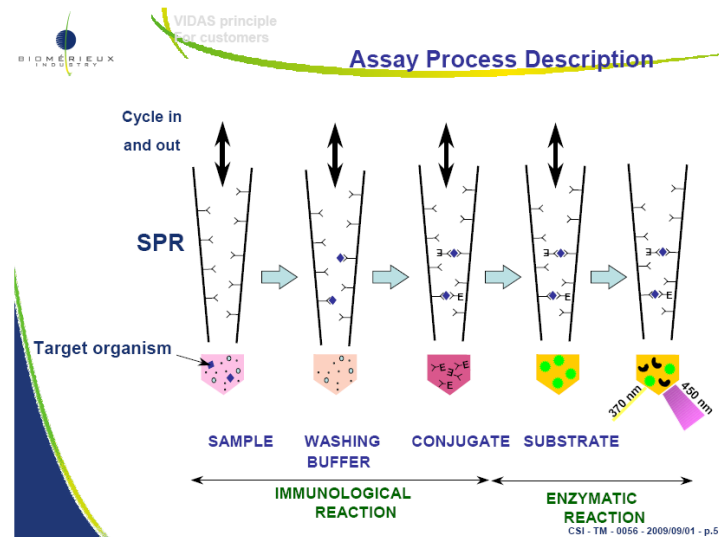


## VIDAS Pathogen monitoring system:

- Advanced and rapid detection of pathogens associated with meat, milk and their products.
- Capable to monitor *Salmonella*, *Listeria monocytogenes*, *E.coli* O157:H7, *Staph.* enterotoxin based on ELISA principle (M/s Biomerieux – VIDAS).
- Able to give results within 24 h.

## Principle



## Application:

- Detection of *Salmonella* spp.
- *E. coli* H7:O157
- *Campylobacter* spp.
- *Staphylococcus aureus* enterotoxin
- *Listeria monocytogenes*

## Type of sample:

- Meat and milk and their products

## User instruction:

- Collect sample as early as possible
- Always bring representative sample
- Follow sampling procedure
- Maintain cold chain

## Contact us:

[rvvet@rediffmail.com](mailto:rvvet@rediffmail.com)

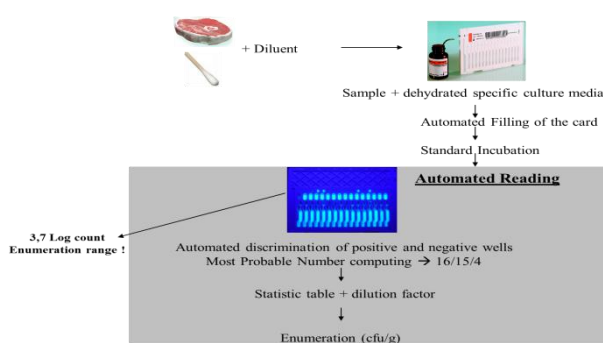
91-9997606133

## Evaluation charge:

## TEMPO

Sophisticated approach to enumerate various food spoiling organisms (Total microflora, E.coli, coliforms, yeast and moulds, enterobacteriaceae) via MPN principle. It is a labour and time saving assay with minimal cross contamination. High throughput approach using miniature TEMPO cards which are incubated in conventional incubators.

### Principle:



### Application:

- Total viable count
- Enterobacteriaceae count
- Coliform count
- Yeast and mould count

### Type of sample:

- Meat and milk and their products

### User instruction:

- Collect sample as early as possible
- Always bring representative sample
- Follow sampling procedure
- Maintain cold chain

### Contact us:

[rvvet@rediffmail.com](mailto:rvvet@rediffmail.com)

91-9997606133

### Evaluation charge:

Rs. 1000 / sample

## Gas chromatography

Gas Chromatographic instrument mostly used for fatty acid profiling of meat, milk, fat, oil, feed and foods (M/s Thermo Scientific).

Can analyse 37 fatty acids in the matrix at once.

Applicable for analysis of conjugated linoleic acid (CLA) and cholesterol.

### Principle:

A gas chromatograph (GC) is an analytical instrument that measures the content of various fatty acids, CLA and cholesterol in food samples. The sample solution injected into the instrument enters a gas stream (Zero air, nitrogen and hydrogen) which transports the sample into a column. The various components are separated inside the column based on their retention time and evaporation temperature which are measured by detector against standard fatty acid spectra.

### Application:

- Thirty seven fatty acids
- Conjugated linoleic acid
- Cholesterol

### Type of sample:

- Fat, meat and milk and their products, feed

### User instruction:

- Fresh sample
- Follow standard sampling protocols

### Contact us:

[vrvet@rediffmail.com](mailto:vrvet@rediffmail.com)

91-9997606133

### Evaluation charge:

Rs. 500 / run

## GC-MS/MS (Shimadzu TQ-8030)

The system offers a solution for today's challenges along with the speed, accuracy and ease-of-operation. The GCMS-TQ8030 achieves the highest sensitivity specification in its class for multiple reaction monitoring (MRM) measurements by GC/MS/MS, as well as for scan and SIM measurements by GC/MS. The instrument's high-sensitivity analysis allows a wide variety of measurement modes including MRM, scan, combination scan/MRM and neutral loss scan among others.

### Principle:

A mass spectrometer generates multiple ions from the sample to be analysed; followed by their separation according to their specific mass-to-charge ratio ( $m/z$ ), and then records the relative abundance of each ion type.

The first step in the mass spectrometric analysis of compounds is the production of gas phase ions of the compound, basically by electron ionization. This molecular ion undergoes fragmentation. Each primary product ion derived from the molecular ion, in turn, undergoes fragmentation, and so on. The ions are separated in the mass spectrometer according to their mass-to-charge ratio, and are detected in proportion to their abundance. A mass spectrum of the molecule is thus produced. It displays the result in the form of a plot of ion abundance versus mass-to-charge ratio. Ions provide information concerning the nature and the structure of their precursor molecule. In the spectrum of a pure compound, the molecular ion, if present, appears at the highest value of  $m/z$  (followed by ions containing heavier isotopes) and gives the molecular mass of the compound.

### Application:

Pesticide residue analysis (40)

- Phytochemical screening

### Type of sample:

- Meat, milk, food, feed, herbal extract

### User instruction:

- Fresh sample
- Follow standard sampling protocols

### Contact us:

[rvvet@rediffmail.com](mailto:rvvet@rediffmail.com)

91-9997606133

### Evaluation charge:

Phytochemicals: Rs. 500 run

Pesticide residues: Rs. 3000 /compound

## ICP-MS (PerkinElmer – NexION350).

- Advanced instrument for the mineral profiling of different matrix including meat, milk, feed, soil and water.
- It is based on mass spectroscopy principle.
- Suitable for measurement of macro and micro minerals as well as toxic elements like Pb, Hg, As, Cd etc.
- Capable of evaluating 33 elements at once.

### Principle

A mass spectrometer generates multiple ions from the sample to be analysed; followed by their separation according to their specific mass-to-charge ratio ( $m/z$ ), and then records the relative abundance of each ion type.

The first step in the mass spectrometric analysis of compounds is the production of gas phase ions of the compound, basically by electron ionization. This molecular ion undergoes fragmentation. Each primary product ion derived from the molecular ion, in turn, undergoes fragmentation, and so on. The ions are separated in the mass spectrometer according to their mass-to-charge ratio, and are detected in proportion to their abundance. A mass spectrum of the molecule is thus produced. It displays the result in the form of a plot of ion abundance versus mass-to-charge ratio. Ions provide information concerning the nature and the structure of their precursor molecule. In the spectrum of a pure compound, the molecular ion, if present, appears at the highest value of  $m/z$  (followed by ions containing heavier isotopes) and gives the molecular mass of the compound.

### Application:

- Mineral analysis

### Type of sample:

- Meat, milk, food, feed

### User instruction:

- Follow standard sampling protocols

### Contact us:

[rvvet@rediffmail.com](mailto:rvvet@rediffmail.com)

91-9997606133

### Evaluation charge:

Rs. 500 / element

### **Moisture analyser (CEM):**

- Analyse the moisture or solid in the sample through microwave assisted drying system.
- Highly accurate, convenient and time saving.
- Analyse the sample within 3-4 min.

### **Principle:**

Microwave assisted heating of samples eliminates all the moisture to make them dry and moisture percent is recorded based on loss of weight.

### **Application:**

- Moisture analysis, total solid analysis

### **Type of sample:**

- Meat, milk, feed

### **User instruction:**

- Follow standard sampling protocols

### **Contact us:**

[rvvet@rediffmail.com](mailto:rvvet@rediffmail.com)

91-9997606133

### **Evaluation charge:**

Rs. 150 / sample

## **Sprint protein analyser**

A remarkably easy to use and direct measurement of protein. It is a rapid method and has a better accuracy than Kjeldahl and combustion techniques. This method is approved by AOAC and AACC.

### **Principle**

This equipment utilizes CEM's proprietary iTAG technology, which attaches to the protein itself for an accurate, direct measurement. With this, we can be certain that the results are not affected by naturally occurring nitrogen or adulterants, because only the protein is tagged and measured, not the nitrogen.

### **Application:**

- Protein analysis

### **Type of sample:**

- Meat, milk, feed

### **User instruction:**

- Follow standard sampling protocols

### **Contact us:**

[vrvet@rediffmail.com](mailto:vrvet@rediffmail.com)

91-9997606133

### **Evaluation charge:**

Rs. 500 / sample

## Texture Profile Analysis (Stable Micro System)

Texture analyser to measure the physical properties of your product are endless. It is capable of measuring virtually any physical product characteristic such as hardness, fracturability, adhesiveness, gel strength, extensibility of foods, milk and meat products. The instrument plus is commonly employed to measure and quantify fundamental, empirical and imitative tests in both compression and tension, covering those relating to texture analysis, materials properties as well as effects of rheology of solid, semi-solid, viscous liquid, powder and granulate materials. It presents a small portable solution for texture analysis testing measuring up to 50kg in force.

### Principle:

Compression/shearing of meat/milk products through application of known amount of force generates number parameters such as hardness, adhesiveness, springiness, cohesiveness, gumminess, chewiness, resilience, shear force, working of shear, crispiness etc. reflecting textural properties of products.

### Application:

- Textural Profile Analysis

### Type of sample:

- Meat, meat products, milk products

### User instruction:

- Fresh sample

### Contact us:

[rvvet@rediffmail.com](mailto:rvvet@rediffmail.com)

91-9997606133

### Evaluation charge:

Rs. 1000 / sample



## **Bomb Calorimeter (Parr)**

A microprocessor controlled isoperibol oxygen bomb calorimeter which is widely used for both routine and occasional calorific tests. It is a compact calorimeter, producing reliable results with good repeatability

### **Principle:**

A bomb calorimeter is a type of constant-volume calorimeter used in measuring the heat of combustion of a particular reaction. Bomb calorimeters have to withstand the large pressure within the calorimeter as the reaction is being measured. Electrical energy is used to ignite the fuel; as the fuel is burning, it will heat up the surrounding air, which expands and escapes through a tube that leads the air out of the calorimeter. When the air is escaping through the copper tube it will also heat up the water outside the tube. The change in temperature of the water allows for calculating calorie content of the food products.

### **Application:**

- Gross energy

### **Type of sample:**

- Meat, milk, products, feed

### **User instruction:**

- Dried sample pellet

### **Contact us:**

[rvvet@rediffmail.com](mailto:rvvet@rediffmail.com)

91-9997606133

### **Evaluation charge:**

Rs. 300 / sample

## Colour coordinates (Color Tec)

It is hand held instrument capable of performing a number of color measurements. The instrument may be operated either as a portable unit or used under control of a personal computer using standard USB interface.

### Principle:

The Hunter L, a, b color scale is more visually uniform than the XYZ color scale. In a uniform color scale, the differences between points plotted in the color space correspond to visual differences between the colors plotted. The Hunter L, a, b color space is organized in a cube form. The L axis runs from top to bottom. The maximum for L is 100, which would be a perfect reflecting diffuser. The minimum for L would be zero, which would be black. The a and b axes have no specific numerical limits. Positive a is red. Negative a is green. Positive b is yellow. Negative b is blue.

### Application:

- Lightness, Yellowness, Redness, hue, chroma

### Type of sample:

- Meat and milk products

### User instruction:

- Fresh/frozen sample

### Contact us:

[vrvet@rediffmail.com](mailto:vrvet@rediffmail.com)

91-9997606133

### Evaluation charge:

Rs. 500 / sample