



Kingdom of the Netherlands

# The importance of milk and Quality Based Milk Payment System (QBMPS)

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What is milk quality?

When addressing milk quality we should distinguish **THREE** issue's

### **Composition**

(fat, protein, solids)

### **Adulteration**

(added water, solids, preservatives, antibiotics)

### **Food Safety**

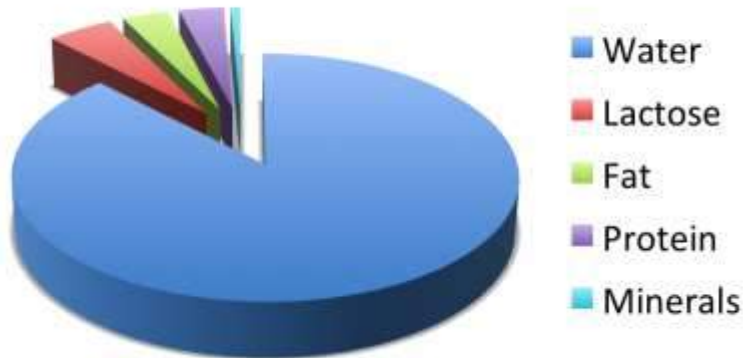
(freshness, TBC, SCC, aflatoxin, pathogens)

# Milk composition

85-87 % water

Variation in components

## Physical Composition of Milk



Trait (%)	Mean	Minimum	Maximum	CV (%)
Fat	3.70	1.58	6.92	38.23
Protein	3.24	2.24	4.78	14.45
Casein	2.95	2.14	4.22	14.24
Lactose	4.28	2.72	5.11	9.63
SNF	7.49	4.84	9.86	10.56
TS	11.64	7.71	17.64	17.03

*CV, coefficient of variation; SNF, solids-not-fat; TS, total solids.*

# Who should care about milk quality?

- Farmers
- Milk collectors
- Milk transporters
- Cooperatives having milk collection centres
- Processors
- Exporters
- Retailers and wholesalers
- Consumers
- Government



# Why we need a Quality Based Milk Payment System

- Increase food safety of milk and milk products
- Increased milk composition
- Avoid/detect adulteration
- Reduce milk spoilage
- Reduced milk collection/transport costs (0.0% water added)
- Reduced milk processing costs (heating, centrifuge etc)
- To have better tasting products with a longer shelf life
- Meet export requirements
- Motivation for producers/farmers to improve on-farm hygiene and handling
- Fair payment for improved milk quality







## Why is there a need for QBMPS

At the end, all milk quality efforts should lead to one major impact, i.e.:

## **INCREASED PROFITS TO ALL THOSE ENGAGED IN THE DAIRY VALUE CHAIN**

Example -High SCC leads to

- Up to 10% reduced milk production
- Breakdown of protein and fat
- Changes in the relationship of protein vs fat
- Decrease in cheese yields/kg milk (<4%)

# What happens to the milk price

At the introduction of a QBMPS, the current milk price level should be the starting point

Only the pricing structure will change

Bonus payment for improved milk quality should be financed from deduction made for poor milk quality

# The backbone of a successful QBMPS

**Reaching the desired raw milk quality parameters  
can only be achieved by providing  
financial incentives to farmers and milk transporters**

Training and education **only** will not have a great impact  
on achieving constant supply of good quality raw milk

When actors in the raw milk chain will have a financial incentive/penalty related to MQ parameters,  
efforts to improve milk quality will be made and thus a need  
for training and coaching will arise



# Key elements in a QBMPS -1

**Awareness and communication** towards farmers, coops/collection centres & milk transporters on the QBMPS pro's and con's and how its works should be the first steps in the introduction of QBMPS in order to get understanding and acceptance of the system

**Technical support and training** should be provided to farmers, coops/MCC's and transporters in regard to all milk hygiene aspects. Thus in case farmers/MMC's and traders are not able to meet the set criteria, they should be able to get support to improve performance

**Reliability** of testing equipment and procedures are important to get and maintain trust of the farmers, coops and transporters. Therefore calibration, maintenance and repair services should be secured

## Key elements in a QBMPS -2

- What parameters to include and to test for
- Where, when to take samples, frequency, by whom, how to handle and tracing
- How and where to test (testing methods & ownership of testing facilities)
- Reliability of testing methods (Ultrasonic vs Mid-Infrared spectroscopy calibration)
- Who is covering the costs for the tests
- How to communicate test results
- How to handle complaints
- Milk acceptance vs milk payment criteria

# QBMPS might trigger some known adulterations

Known adulterations	Effect
Neutralisers such as hydrated lime, sodium hydroxide, sodium carbonate, hydrogen peroxide, formalin, boric acid and more	<i>Better not to be mentioned</i> 😊
Sugar cane (sucrose)	<i>Better not to be mentioned</i> 😊
Starch, wheat flour, arrowroot, rice flour	<i>Better not to be mentioned</i> 😊
Glucose, ammonium sulphate, salt	<i>Better not to be mentioned</i> 😊
Urea	<i>Better not to be mentioned</i> 😊
Melamine	<i>Better not to be mentioned</i> 😊



1-QBMPS is only the system

2-impact of MQ improvement is not driven by legislation but by people

3-all stakeholders must underwrite the need for the system

4-People must have the discipline to follow the system



5-people should understand that the system is adding to the cost to arrive at food safe milk & milk products

6-QBMPS is NOT the goal but a means to achieve the goal, i.e.:

**Producing milk from healthy cows, ensuring good hygienic handling of raw milk in order to provide food safe milk to consumers in the most effective, economic and transparent way**

# Sector transformation

