BIOSTAR ECOLINE FERMENTERS AND BIOSTAR STARTER CULTURES

BIOSTAR PPHU WITOLD KRUSZ

We are a family company present on the bakery market for more than one hundred twenty years now. The main area of our interests is the dough production for all kinds of baked goods. For about 30 years we have been working on adapting old traditional technologies based on natural fermentation to the current economic realities. We produce starters initiating the process of fermentation, which are based on strains obtained fifty years ago from sourdough of the leading artisanal workshops. In order to facilitate work and eliminate human errors, we have constructed series of machines allowing to make maximum use of the values of old technologies. This offer presents starters and devices for the preparation, storage and eventual dosing of active sourdough, predough and yeast milk with the dough yield TA 200–300

If you wish to join the group of the elite bakeries producing baked goods on real and natural sourdough, cooperate with us. Together we will overcome the lack of properly prepared professionals. We will facilitate taking control over the technological regime, ensuring the stability of parameters such as temperature and time of particular steps of the fermentation process. We ensure a high degree of production flexibility in your bakeries.

We would like to emphasise that BioStar, due to its stable market position and extensive experience in the industry, guarantees reliable performance of deliveries and provides with professional service support.

WE LOOK FORWARD TO WORKING WITH YOU!

Photo 1. BioStar designs and produces process lines for both artisan and industrial bakeries.

BIOSTAR PPHU WITOLD KRUSZ – OUR STARTERS

Biostar is a producer of new-generation baking starters.

Contrary to the starters already present on the market, our starters consist of a compound mixed population of lactic bacteria and yeast representative for baking dough environment.

The use of baking starters sets a good direction for fermentation through a domination of microflora coming from flour and auxiliaries. This guarantees:

- Quick initiation of the fermentation process.
- Providing the flour with proper baking properties as a result of biochemical processes under the action of natural metabolites of lactic bacteria and yeast.
- Repeatable quality every time.
- Reliability and infallibility of technological processes.
- Stability of fermentation and therefore of the whole production technology.
- Obtaining baking goods of a proper taste and aroma.
- High dietary and health properties.
- Extended bread consumption date as a result of improving the property of crumb and reducing the risk of development of foreign microflora.

TYPES OF BIOSTAR STARTER CULTURES:

RYE SOURDOUGH:

Our flagship product is Biostar Plus baking starter in the form of lyophilisate:

- It contains not less than 2X 10^9 CFUs of lactic bacteria and 5X 10^5 CFUs of yeast in one gram of lyophilisate.
- A mixture of three strains of lactic bacteria Lactobacillus plantarum, Lactobacillus brevis and Lactobacillus sancasfrincescis, isolated typical artisanal rye sourdough, and Saccharomyces cerevisiae yeast was created.
- Physiological factors of the above-mentioned bacteria strains toward yeast determine durability of the composition, strong activity of fermentation, both lactic acid and ethanol.

As a result, we obtain bread rich in lactic acid, which gives it an interesting taste and improves its health properties.

WHEAT SOURDOUGH

We have prepared Biostar II and Biostar III starters to initiate fermentation of wheat sourdough.

- Biostar II is composed of Lactobacillus sancasfrincescis and Lactobacillus brevis strains and Saccharomyces cerevisiae yeast.
- Biostar II is composed of three Lactobacillus plantarum strains and Saccharomyces cerevisiae yeast.

Starters have the form of lyophilisate, which contains not less than 2X 10^9 CFUs of lactic bacteria in one gram.

PREDOUGH

In order to improve the effectiveness of preparation of predough, we have created a starter being a mixture of three strains of Lactobacillus plantarum family.

The addition to predough results in the lowering of pH, which contributes to a faster multiplication of yeast cells.

BIO-FM-ECOLINE UNIVERSAL FERMENTER FOR SMALL AND MEDIUM BAKERIES

In order to facilitate the work of bakers (dough bakers), a universal fermentation system has been constructed, which guarantees a stability of parameters imposed by technology.

Bio-Fm-Ecoline is a device constructed based on rich experience in the production of baking machines. It can be easily adapted to produce rye, wheat sourdough, predough and yeast milk with the capacity of 190–300 l.

Photo 2. The Ecoline fermenter with a temperature mapping system mounted outside the building.

CONSTRUCTION OF THE BIO-FM-ECOLINE SERIES

- The BIOSTAR fermenters are produced in the technology of a laser-welded pillow-plate wall. The wall is located on the conical part. The tank's thermal insulation is made of a mineral wool mat. The whole is closed with an external wall. The tank bottom is made of a conical bottom-board with a 150° slope. The tanks' internal panels are finished conventionally as 2B (Ra 0.3~0.5), while all joints welded inside the tank are ground. Steel construction elements are made of AISI 304/316 steel. The outflow of the tank is located in such a way that the stirrer ensures emptying of the tank when in use.

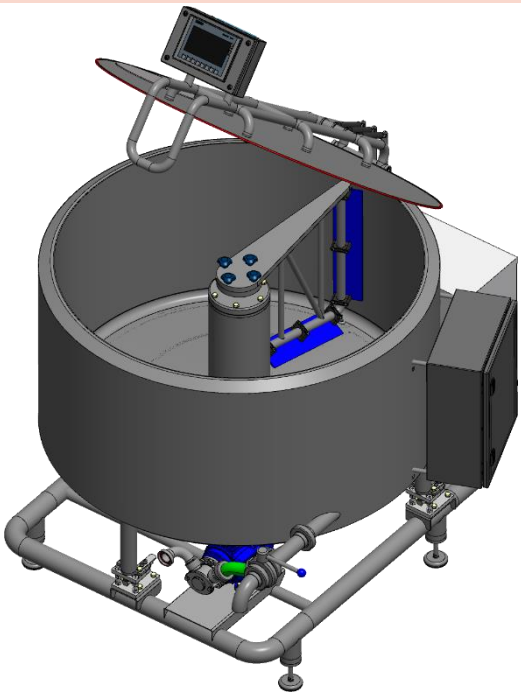


Figure 1. The construction of Ecoline series tanks ensures the highest level of hygiene and ease of operation.

- All the elements having a direct contact with food hold the FDA/ EFSA certificate.
- The device is equipped with a frame-tubular mixer additionally equipped with teflon-coated scrapers. This solution ensures an optimal and quick stirring of water, flour and yeast, a constant temperature of the entire sourdough/milk mass and an efficient exchange of heat during heating and cooling process. The optimised construction of the mixer does not damage gluten and yeast cells.

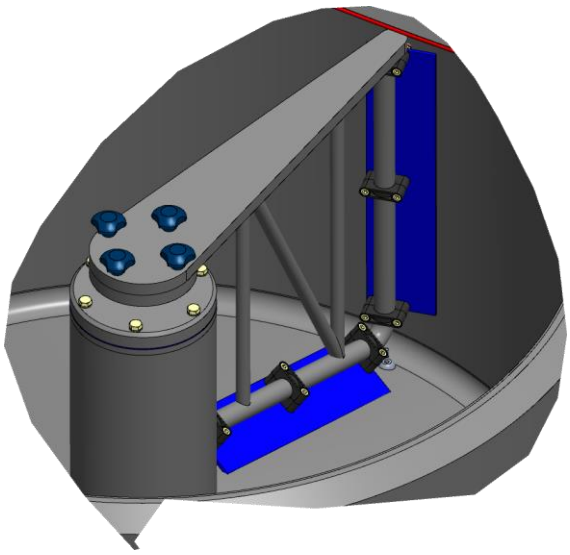


Figure 2. The unique construction of the mixer ensures quick stirring and an intensive exchange of heat between the material and the heated/cooled walls. Quick disassembly allows to clean the inside of the tank in an easy and accurate way.

- A system of temperature regulation with a full power regulation developed by BioStar is responsible for the stability of fermentation parameters. The system operates on an ecological R32 refrigerant. In combination with the teflon-coated scrapers there is no risk of the mixture to freeze to the walls of the tank.
- The control system automatically regulates the parameters of the fermentation process, multiplication and a proper storage of the biologically active material. The control cabinet is equipped with 7” HDMI touch display. The models equipped with the weighing system allow for an automatic dosing in versions equipped with the Siemens controller there is an option to record dosing formulas.

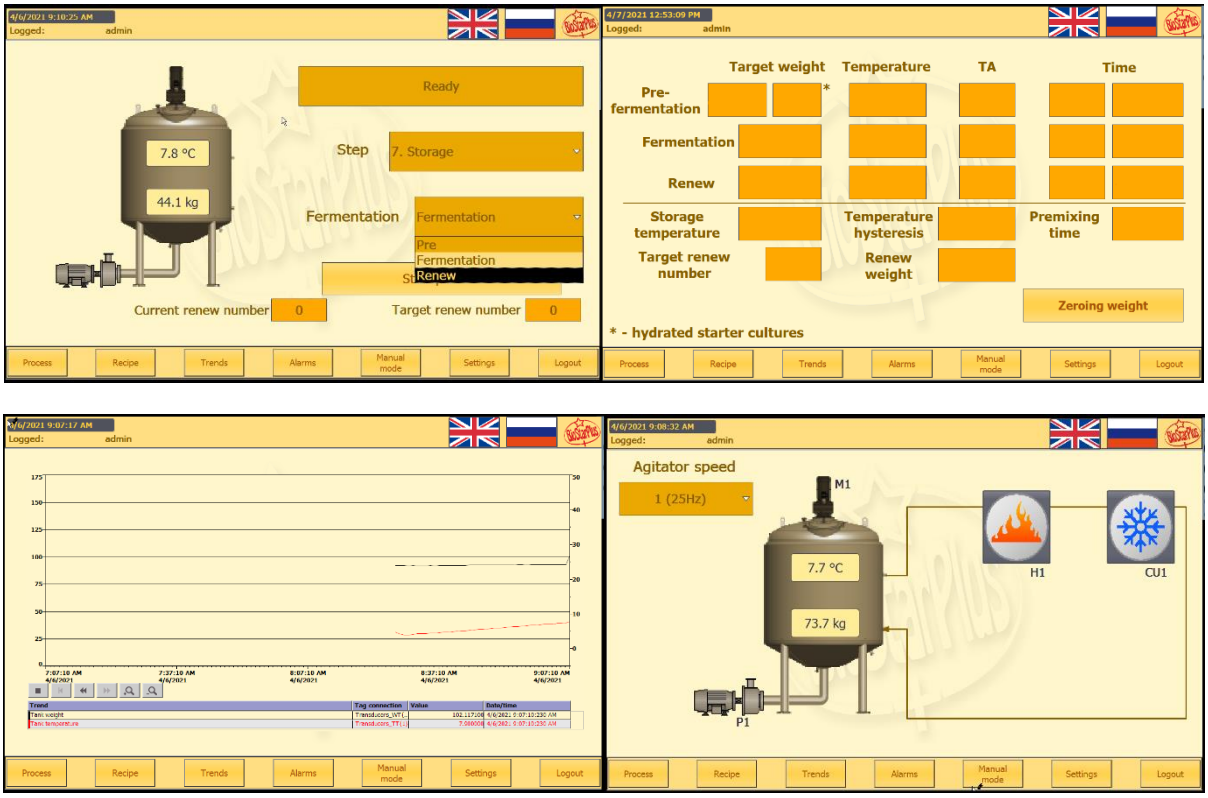
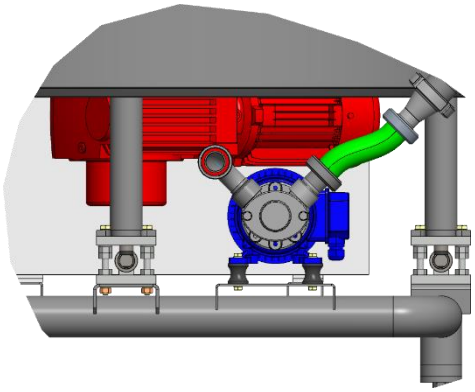


Figure 3. The operator panel is clear and intuitive. It ensures easy operation with minimum training time.

- The Ecoline fermenters may be equipped in an optional dosing and formulation system. This solution consists of a dosing pump with a flexible rotor, weighing sensors and a weighing module. The system performs an automatic dosing of sourdough to the bowl after indicating on the panel of the desired quantity. It also supervises the preparation of sourdough/yeast milk by providing the staff with the required amounts of water, yeast and flour.



HOW DOES OUR ECOLINE SERIES FERMENTATOR WORK?

Bio-Fm-Ecoline is a device allowing to produce wheat and rye sourdough, predough and yeast milk. It operates in two modes:

Mode I: preparation of a mixture of water and flour or water and yeast. After mixing, the process of fermentation begins (indicated temperature and process time) Completion of the process of fermentation, the device automatically switches into mode II of storage work (cooling).

Mode II: consists of cooling and storing the biologically active material. The material is collected by gravitation through a flap valve or may be dosed in an automatic manner.

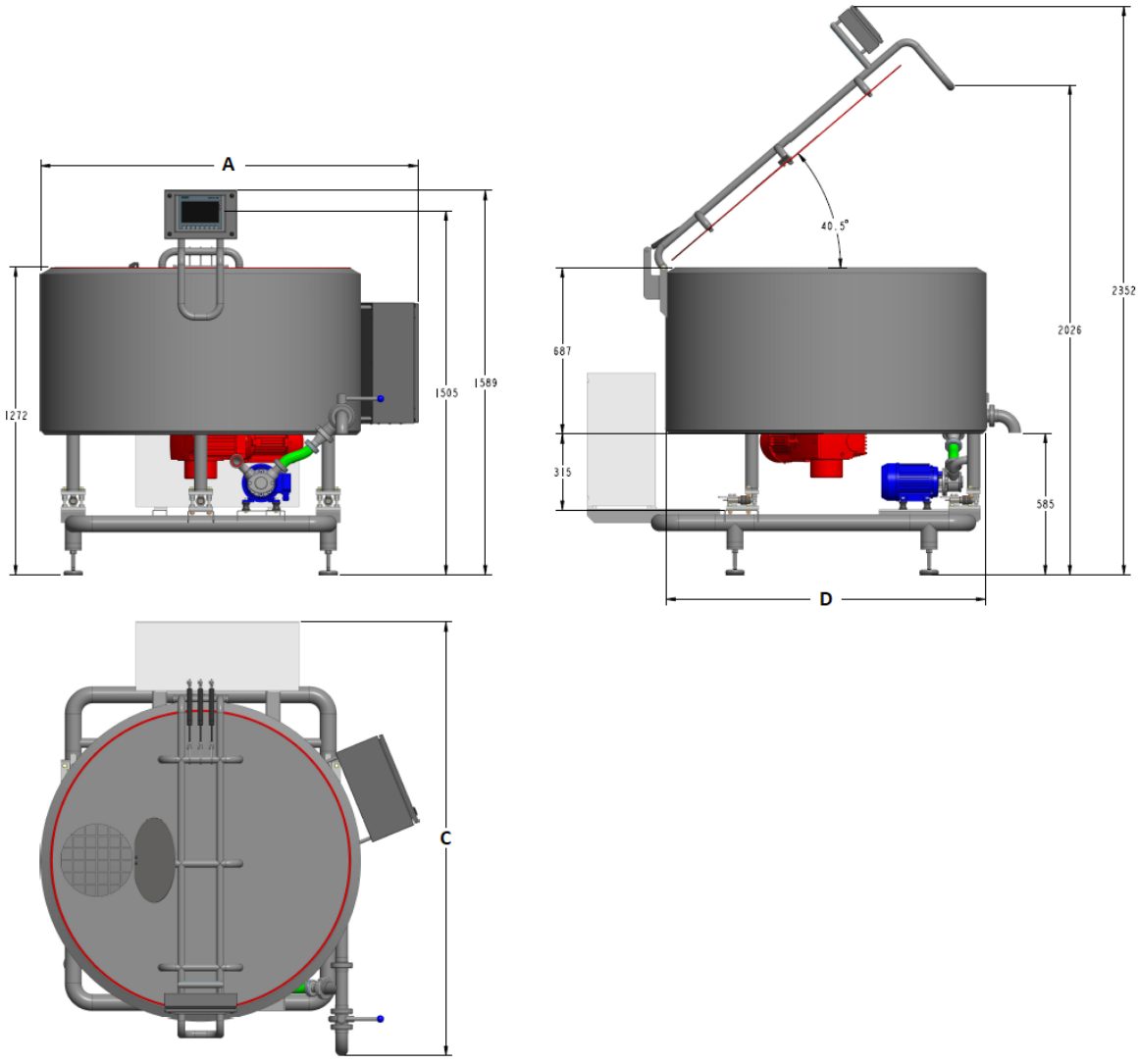
WHAT IS THE ADDED VALUE OF OUR TANKS FOR YOUR PRODUCTION?

- Stable technological parameters regardless of the quantity of material in the tank, the season and the mood of staff responsible for the production of sourdough.
- Compact modular construction.
- Easy disassembly of the mixer facilitating cleaning and adaptation of the device.
- Ease of keeping the device clean. Only 10 minutes and one operator with a pressure washer is enough to clean the device.
- Quiet and reliable operation.
- Clear, simple operation.
- Low energy consumption.

Photo 3. BIO-FM-ECOLINE-650 with a heating/cooling system built-in on a common frame

AVAILABLE CAPACITIES OF THE TANK AND DIMENSIONS OF THE DEVICE

Type	Capacity	Loading	Mixer power	Cooling/heating power	A	D	C
BIO-FM-E-650	650 L	60–400 kg	1.5 kW	3.5 kW	1560	1322	1794
BIO-FM-E-1000	1000 L	80–650 kg	2.2 kW	5.5 kW	1760	1522	1994



EQUIPMENT OPTIONS		
1	Control based on Delta components	Standard
2	Heating/cooling system operating on the R32 refrigerant	Standard
3	Frame mixer equipped with teflon-coated scrapers	Standard
4	Nord helical-bevel gearbox for the mixer drive	Standard
5	Control based on Siemens components	**Option**
6	A set of Rittal stainless cabinets for the operator panel and the control system (only in the option with the Siemens controller)	**Option**
7	Dosing and formulation system	**Option**
11	BIO-WT-MX water mixer	**Option**

There is a possibility to equip the device with lobe pumps, screw pumps and to adapt the device to work with a dosing pipeline.

Cooling system may be installed directly on the frame of the device or on the wall. The distance from the tank should exceed 6 m, with the vertical distance of maximum 3 m.

WE LOOK FORWARD TO WORKING WITH YOU!

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