Raw material storage

Only high-quality raw materials which are regularly inspected by Nutrex and sourced from selected suppliers can guarantee premium vinegar. Raw materials comprising pure alcohol, wines, juices and fresh herbs have been used to produce delicious conventional vinegar for more than 60 years, and organic vinegar for more than 15 years.

Liquid raw materials such as wine, juice and alcohol are delivered to Busswil in tankers. Before the truck is unloaded, we take a sample to check that the delivered goods meet our quality guidelines. Only then is the load transferred to a tank using a pump. The goods are stored as raw materials until the fermenter has the necessary capacity.

Fermentation

Fermentation or fermenting are terms used to describe the conversion of organic materials by bacterial, fungal or other biological cell structures, or by an enzyme.

The three acetators form the core of our vinegar production system. This is where vinegar – based on red wine, white wine, cider and pure, high-proof alcohol – is produced using state-of-the-art equipment and the gentle submerged or acetator method. The initial phase of the conversion process can take up to eight days. The subsequent phase involves the continuous conversion of alcohol into vinegar. The bacteria are at their most effective during this phase. Conditions: Constant 30°C, oxygen supply and regular injection of alcohol to replace the vinegar produced. The percentage of oxygen, bacteria and input/output volume is precisely defined. The maximum level of acidity is approx. 12%. Regular lab tests ensure that the quality remains the same throughout the entire process.

Add ingredients and store

The varieties and quantities of herbs, aromas and spices to be added to the vinegar are detailed in around 40 different recipes. All ingredients are mixed together carefully in a special blending tank. Storing the vinegar allows it to take on the various flavours over time.

All the herbs used to produce our herb-flavoured vinegars are fresh. The herbal infusion is repeated for around eight weeks before the herbs are finally filtered out.
Microfiltration

There are two different ways of filtering vinegar – ultrafiltration and microfiltration. The main difference between ultrafiltration and microfiltration lies in the varying pore sizes and membrane structure. Nutrex uses microfiltration. The pore size is > 0.1 µm (1 micrometre (µm) = 0.001 mm). This is much smaller than in ultrafiltration. Microfiltration is a purely physical (automated) membrane separation method which is based on the principle of automated size exclusion. Vinegar particles which are larger than the membrane pores are retained. This produces a clear vinegar with no sediments or mother of vinegar. This microfiltration process is bypassed in the production of cloudy organic cider vinegar and so the cloudiness remains.

Complete and pasteurize the blend

The final ingredients, such as salt, sugar, honey, etc. are added right at the very end. The vinegar is analysed once more and approved for bottling by Production. The vinegar passes through the pasteurizer before being pumped along a ceiling pipe to the bottling facility.

A constant temperature of 65°C must be maintained for the duration of the bottling process.
Retail Bottling

The bottling machine for small receptacles destined for the retail sector comprises parts of various sizes. The machine can thus be easily customized to different bottle sizes by using different sized parts. It is also important to adjust the distance parameters and computerized data to suit the new receptacle. Distinctions are primarily made between different types of bottle and seal, colours, datemarking, self-adhesive or wet glue labels, boxes and pallet patterns. The bottling process for 0.25 l, 0.5 l (glass) and 1 l (PET) bottles is currently fully automated.

The bottling facility:

- is worth CHF 1.5 million
- is supervised by at least 2 people while in operation
- requires max. 50 flexible parts depending on the bottle type
- fills 5,000 bottles per hour on average
- runs for 10 hours a day, 9 of which at full power
- it takes min. 15 minutes / max. 5 hours for two people to reset the machine to a different format.
- a full clean takes around 5 hours.
Gastro bottling

Our semi-automated bottling facility allows us to fill bag in box containers. These containers comprise an inner bag and an outer box. The bags are equipped with a practical tap which helps the consumer to dispense the product while measuring the correct dosage. We mostly fill 3, 5, 10 and 15 litre boxes. This type of packaging goes to wholesalers. The amount of vinegar required per bag is entered into the computer in advance. The assembly of the boxes is fully automated. The filling of the bags is initiated manually. As soon as the required volume is reached, the machine switches off automatically and the lid can be sealed. The expiry date is also applied manually with a stamp.

Industry bottling

Depending on customers’ requirements, we will also supply vinegar in large receptacles such as canisters and containers. We will also deliver our product by tanker.

Sizes:

- Can: 5, 10, 12, 25 litres
- Barrel: 60 litres
- Container: 600 and 1,000 litres
- Truck: 10,000 to 25,000 litres
**Storage of finished product / transportation**

All pre-produced goods for retailers and wholesalers are stored here until they are sold. On average, the goods remain onsite for up to 3 weeks. Large receptacles such as 600 or 1,000-litre containers are only produced/bottled to order. All goods are delivered within 3 days of a customer placing an order.

Our warehouse:

- Maximum storage capacity: 1,704 pallets or over 1 million litres of vinegar
- Maximum turnover: 3-4 trucks carrying 31 pallets per day
- 50 different products
- 2 loading bays
- 3 forklift trucks