Wir begleiten Ihre erfolgreiche Getränkeherstellung

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Brennereitechnologie

Making liqueur from fruit

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- Processing recommendations for the enzymation and juicing of fruit and berries for liqueur production -

Technical information and instructions for use

Background:

Modern consumers have high **expectations** of the quality of fruit liqueurs:

- Bright, stable color
- Clarity
- Full flavor
- Harmony between sweetness. acidity and alcohol

It is correspondingly challenging to process the natural fruit product in such a way that it is suitable as an ingredient for making liqueur.
All fruits contain pectin, protein, minerals, oxidation-sensitive colors and tannins. Some fruits also contain vegetable starch. These are natural ingredients, some of which are very valuable from a nutritional point of view. Unfortunately, some of them, when mixed with alcohol and sugar, cause unpleasant phenomena called **spirit defects.** The most common are:

- Gelation
- Turbidity, sediment formation
- Browning
- Oxidation aroma

The professional processing of the fruit therefore consists, on the one hand, of extracting the valuable ingredients of the fruit in the best possible way, bringing them into the liqueur and keeping them there as stable as possible. On the other hand, undesirable causes of defects must be removed to a large extent, but so carefully that the natural aroma and color are not lost unnecessarily.

What role does the processing quantity play?

Processing small amounts of fruit into **liqueur as a hobby** is still quite easy because of the lower demands on the end product:
Since a slight cloudiness is not seen as a defect and years of shelf life are not required, you can limit yourself to the enzymatic breakdown of vegetable pectin.
This prevents the liqueur from gelling, which often occurs later. The only important thing is to do this before (!) adding the alcohol.
The additional removal of the cloudiness that almost always occurs in the finished product, caused by vegetable proteins and tannins, is also unproblematic in small quantities:
Experience has shown that just by waiting for the lees to settle, you can carefully peel off the bright, brightly colored liqueur from above after a few weeks of cool, dark storage.

For these reasons, we differentiate between hobby (household) and craft (e.g. wineries or agricultural producers with production and direct marketing) in the following processing recommendations.

Domestic processing:

- Crush soft-fleshed fruits, grind or mash hard-fleshed fruits, already:
- stir pectin-splitting enzyme into the mash (e.g. **Pectin-EX 100** granulated, 1-2 g/10 kg fruits, or: **Natuzym BE** liquid, 2-3 ml/10 kg);
- Stir 1-2 g **ascorbic acid** / 10 kg into the mash to stabilize the color;
- Mash overnight at approx. 15°C or
- Let stand at 40-45°C for 30 minutes;
- Juice the mash in the **hand press bag**;
- Check the juice for complete pectin breakdown using the **pectin test** (details in our Pectin-Starch-Glucan Test information sheet);

- Mix the juice with **invert sugar syrup** and **drinking alcohol** to make the liqueur;
- if the taste requires, harmonization by adding a little citric acid;
- If necessary, wait for cloud formation and sedimentation as described above;
- If desired, stir 10-20 g of **dry glucose** per liter into the plain liqueur to increase the viscosity.

Craftsmanship:

- Process fruits into a mash and heat to 40°C, already:
- in 100kg Mash 1,5 g **OENO-Tannin**, 10-15 g **Ascorbic acid** and 10-20 ml **Natuzym BE** mix in;
- Experience has shown that fruits containing starch (e.g. pome fruit, peaches, apricots) should be tested for the presence of starch using the **iodine starch test;** If the result is positive, also stir 20ml **Amylase GA 300** into the mash;
  After standing for 1-2 hours (and a negative **pectin test** in a juice sample), stir in approx. 2 kg of the filtration **cellulose CS-Cell 90** and let it swell briefly;
- Juice the mash in the hydropress;
- To precipitate protein, stir 150 g of **ALBEX bentonite** per 100 L of juice (pre-swollen according to the company's own product information) into the draining juice and stir occasionally
- after about 2 hours of silica sol-gelatine fining (for 100 liters of juice, add 30-60 ml of **SILOXOL plus** and 40-60 ml of 20% **liquid gelatin**) and another 1-2 ml of Natuzym BE;
- Leave the juice to clear overnight in the refrigerator;
- Remove bare supernatant the following morning;
- Allow the sedimented trub to drain or squeeze out separately after stirring in some **CS-Cell 90** cellulose and then feed the resulting juice together for further processing;
- Mix the juice with **invert sugar syrup** and **drinking alcohol** to make the liqueur; The desired sugar-acid ratio must be adjusted by diluting with water or adding **citric acid**;
- Liqueurs made from low-acid fruits gain significantly in freshness and fruitiness by adding a little citric acid;
- if desired, to increase the viscosity, stir 1-2 kg of dry glucose (powdered) or a little more glucose syrup (liquid) into 100 liters of liqueur;
- If the liqueur is not to be marketed naturally cloudy, as with all spirits, possible cloud formation must be awaited during several days or even several weeks of dark, cool storage before the filtration can be carried out successfully;
- in grape liqueurs, the precipitation of tartar crystals can be accelerated by cooling and inoculation with crystal tartar;
- Clear filter the cloudy liqueur (e.g. filter layers K700 and K100 one after the other).

Other Recommendations:

Taste harmony:
Taste adjustments to the sugar-acid ratio and the viscosity (full-bodiedness) should always be optimized in a small amount in a preliminary test. You will find simple methods in our range to determine the total acid present **(e.g. TITROVIN cylinder, TITROFIX system).**

Storage of excess juice:

If more juice is obtained than is necessary for the immediately planned amount of liqueur, it can easily be stored frozen in a canister or **bag-in-box** for later mixing into fresh liqueur. The shelf life of the frozen juice in terms of color stability and aroma is significantly better than that of the mixed liqueur.

Pectin cloudiness…
in the finished liqueur show up as a stubborn cloud. Preventing this problem as described by pectinolytic enzymation before adding alcohol is much easier than correcting it. Subsequent enzymation can sometimes be achieved at less than 25% vol within a few weeks using the powdered preparation N**atuzym FILTRATION MG** in a dosage of 10-15g/hl.

Liqueurs with a higher alcohol content could first be diluted with water or fruit juice to less than 20% vol, then enzymed for a sufficient period of time and finally fortified again with distillate and sugar.