FULLY AUTOMATED VINEGAR PRODUCTION PLANT 50, 100, 300 ORAZ 600 LITERS

Easy production of the highest quality vinegar in a few days using the latest technology.

Thanks to the presented device, vinegar production is very simple and fully automatic. The production process takes place in a bioreactor (vinegar fermenter), in which continuous aeration of the mash and temperature control are ensured. For the production of excellent vinegar, we can use wine, fruit musts, especially apple musts, and beer of inferior quality. Vinegar is made by the acetic fermentation of alcohol.

We distinguish between spirit vinegar - resulting from the fermentation of spirit (after dilution to an appropriate concentration), and wine vinegar - resulting from the fermentation of wine. Wine vinegar - depending on what the wine is made of - can be white or red. The balsamic vinegar produced in the vicinity of Modena in Italy is very well known, with an exceptionally intense wine aroma and mild flavor. Often used are vinegars made of wines and fruit musts (e.g. apple cider vinegar), which to some extent retain the taste, especially the aroma of the fruit, and are especially valuable as a seasoning for salads.

Advantages of the device:

Fermentation takes place in a very short time,
Made entirely of stainless steel,
Temperature control, coil shaped heat exchanger,
Very efficient, self-aspirating aerator,
Available capacities: 50, 100, 300 and 600 liters. What about 6 l ??

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Fermenters SF50 / SF100 / SF300 / SF600 bioreactors for the production of the highest quality vinegars and laboratory applications

The device is designed for the production of vinegar with an acidity of up to 15%.

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Fermenters, SF50 / SF100 / SF300 / SF600 bioreactors for the production of the highest quality vinegars and laboratory applications

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Depending on the tank capacity, the fermentor has the following annual capacities (assuming 10% vinegar acidity):
SF50 - up to 8,000 liters,
SF100 - up to 16,000 liters,
SF300 - up to 47,000 liters,
SF600 - up to 94,000 liters.

Semi-batch production of fruit / alcohol vinegar is a fermentation process in which 1/3 of the fermented liquid is drained after reaching a residual alcohol content of ~ 0.3% and replaced with another batch of wine, must.

Alcohol concentration can be measured online by the ALCOCONTROL on-line system (optional extra charge).

Cooling:
As acetic acid fermentation is an exothermic process, cooling is one of the process steps. For the proper operation of the device, an ice water generator (chiller) with the capacity (cooling capacity) is required:

SF50 - 0.5 kW
SF100 - 0.9 kW
SF300 - 2.8 kW
SF600 - 4.7 kW

Note: The chiller is not included in the scope of delivery.

Tank material: AISI 304 stainless steel

Dimensions:
SF50
Diameter: 340 mm
Height: approx. 1070 mm
Working capacity: 50 liters
Total capacity: 70 liters

SF100:
Diameter: 430 mm
Height: approx. 1,310 mm
Working capacity: 100 liters
Total capacity: 140 liters

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SF300:
Diameter: 640 mm
Height: approx. 1,840 mm
Working capacity: 300 liters
Total capacity: 430 liters

SF600:
Diameter: 850 mm
Height: approx. 2000 mm
Working capacity: 600 liters
Total capacity: 860 liters

Cooling coil: AISI 316Ti / AISI 316L stainless steel material.
Maximum temperature of cooling water at the entrance to the fermenter max. 15 ° C.

High performance aerator

Oxygen transfer and distribution are the most important factors in the vinegar fermentation process. Intensive mixing of air, alcohol, water and nutrients and even distribution of this mixture throughout the working volume of the fermenter are the basic principles of modern and efficient vinegar production. The oxygen supply and distribution is based on the carefully designed aerator architecture, consisting of a hydrodynamically optimized rotor structure. The aim is to introduce as many small air bubbles as possible into the fermenter, thus achieving perfect aeration and even distribution of the mixture.

Aerator motor power:

SF50 / SF100: 0.18 kW, 1450 rpm
SF300: 0.38 kW, 1450 rpm
SF600: 0.75 kW, 1450 rpm

Fermenter control and measurement equipment - control cabinet made of stainless steel with a SIEMENS PLC controller, a touch panel and CETO-SEMI software for the Semi-Batch process. Using the software beyond the touch panel is comprehensive and simple, so you can master it effectively in a very short time.

During the fermenter operation, the following information is displayed on the PLC panel:

- Temperature
- alcohol concentration (with ALCOCONTROL)
- Filling level
- Process status (fermentation phase)
- Alcohol degradation rate (alcohol% / h with ALCOCONTROL)

The following functions are controlled by PLC:

- Temperature control
- The fermentation cycle
- Error messages

Fully automated control of the acetic acid fermentation process in combination with the Alcocontrol system only.

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