

RESAZURIN MILK STERILITY TEST

NOTE N°7

Introduction:

Resazurin is a colored indicator especially used in agri-food industry for milk sterility control estimating its bacterial concentration.

Principle:

The principle of this test is based on the sensitivity of the resazurin to the oxidoreduction potential. The level of reduction of the resazurin can thus be correlated with the quantity of bacteria present in the milk by their reduction activity. Indeed, the growth of bacteria in milk decreases its oxidoreduction potential leading to a change of the shade of the resazurin.

Packaging:

Bottle of 100 tablets of 2,5 mg of Resazurin

Specific material required but not provided:

Magnetic stir bars and stirrers – Sterile beaker – Sterile demineralized water – Sterile pipette – Sterile test tube with lid.

Use recommendation:

Resazurin dissolution

- Dissolve 1 resazurin tablet in 50 mL of sterile demineralized water in a sterile beaker
- Agitate the solution until the complete dissolution of the resazurin tablet during 10 minutes using a magnetic stir bar and stirrer.

IE: White deposits may be visible during the dissolution of the resazurin tablet, they correspond to the excipient of the tablet. These deposits do not interfere with the results of the test, as the resazurin is completely dissolved in the water. These deposits can be eliminated by filtering the resazurin solution using a pleated filter paper with a porosity of 5-8 µm.








Milk analysis protocol

- Take 0.5mL of the resazurin solution using a sterile pipette
- Mix it by reversal with 2mL of milk in a sterile test tube
- The resulting solution is stained in blue
- Incubate this solution during 5 hours at 30°C in the dark
- Read the result with naked eye

Results:

The test is negative if no change is observed (blue solution): the milk is sterile. A pink solution indicates an important presumption of a non-sterility of the milk. A total discoloration of the milk (white solution) reveals a non-sterile milk.

Reference: 316350-0000

SHADE OF THE SOLUTION	MICROBIOLOGICAL QUALITY OF MILK (STERILITY)
BLUE 	EXCELLENT
LIGHT BLUE 	VERY GOOD
PURPLE 	GOOD
PURPLE-PINK 	FAIR
PINK 	POOR
LIGHT PINK 	BAD
WHITE 	VERY BAD

Bibliography:

Larpent Jean-Paul. 1997. *Microbiologie alimentaire, Techniques de laboratoire.* Tec&Doc. Lavoisier, Paris.

FAO/TCP/KEN/6611 Project. 2004. *Milk Testing and Quality Control. Milk Processing Guide Series, Vol 2.* Training Program for Small Scale Dairy Sector and Dairy Training Institute. Naivasha.