DEPARTMENT OF FOOD SCIENCE AND NUTRITION – Equipment details

CABINET DRIERS

This food dryer equipment is mainly used in drying fruit, vegetables, seafood, flowers, such as lemon, apple, banana, meat, fish, noodles, sausage, chrysanthemum, rose dry food processing, etc. The productivity is high and with low consumption. There are trolleys with shelves inside the dryer and many plates on the shelves. We can place the food on the plates, and then put the plates on the shelves. Salient features of these food dryers are extensive application, energy saving and low consumption(no pollution), multifunction:drying, cooling, dehumidifying, ventilation and PLC intelligent control.

UV VIS SPECTROPHOTOMETER

This UV vis spectrophotometer is a universal, research-grade spectrophotometer that can be used in a wide range of fields, and easily expanded to suit the measurement objective.By using the optional integrating sphere, the measurement wavelength range of the UV-2600 can be extended to the near-infrared region of 1400 nm.Validation software is provided as standard for both instruments, so equipment performance can be easily checked in daily inspections and when data accuracy becomes a concern.

ATOMIC ABSORPTION SPECTROPHOTOMETER

Atomic absorption spectrophotometry analyses the concentration of elements in a liquid sample based on energy absorbed from certain wavelengths of light (usually 190 to 900 nm). Atomic absorption spectrophotometers typically include a flame burner to atomize the sample (most commonly a hollow cathode lamp), a monochromator, and a photon detector.

FIBRE ANALYSER

Fibre (fiber) analysis laboratory testing is used for identification, quality inspection, determining contamination and is deployed from macro to nano scale.Surface analysis capabilities range from the macro to the nano-scale, including the capability to measure and analyse depositions. Fibre testing is also a crucial aspect in determining the source of contamination.

RHEOMETER

The rheometer is works based on the principle of applied shear stress or apply extensional stress. It measures the way in which a liquid suspension or slurry flows in response to applied forces called the rheology of the fluid. They are designed as a native stress control or strain control instrument. It is used for fluids which cannot be defined by a single value of viscosity. It requires parameter setting and measurements to be made than viscometer. In the nutrition lab it is used for testing the acceptable food rheology of the products developed as a part of research. This equipment is used to obtain a clear understanding of the ingredients and their effect on the rheology to design specific products and for research involving sensory and textural properties of food.


ELISA PLATE READER AND WASHER

The basic principle in Elisa readers special filters for 5 – 6 standard wavelength depending on various substrate types. It performs a number of functions including measuring florescence and luminance to identify the amount of substance present. The Elisa photometers filter fits almost all substrates. It's faster than spectrometer. It can be used for multiple sample analysis at the same time. In the nutrition lab it is used research involving vitamin D, HIV patients, enzymes and detecting food allergies.

SOXHLET

A soxhlet has three main section percolators, thimble and a siphon mechanism. It allows unmonitored and unmanaged operation while efficiently recycling a small amount of solvent to dissolve a larger amount of material. It extracts a lipid from a solid material. It is used to extract desired compound which has limited solubility in solvent from impurities insoluble in solvent. It is used as a reference and standard method in the laboratory for extraction of oil and flavored compounds with help of a solvent.
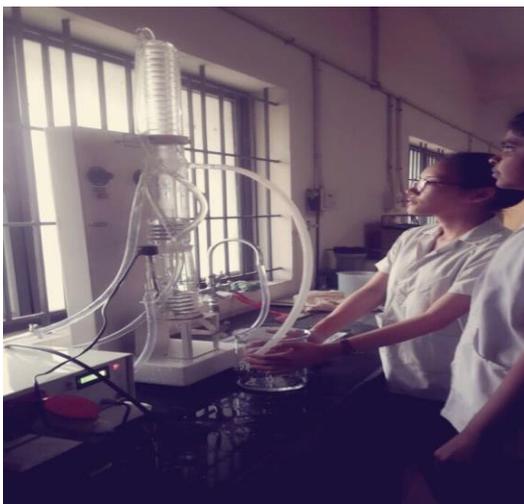
DOUBLE DISTILLATION UNIT

It consists of flak with heating elements embedded in fine glass. Double distillation unit is fused in spiral type coil fitted internally bottom along with tapered round glass. It is used for carrying out reactions used stirred conditions along with furnishing for reflux distillation. It is used As distiller for producing distilled water for laboratory research. It is used to obtain sufficient purity for certain research applications. Research involving low conductivity and ultra purity use double distilled water.

PENETROMETER

Penetrometers are used for objective evaluation of food products. Penetrometers, equipped with a plunger and a needle or cone, penetrate food samples through gravitational force for a selected period of time. The distance the test device penetrates into the sample is measured to determine the relative tenderness of the samples such as baked products and gels.

DEEP FREEZER

Deep freezer is a machine which has an electric compressor that attached to the unit, which moves the coolant through lines that remove heat from the interior by rapid evaporation and they are maintained at a constant temperature of 0ºF, which is about right for hard-freezing foods for long-term storage. The temperature usually ranges between 20ºF to -20ºF. They were used in storage, imports and exports of perishables. In baking industry it is used in yogurt, cheeses, Pizza, pie crust dough, breads, pasta, sauces, ice creams, etc.

NOODLE MAKING MACHINE

Laptop model of Noodle Making Machine is used for making various varieties of noodles such as wheat, rice and others.

DOUGH MIXER

A mixer is a kitchen utensil which uses a gear-driven mechanism to rotate a set of **beaters** in a bowl containing the food to be prepared. It automates the repetitive tasks of stirring, whisking or beating. When the **beaters** are replaced by a **dough hook**, a mixer may also be used to knead. It is used for kneading large quantities of dough. It is electrical, having timers and various controls to suit the user's needs. Some features of dough blenders include high speed, low speed and bowl reverse and a kneading bar in the centre of the bowl.

DOUGH SHEETER

Dough sheeter is used in bakeries and rolls out dough into a consistent dough sheet with a desired even dough thickness. It shapes the dough from individual dough batch to continuous dough sheet. It also promotes less damaging of the gluten network and also laminate layers of dough together.

DOUGH DIVIDER

Dough dividers are used in bakeries to divide high volumes of dough into quantities of equal size, using one or two pistons, or a knife. Dough dividers used for small batch production operate on manual rather than mechanical action, with hazards isolated during division of dough.

DOUGH ROUNDER

A dough rounder kneads and shapes portions of dough for proofing. They can be used to round bread, buns, tortillas, and other bakery items. The most common type is the conical rounder, where the dough travels in a spiral pattern around a center axis.

BAKING OVEN

Ovens are the workhorses of the bakeshop and are essential for producing the bakery products. Ovens are enclosed spaces in which food is heated, usually by hot air. The items to be baked either on sheet pans or in the case of some bread freestanding are placed directly on the oven. They were equipped with steam ejector and the sheet pans will be wheeled for baking.

BREAD SLICER

The bread slicer is an equipment designed to cut bakery products already prepared (cooked) into several slices automatically, replacing the manual use of kitchen utensils. It consists of: Spaced blades in several standard dimensions, proceeding to a graph cut. The bread slicer is best suited to the small, wholesale and large retail bakery where a great number of sliced breads are produced. All types of white and sweet bread can be sliced without wastage or damage. The cut slices come out at the output end.