AGRIFLEX

Since 1975

Automatic fermenter

for natural liquid yeast

Introduction

Natural yeast (or sour-dough starter) is a mix of flour and water left to rise spontaneously in open air for a certain period of time, during which the micro-organisms in the flour, water and air reproduce and ferment, releasing compounds with excellent nutritional and aromatic qualities.

The traditional preparation of natural yeast (yeast-based starter) is quite a complex and delicate process influenced by environmental variability and the cleanliness of both the working environment and the equipment used, which can have a negative influence on the quality of the finished product, unless the right conditions are thoroughly respected.

Therefore, the experience, ability and skill of the baker are often not enough to guarantee the stability and effectiveness of the natural yeast in this fragile biological balance.

Agriflex has designed the FLN Automatic fermenter to prepare natural yeast without the need of an expert baker, there are 3 models available, with different capacities according to the customer's production requirements.

Models 300-500 litres **Model 120 litres**

Technical Data

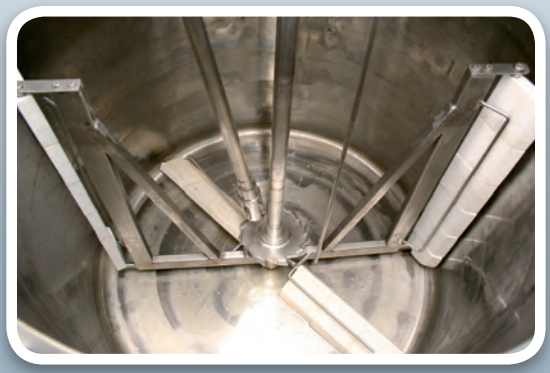
From a constructional point of view the Agriflex FLN automatic fermenter, can be described as follows:

- Useful yeast capacity

  100 L (Mod. 120 L)
  240 L (Mod. 300 L)
  400 L (Mod. 500 L)

- AISI 304 stainless steel body
- Scraper blade mixer
- Cowless type dissolver (Mod. 300 and 500).
- **Fully automatic system to control fermentation cycle with touch panel**
- Highly reliable temperature and pH sensors
- Safety microswitch on the lid
- Heat pump to regulate the temperature (cooling and heating)
- Outlet valve and minimum level (Mod. 300 and 500).
- Emptying valve
- Shower washer
- IP65 power board and interfaces

FLN 120



FLN 300-500

Functional Characteristics

The Agriflex automatic fermenter works in three functional stages:

MIXING:

The mother yeast is renewed by adding hot water and flour in the following ratio:

Mother yeast 20%
Water 40%
Flour 40%

The timed electric mixers blend the mix of water, flour and mother yeast for roughly 15 minutes.

FERMENTATION:

Once the 15 minutes of mixing are over, then starts the fermentation phase, its duration being in relation to the working cycle chosen by the operator among the following options:

- pH mode
- pH with heating mode
- time mode

The pH is monitored continuously by a probe that constantly measures the acidity of the dough, providing information on the activity of yeasts and bacteria. During the fermentation phase, a series of organic acids are released, including the main component which is lactic acid.

CONSERVATION

The natural yeast is ready once the fermentation phase is over: the refrigerator unit starts automatically and the yeast preservation phase begins, cooling the yeast to 8-12°C for up to 1-2 days without altering the properties or the performance.

During the mixing, fermentation and conservation phases, the natural dough is mixed automatically by the electric mixers to keep the chemical-physical characteristics homogeneous throughout the dough without an operator having to knead it.

Therefore, the Agriflex FLN automatic fermenter is faithful to the traditional process, reproducing, harmonizing and managing the same, automatically and to perfection.

Applications

AGRIFLEX

Breakfast bakery products - cakes:

Brioches, Croissants, Panettone (typical Italian Christmas cake) and colomba (typical Italian Easter cake)

Bread

Ciabatta, Toscano, Toast bread, Cereals, Brown, With raisins, Hot dog, Hamburger, Pitta bread, Campagnolo bread, Rye bread, French stick, German style, Pizza base, Focaccia.

QUALITATIVE AND TECHNOLOGICAL ADVANTAGES

- Relaxing action on the dough
  improved elastic properties of the dough
- Improved softness and shelf-life of the finished product
- More regular crumb structure and thinner crust
- Improved resistance to mildew and stringy bacteria
- Enhancement of typical flavours and aromas
- Higher nutritious value of the finished product thanks to the protracted action of the bacteria and of the yeasts
- Reduction of the presence of phytic acid in wholemeal bread
- Reduction of intolerance effects towards beer yeast
- Lower quantity of cut-outs in rolled products
- Higher guarantee in the results and constancy in production quality

ECONOMIC ADVANTAGES

- Great reduction and possible elimination of beer yeast
- Elimination of additives
- Optimization and automation of the production phases (elimination of mother yeast)
- Reduction of working areas and equipments needed (elimination of “baskets”)
- Higher compliance with hygienic regulations
- Labour reduction
- Possibility to use unskilled labour (no need for the “yeast expert”)

ACHIEVABLE RESULTS

Today, products manufactured using natural liquid yeast present many remarkable advantages in respect to those produced using compressed yeast:

- The bread presents a higher degree of acidity, recognisable to the palate and particularly pleasing. It also creates an obstacle to the development of mould and gives the product a longer shelf life.

- The "Honey-comb" like internal structure of the bread, more commonly known as the crumb, becomes more uniform, finer and regular as a result of slower and more gradual production of carbon dioxide, which occurs as a result of longer fermentation process.

- The flavour and smell are lightly acidic and characteristic. For this reason products made with natural liquid yeast are recognised and appreciated for the unmistakable and fragrant aroma.

- Bakery products manufactured using natural liquid yeast are increasingly more digestible. The reason being that the micro-organisms contained in natural yeast transform complex dough substances into substances more simple and more easily absorbed by the body.

- The acidification of the dough encourages the destruction of phytic acids and certain other compounds present, particularly in wholemeal flour. Some compounds are considered "anti-nutritional" because they inhibit the intestinal absorption of iron, calcium and zinc.

Industrial Application

EXAMPLE OF SAVING THROUGH THE USE OF AGRIFLEX AUTOMATIC FERMENTER MACHINE

ORIGINAL RECIPE (daily production)

FLOUR:	20 TONS
BEER YEAST:	500 kg
LARD+ EXTRA VIRGIN OIL:	5% of flour
IMPROVER (such as PRIMA MADIA FRESH):	600 kg

RECIPE WITH NATURAL YEAST (daily production)

FLOUR:	20 TONS
BEER YEAST	250 kg
LARD+ EXTRA VIRGIN OIL:	5% of flour
IMPROVER (such as PRIMA MADIA FRESH):	300 kg
NATURAL YEAST:	8 TONS

SAVINGS

Savings in BEER YEAST: 250 kg PRICE of BEER YEAST: Euro 0.75/kg	€ 187,50
Savings in IMPROVER: 300 kg Price of IMPROVER: Euro 3.20/kg	€ 960,00
DAILY SAVINGS:	**€ 1.147,50**
MONTHLY SAVINGS:	**€ 34.425,00**
YEARLY SAVINGS:	**€ 413.100,00**

Industrial Installations for the production of natural liquid yeast

For years, AGRIFLEX S.r.l. has been designing, building and installing industrial systems for the production of natural liquid yeast. These systems guarantee a product that respects the qualitative standards described.

A series of equipment provides the mechanical and thermal energy for preparing - dissolving, maturing and maintaining the yeast.

The quality and consistency of the characteristics are guaranteed, because the chemical-physical parameters of the process (temperature, time and acidity) are controlled.

The standard production unit consists of an insulated cylindrical tank, with a scraper blade mixer and a dissolver.
The system has one or more of these tanks, with various capacities.

The supply of water and flour, “hot” and “cold”, to meet the requirements, and the extraction of the product and transfer to the points of use, are all managed automatically though a PLC. Process parameters, access data, pH and temperature, recipes and percentages can be set on the operator panel or a process management PC.

Recipes With Agriflex Natural Liquid Yeast

CIABATTA

Farina .....Kg 40
Water .....Kg 26
Salt.....Kg 1
Improver .....Kg 0.1
Natural yeast .....Kg 20

Rest for 1.30 hours

FOCACCIA WITH EXTRA VIRGIN OLIVE OIL

Flour type “00” ..... Kg 40
Natural yeast ..... Kg 20
Water ..... lt. 18
Salt..... Kg 1
Extra virgin olive oil..... Kg 2.5
Beer yeast ..... Kg 0.5

Rest for 40’ then weigh and place in the baking tray.

BREAD STICKS

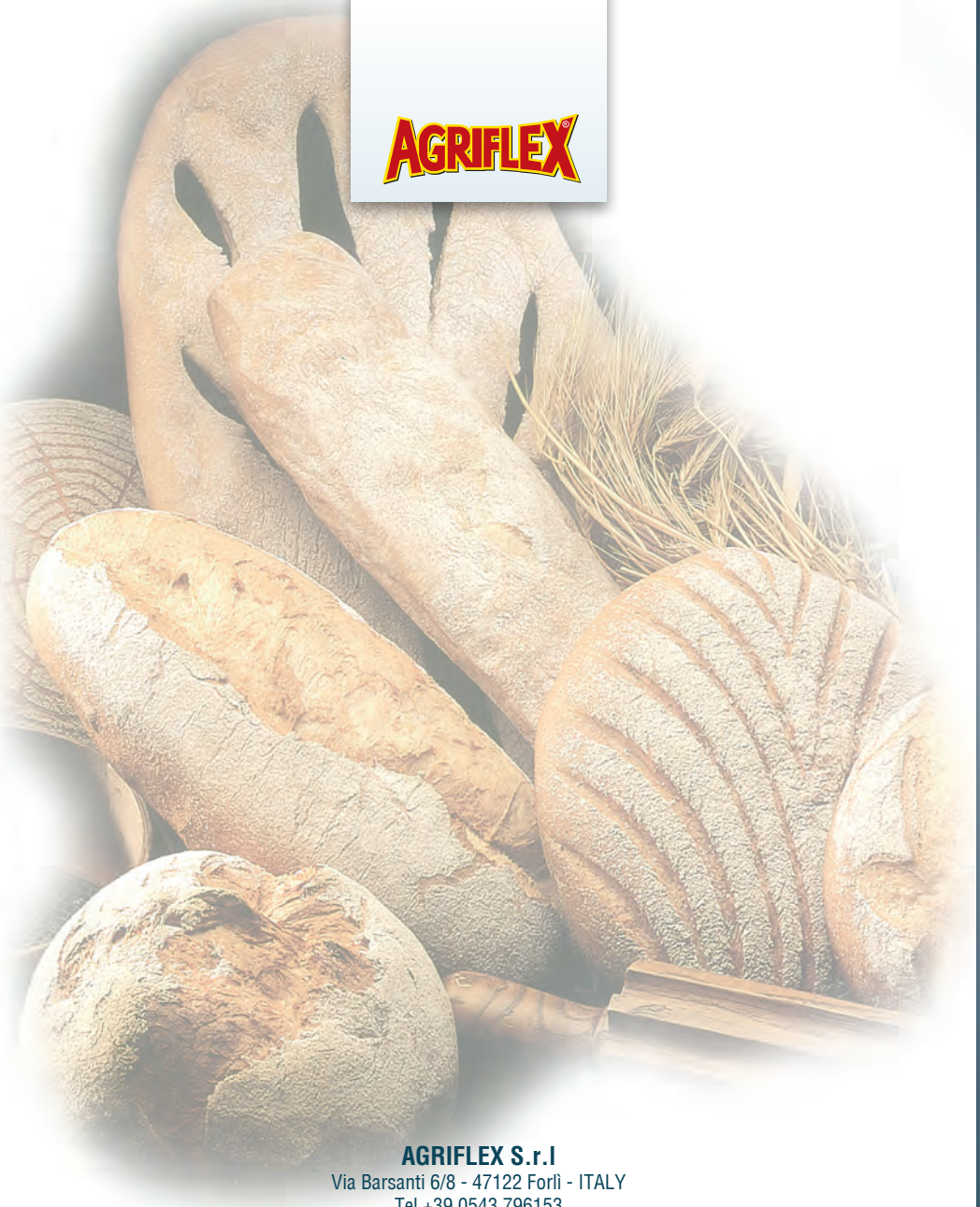
Flour type “0” ..... Kg 40
Natural yeast ..... Kg 20
Water ..... L 14
Extra virgin olive oil..... Kg 3
Palm oil..... Kg 2
Salt..... Kg 1
Emulsifier..... Kg 0.1
Beer yeast .....kg 0.3

TUSCAN BREAD

Flour.....Kg 100
Natural yeast .....Kg 40
Water .....L 57
Beer yeast ..... kg 0.500

FETTE BISCOTTATE

Flour type “0” .....Kg 40
Natural yeast .....Kg 20
Water .....L 16
Margerine.....Kg 1.5
Salt.....Kg 1
Glucose.....Kg 1.5
Liquid lecithin .....Kg 1
Honey.....Kg 0.800
Improver .....Kg 0.2
Antioxidant.....Kg 0.1
Beer yeast ..... kg 0.75



AGRIFLEX S.r.l
Via Barsanti 6/8 - 47122 Forlì - ITALY
Tel.+39 0543 796153
Fax + 39 0543 725152
www.agriflex.it
info@agriflex.it