

indiFOSS



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indiFOSS
MilkoScreen™



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WITH
ADDED FEATURES

MilkoScreen™

5500+ installations
in India and counting

Fair payment to milk producers.
Accurate & direct measurements of
Fat, SNF and Protein done by FTIR.



GOLD STANDARD IN RAW MILK ANALYSIS

For Testing Raw Milk Quality and
Screening of Adulterants

Test Milk Parameters

1. Fat
2. SNF
3. Protein

Screen Adulterants (Basic Package)

4. Added Water
5. Urea
6. Sucrose
7. Maltodextrin
8. Ammonium Sulphate

Screen Milk Abnormality Displaying Abnormal Milk For

9. Glucose
10. Sorbitol
11. Melamine
12. Sodium Chloride
13. Sodium Citrate
14. Starch
15. Hydrogen Peroxide
16. Formalin,
17. Detergents,
18. Sodium Carbonate
19. Sodium Bicarbonate
20. Vegetable Oils with
Chemical Emulsifiers
21. NaOH
22. Any other chemical with IR
absorbance



No more white lies

Introducing MILKOSCREEN, the latest and well proven FT-Infrared based testing machine. With concerns and malpractices at source, MILKOSCREEN allows you to instantly monitor milk adulteration such as water, sugar, maltodextrin, urea, ammonium sulphate etc. Based on advanced FTIR technology, the new MILKOSCREEN is highly sensitive and accurately screens impurities outside a laboratory at a milk collection point. High accuracy of the machine further allows for fair prices to be paid to milk producer based on the quality of milk received at the collection booth.

MILKOSCREEN is a FOSS (Denmark) innovation. FOSS is the world leader in food analysis.



Technology

MILKOSCREEN analyses the product using FT- Infrared technology, assessing milk constituents, using absorption at different wavelengths in the infrared spectrum to detect the presence of specific parameters in the milk like Milk FAT, Protein and SNF.

The accuracy and repeatability of results are comparable to the chemical methods, but does not require the long testing time. Further, unlike other instruments, MILKOSCREEN actually measures FAT and Protein directly.



Protection against adulteration

Adulteration in Raw milk is a growing problem. MILKOSCREEN can screen raw milk samples to identify relevant deviations from pure raw milk samples quickly and as a normal part of everyday testing. The screening is done at the same time as the compositional measurement are performed. No extra equipment or time is required.

Natural raw milk has a particular infrared spectrum, a unique fingerprint. Using FTIR analysis, it is possible to program an analyzer to recognize the spectra (or fingerprint) representing pure raw milk. A warning is then given when sample does not recognize the spectra for pure milk. If the samples are somehow different from pure milk it will be detected immediately.

The Mini Giant



Quality
performance



Easy to
operate



Compliant
technology

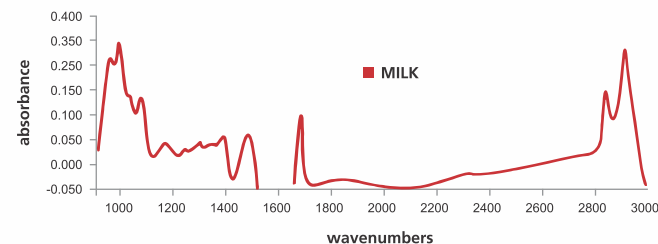


Result in less
than 45 seconds



Adulterants
screening

Accurate Measurement of FAT, SNF and PROTEIN based on
proven FTIR technology & Screening of Adulteration



Features

- Accurate measurements of FAT & SNF in raw cow, buffalo and mixed milk.
- SNF measurement is robust against specific adulterants that change the milk density
- Accurate and direct measurement of protein
- Ability to screen for impure milk
- Detection of specific adulterants
- Easy to use, self contained instrument
- Measurement results can be transferred to PC via RS232
- Eliminated human sources of error- no manual calculations or readings
- Replaced manual and time consuming Gerber and lactometer methods
- Logging of all operations available



Reliable Results

As the technology used is FTIR, MILKOSCREEN provides robustness of result. SNF values are not sensitive to the addition of adulterants in milk to the same extent that competing methods are. Normal adulteration added in milk can increase SNF percentage so that the supplier gets a higher price. But the results of MILKOSCREEN are, in most cases, not affected by addition of adulterants. As a result, the suppliers who are using adulterants to get a higher price would be discouraged to do so.



Dynamic Adulteration Check

Dynamic Adulteration Check is a mechanism to help you select the package of adulterants to be screened, dynamically for a given MilkoScreen instrument. One can select a specific pre-defined package of adulterants to be used on a given MilkoScan from the list of available based on variations in robustness and accuracy of adulterant to be screened. Added water would be selected by default in the given package.

At a given point of time only a single package will be active based on the specific key being updated in the instrument. The details of the selected adulterants are not displayed on the instrument, therefore pourers are unaware about specific adulterants being screened at specific time.

Benefits:

- All total targeted 14 Adulterants can be screened by changing package selection in a group of five at a time.
- Package can be changed dynamically to suit the geography and season.
- Adulteration can be drastically reduced as people are not aware about which parameters are screened on a given day/shift.
- High awareness can be generated to prevent adulteration
- Investment Protection- To Accommodate Dynamic adulteration feature, Hardware changes/ upgradation not required.



Right Price to Producers

Reliable measurement by MILKOSCREEN helps to ensure that payments to milk procedures are neither too high nor too low, but spot on.



**India's high quality, highest selling
Milk Analyzer with adulteration screening**



Dynamic Adulteration Features

- Dynamic selection of packages. Each package consist 5 predefined adulterants.
- Ability to define different package for different instruments
- Ability to define different packages for different shifts.
- Ability to remotely change the package selection (forthcoming).
- Ability to get all reports online on a portal (forthcoming).
- Ability to get alerts on specific adulterants (forthcoming).

Adulterant Packages

- **Package 1-** Water, Urea, Sucrose, Maltodextrin, Ammonium Sulphate
- **Package 2-** Water, Sodium Carbonate, Sodium Citrate, Sodium Hydroxide, Glucose
- **Package 3-** Water, Sodium Bicarbonate, Formaldehyde, Sorbitol, Maltose
- **Package 4-** Water, Sodium Carbonate, Formaldehyde, Glucose, Melamine
- **Package 5-** Water, Sodium Carbonate, Sodium Citrate, Sorbitol, Melamine
- **Package 6-** Water, Sodium Carbonate, Sodium Bicarbonate, Sodium Hydroxide, Maltose.

Performance Specifications

Sample Types	Raw cow milk, Raw buffalo milk, Raw mixed milk • FAT in range 0-13 % • SNF in range 0-15 % • PROTEIN in range 0-8 %
Compositional Parameters	Fat, SNF and Protein
Adulteration Screening (not specific)	Screening for adulteration (impure milk) - If a significant volume of a impure adulterant has been added to the milk, the instrument will give a signal that the milk is not pure

Adulterant and Abnormality Screening

Specific Adulterants screened and displayed	Adulterant	Limit of Detection (%)
	Added Water	≥ 20
	Urea	≥ 0.10
	Sucrose	≥ 0.30
	Maltodextrin	≥ 0.60
	Ammonium Sulphate	≥ 0.08
Other Adulterants Screened and displayed as Abnormal or Bad sample at various concentrations	Glucose, Sorbitol, Melamine, Sodium Chloride, Sodium Citrate, Starch, Hydrogen Peroxide, Formalin, Detergents, Sodium Carbonate, Sodium Bicarbonate, Vegetable Oil with Chemical Emulsifiers, NaOH and any other with IR absorbance.	
Carry-Over Repeatability	<1.0%	
	Fat	S.D. 0.04
	Protein	S.D. 0.04
	SNF	S.D. 0.08
Accuracy	Fat (Ref : Rose Gottlieb)	S.D. 0.10
	Protein (Ref : Kjeldahl)	S.D. 0.08
	SNF (Ref : Oven Drying Method minus Fat)	S.D. 0.14
	*Accuracy is including of compensation for targeted adulterants	
Speed	45 seconds from sample intake to result	

*Specifications are subject to change without notice


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No. of samples per day	400, assuming 80 samples per hour, 5 hours working time per day
warm-up time	Maximum 30 minutes from power on of cold instrument
Sample Conditions	Milk temperature : 5 to 40 degree Celsius. Fat particle distribution in sample must be uniform for representative sampling (sample must be stirred). Pre refrigerated milk samples shall be warmed before measuring
Sample Volume	< 5ml.
Sample Intake	Pipette into a standard beaker
Cleaning	Is manual, according to instructions
Calibration Adjustment	Is possible as slope or bias. Requires password or PC access

User Interface

Display	LCD, Graphical, 128 x 64 dots.
Buttons	Touch buttons at Overlay
Operating Functions	Measure, Zero-Setting, Cleaning, Calibration adjustment, Error message, Service functions.

Environmental Specifications

Approvals	Low Voltage Directive (LVD) (2006 / 95 / EC)
EMC	EMC directive (2004 / 108 / EC)
Relative Humidity	Up to 93%
Ambient Air Temp.	5 to 40°C
Vibration Robustness	0.06 gRMS, IEC 60068 - 2 - 64

Other

Electrical Interface	12V DC (range 10.5 - 13.5V)
Power Consumption	< 20W
Data Interface	SD Card and Rs232
Dimensions	W : 252mm, D : 194mm, H : 207mm
IP	IP41
Weight	4.1 Kg.

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