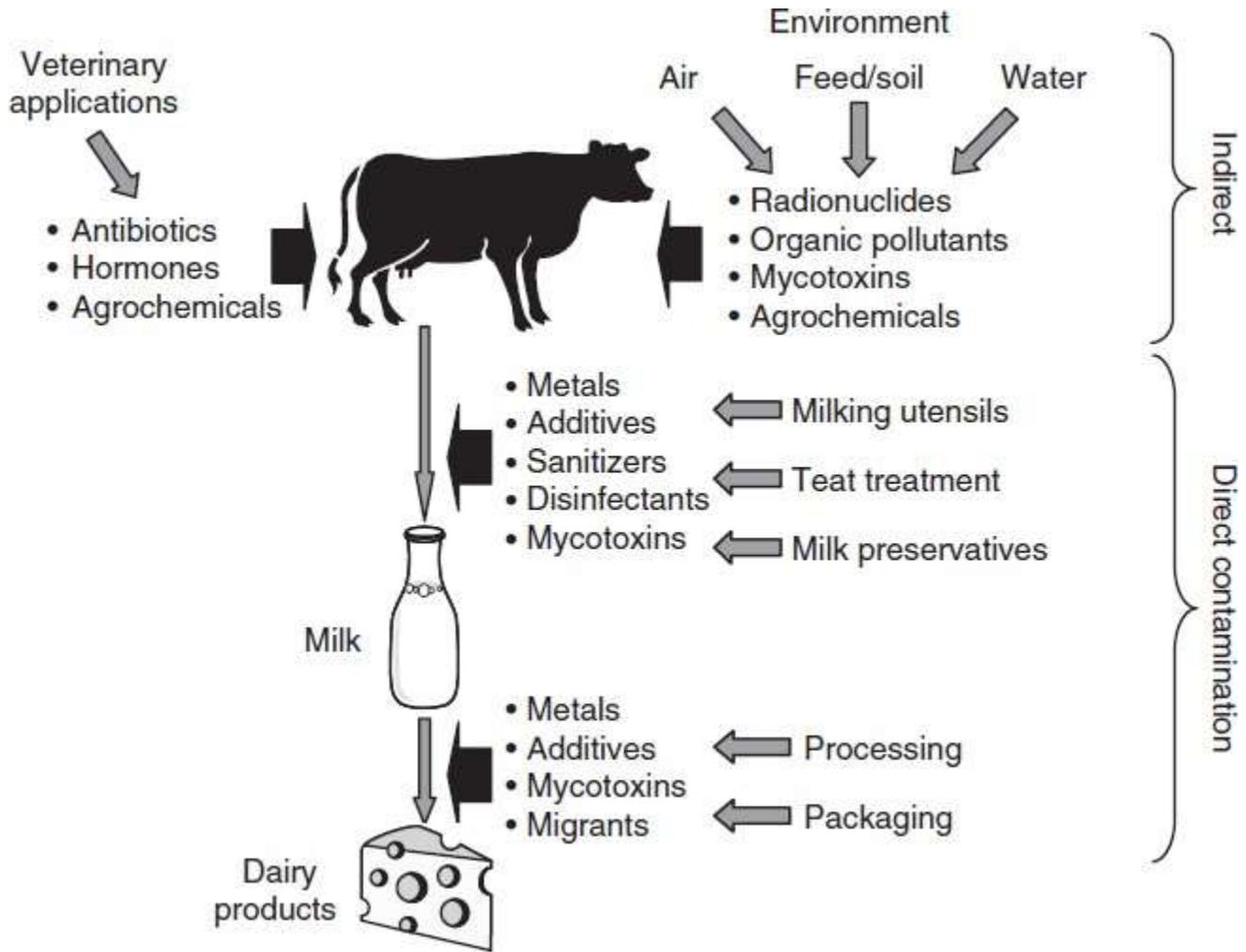
High quality milk should have:

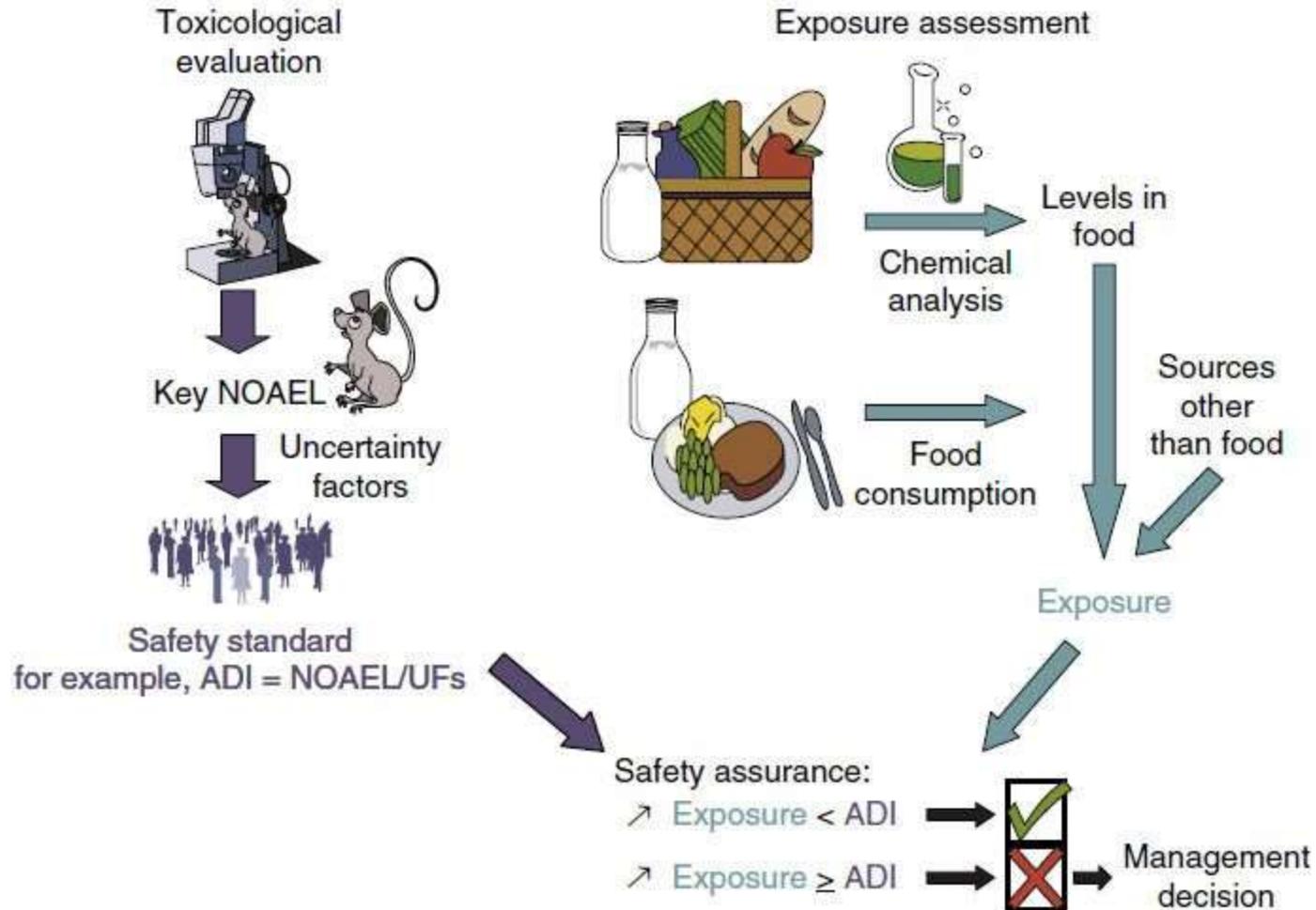
- Longer keeping quality
- Proper nutritive value
- Normal taste, colour, odour
- Free from extraneous matter

- **Animal management-Clean and healthy cows**
- **Animal housing management**
- **Feeding management**
- **Personal hygiene-Disease control Cleanliness**
- **Milking management**
- **Management during collection**
- **Hygiene of milking utensils**
- **Cleaning and sterilisation of milking equipments**
Cleansing=cleaning combined with sterilization
- **Hygiene of milking environment**
- **Straining of Milk**
- **Cooling of Milk**
- **Transportation of Milk**

Steps for prevention and control of milk **contamination, adulterants, antimicrobial residues, agrochemicals, subclinical mastitis or udder infections**

As milk-based products contribute significantly to the overall human diet in many regions of the world, their contamination with potentially toxic chemicals may cause concern.





acceptable daily intake (ADI) value
 no observed adverse effect level (NOAEL)

- **Detection** of such chemicals alone
- Safety assessment
- Interpret occurrence data
- Establishment of limit values ensuring the safety of the products
- To prioritize and focus resources and management measures on key issues.

Adulteration is a legal term meaning that a food product fails to meet the **legal standards**.

One form of **adulteration** is an addition of another substance to a food item in order to increase the **quantity** of the food item in raw form or prepared form, which may result in the **loss of actual quality of food item**.

Contamination and **adulteration** both may involve the presence of a substance that is not intended to be **in** a product. The **difference** is that **contamination** is **unintentional**. **Adulteration**, on the other hand, is generally **economically motivated**.

Mastitis is an inflammation of the udder and is common in dairy herds causing important economic losses. It cannot be eradicated but can be reduced to low levels by good management of dairy cows.

Although bacteria, fungi, yeasts and possibly virus can cause udder infection the main agents are bacteria. The most common pathogens are *Staphylococcus aureus*, *Streptococcus agalactiae*, *Str. dysgalactiae*, *Str. uberis* and *Escherichia coli* though other pathogens can cause occasional herd outbreaks.

Mastitis occurs when the teats of cows are exposed to pathogens which penetrate the teat duct and establish an infection in one or more quarters within the udder.

Mastitis is an inflammation of one or more quarters of the udder usually caused by bacterial infection. Several types of bacteria cause distinctly different mastitis infections.

Most mastitis persists as subclinical infections and is not detected by the milkers, only occasionally are there clinical signs with clots in the milk and inflamed quarters.

Antibiotic infusions into the udder nearly always cure the clinical disease but may not eliminate the bacterial infection.

Mastitis reduces milk yields, increases the cost of production and makes milk less valuable for liquid consumption and manufacture.

The susceptibility of cows varies considerably and new infections are most common in older cows in early lactation, at the start of the dry period and when the management is poor.

Mastitis inflammation can be detected by simple tests on cows milk (eg. CMT test) but the causative bacteria can be detected only by laboratory tests. The tests for mastitis are either microbiological, to detect the causative pathogen (IDF Bull 132), or tests for the changes in the composition of milk which occurs with the inflammation.

Mastitis cannot be eradicated nor controlled by vaccination or the use of antibiotics alone but it can be reduced to low levels by good cattle management and a planned use of antibiotic treatment

-The control routine is a continuous operation that must be economic and fit easily into a milking routine.

-Mastitis control is based on sound management to prevent new infection. This is done primarily by **REDUCING THE EXPOSURE OF THE UDDER TO MASTITIS PATHOGENS**

- Not all new infections can be prevented and a control routine **MUST INCLUDE METHODS FOR ELIMINATING INFECTION** either when they are detected with clinical mastitis or when cows dry off at the end of lactation



Thankyou