

LHP 102 FOOD PROCESSING



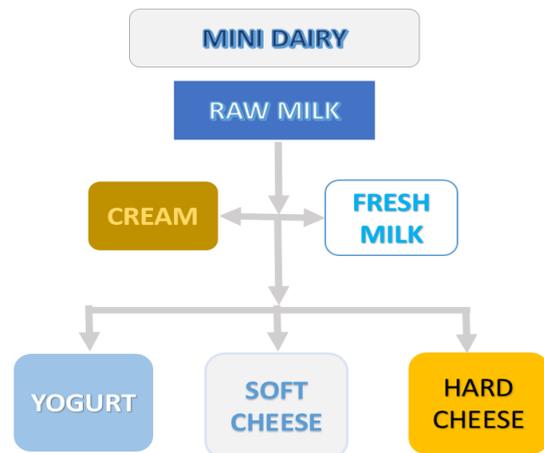
The MD 100 Mini Dairy is based on mini scaled producing dairy process equipment and is a perfect and friendly solution for the smaller-scale farmer or an Educational training lab. MD 100 is a **mini production dairy line** for **Yogurt** and **Cheese** after the milk is pasteurized in the same vat earlier. Butter is a byproduct. The Mini Dairy is a flexible small line of dairy production and contains all typical components used in modern milk, yogurt, cream and cheese production processes and tailored according to the overall required production rate.

The multi-functional Mini Dairy is suitable for the production rate of 200Lt per shift, 2 batch process per 8 hours of work shift.

The customer is offered a complete full-scale, turn-key line of equipment that includes everything he needs for his dairy production. Polytech offers all the planning and instructions regarding the Facilities of Drainage, Water, Electricity and Air. Polytech provides a Start-Up as well as training for the local team in producing the product and utilizing the equipment in the most efficient way.

This is a perfect solution for being an **Educational Pilot dairy production platform** where students can have hands-on training on real life equipment that covers the range of dairy production techniques for milk process dairy producers.

The Mini Dairy can be **optionally** combined with **homogenizer** and **automatic packaging** machines. The milk Dairy is capable of producing the classic dairy products as: pasteurized milk, yogurt and soft and salted white cheese and hard yellow chesses as well as Butter Cream. Mini Dairy 100 is very easy to clean and operate, a user friendly unit, a perfect solution for small and medium range cow, goat and sheep milk farms and Agro colleges with quantities of up to 300 liters of milk per day. All basic process components and parts are made of stainless steel.



Polytech offers a full turn-key solution for setting up the Mini Dairy including:

- Welding and installation at clients designated site.
- Installing, connecting and Training.
- Commissioning.
- Supplying operation manuals and know-how transfer.
- Training for dairy laboratory tests.
- Food Technician orientation.
- Team Training.
- Equipment Training and Operation.
- Dairy Product Processing Training.
- Product management.

MD 100 Basic Configuration MD 100.1 to MD100.13

Production Rate	200 Liters/Shift (or as per client request)
Raw Materials	Raw Whole Milk: Cow, Goat, Sheep, Buffalo
Final product	Pasteurized milk (full fat), Yogurt (full fat), Cheese (hard and soft)
Production area and storage (estimated)	>150 sqr.m
Electricity	380V 50Hz
Cooling	Running water (Ice water chilling System is Optional)

EQUIPMENT LIST

MD100.1 - Raw Milk Receiving Tank	1
MD100.2 - Milk pump	1
MD100.3 - Cream separator - Filter	1
MD100.4 - Boiler - Pasteurizer	1
MD100.5 - VAT for soft cheese	1
MD100.6 - Cheese factory bench with 15 plastic cheese forms	1
MD100.7 - Liquid/Semi liquid fillers	1
MD100.8 - INOX dairy bench	1
MD100.9 - Yogurt storage/cooling cabinet	1
MD100.10 - Cheese Boiler	1
MD100.11 - Press	1
MD100.12 - Set of hard cheese forms	1
MD100.13 - VAT container for hard cheese, 100 lt.	1
Optional facilities – Recommended	
MD100.14 - 2 Storage Areas - Chamber Conditioners	2
MD100.15 - Complete Storage - Cooling Chamber (<i>Optional</i>)	1

BioLab 1

A compact, easy to use, portable lab kit which allows the USER to learn the scientific process of measuring **DRINK and BEVERAGE antioxidant capacity**.

The set offers all required equipment - instruments to conduct the above tests and a specially developed application which guides the user in every step of the testing procedure.



SCIENCE FACTS

Free radicals are highly unstable molecules that are naturally formed when you exercise and when your body converts food into energy. Your body can also be exposed to free radicals from a variety of environmental sources, such as cigarette smoke, air pollution and sunlight. Free radicals can cause “oxidative stress”, a process that can trigger cell damage. Oxidative stress is thought to play a role in a variety of diseases including cancer, cardiovascular diseases, diabetes, Alzheimer’s disease, Parkinson’s disease, and eye diseases such as cataracts and age-related macular degeneration.

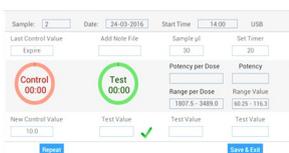


Antioxidants are man-made or natural substances that prevent or delay some types of cell damages. Antioxidant molecules have been shown to counteract oxidative stress in laboratory experiments (for example, in cells or animal studies). Diets high in vegetables and fruits, which are good sources of antioxidants, have been found to be healthy. Examples of antioxidants include vitamins C and E, selenium, and carotenoids, such as beta-carotene, lycopene, lutein, and zeaxanthin.



THE OBJECTIVE

Biolab 1 was created in order to offer to the scientific lab and the food technology a simple, specific lab tool, at **low cost**, which can easily and practically **estimate the antioxidant effect** of our every day consumed **drinks and beverages** i.e. Coffee, tea, juices, wine, beer, Sodas, etc. It is a test set based on a simplified method using the **DPPH** technique and produces very high accuracy results.



Biolab 1 technology in combination with its low cost, portability and simplicity, aims to cover the need of internal (not outsourced) testing, measurement and determination of the antioxidant capacity of various types of Drinks and Beverages produced by different groups in the sector of this Industry (Producers, Bottlers, Distributors, etc.) in order to either improve or maintain the quality of their products by knowing its antioxidant capacity.

BioLab 1

The BIOLAB 1 portable lab tester is housed in an aluminum profile briefcase. It offers all the facilities needed to conduct the testing and measurements including the application which drives the set process.

The BioLab set incorporates:

- ◆ falcon tube holder.
- ◆ a build-in stirrer, battery operated (batteries are removable).
- ◆ Eppendorf tubes 2ml holders.
- ◆ bottle holders and reusable bottles, 4 x 50 ml.
- ◆ a colorimeter with detection wavelength 520nm, 410nm with USB IF.
- ◆ an Android pad* which manages with the installed **BioLab V1.0 application** controlling the lab process in a step by step procedure.
- ◆ a variable volume pipette (20 - 200ml).
- ◆ a variable volume pipette (100 - 1000 ml).
- ◆ two sets of consumable tips for the pipettes (2x25pcs).
- ◆ one set of consumable Eppendorf 2ml mini tubes (30pcs).

Dimensions (LxWxH): 38,5 x 27 x 12,5 cm

Weight : 3,0 Kg (Including PAD)

Power: Battery 3V and USB port operated



THE APPLICATION

BioLab V1.0 is the application which facilitates the user to manage all the test work such as keeping inventory records of products and test samples, guide him in a step by step and time recording process, record the test results and evaluate them and finally create any type of reports. It offers a versatile data base for products, categories and types, samples, reference values for testing results per category of product, timer and time stamps, on - line test value recording and acceptance, cross references and an on-line help menu. It offers Links over the Internet to libraries or relevant documentation sites. It directs the user to the process of measurements in a step by step way, error proof. Alarms the user for any test results which do not fall within the limits according to referenced values. It offers a user friendly GUI, easy to operate.

Sample: 2	Date: 24-03-2016	Start Time: 14:00	USB
Last Control Value Expire	Add Note File	Sample µl 30	Set Timer 20
Control 00:00	Test 00:00	Potency per Dose Range per Dose 1807.5 - 3489.0	Potency Range Value 60.25 - 116.3
New Control Value 10.0	Test Value ✓	Test Value	Test Value
Repeat		Save & Exit	
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Products	Tests	Reports	Links	Help
Category	Product Type	Test(s)	✘	
Date	Time	Dilution	Control	Test Notes
Test Value 1	Test Value 2	Test Value 3	Sample µl	Name - notes
Potency	Potency per Dose	Range per Dose	Time Sample	Range Value
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CONSUMABLES

To perform the tests, a user will need the following consumables:

- 1 Methanol 150 ml. Must be purchased locally.
- 2 Pipette tips - 2 sets of 25 pcs in the initial BioLab kit.
- 3 DPPH. Must be purchased locally and stored within the specifications given by the supplier.
- 4 Eppendorf tubes – 30 pieces pre-packed in the initial BioLab 1 Kit.