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Brennereitechnologie

Honey brandy, honey / mead nectar

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- Legal aspects of spirits and recommendations for mash preparation and fermentation -

Technical information and instruction use

Legal requirements:
According to the Spirits Regulation (EU) No. 2019/787, **"honey spirit"**, category 11, is a spirit drink that meets the following requirements:

- Obtained exclusively by fermentation and distillation of a honey mash.
- The distillate from this mash clearly reveals the honey used in the aroma.
- Honey brandy may neither be extended with foreign alcohol nor flavored, but sweetened with honey to a maximum of 20g invert sugar/ L.
- The colouring resulting from possible wood barrel storage can be standardized with caramel.
- The minimum alcohol content of the finished honey brandy is 35 % vol.

The sales description "**honey nectar**" or "**mead nectar**", category 44, identifies spirits of the following characteristics, which are rarely encountered:

- Produced by flavoring a mixture of fermented honey mash (minimum of 30% in the final product) and honey distillate (or/and ethyl alcohol of agricultural origin).
- Flavoring with natural flavorings and flavor extracts, whereby the honey taste must remain predominant.
- Sweetened only with honey.
- The minimum alcohol content of the finished honey nectar is 22 % vol.

Exploitation rate for the amount of alcohol tax:
The current list of raw materials for the distillation of honey is based on an official yield of 9.3 liters of pure alcohol from 100 liters of fermented honey mash.

Mash preparation:
Marketable honey contains about 70%mas of fermentable sugars. Insufficiently dried honey with a slightly higher water content than 20% contains slightly less sugar, but still much more than a pure yeast could quickly ferment into alcohol.
In order to ferment honey reliably and completely, at least 2 liters of water must be added to 1 kg of honey. This solution is called honey mash.
Although adding more water improves the fermentability (fermentation, fermentation time and residual sugar-free fermentation) of the honey mash, it also increases the amount of mash and thus the tax burden (see "**Experience values for the fermentation process**" on p. 2/2 below).

Yeast, yeast nutrition and acidification: Honey mash is difficult to ferment due to its higher sugar content compared to fruit mash and its lack of yeast-usable nutrients. It also contains wild yeasts and undesirable bacteria.
For these reasons, we recommend the use of a particularly fermentable yeast (for example **Opti Fruit Plus**), a reasonable supply of nutrients and artificial acidification.
Honey distillation mashes intended for the distillation of "honey spirit" are ideally supplied with **distillation mash nutrient** and acidified to **pH3 with MS** or **PM acid**.
In contrast, a honey mash intended as a direct ingredient for "honey nectar" must meet the requirements for honey wine. This limits the yeast nutrition to nutrient preparations for winemaking (e.g. **ANCHOR Nourish**) and the acidification to a little citric acid. In Austria and Switzerland, on the other hand, acidification is permitted with the much more suitable must lactic acid.

Instructions for mashing honey:

- Dissolve (possibly previously warmed) honey in about 2.5 times the amount of water in the fermentation tank (example: 50 kg honey and 120 liters of water make 170 kg (approx. 155 liters) of honey mash);
- the honey mash should have a temperature of approx. 20°C and an extract (hand refractometer) of max. 22%mas; the fermentation tank should leave a rising space of at least 10% for the mash;
- Add fermenting dry yeast **Opti Fruit Plus** or **LT 8 plus** in a dosage of 20-30g/hl honey mash; stir the yeast into warm water at about 30°C beforehand and stir thoroughly into the mash after 10-20 minutes (when bubbles or foam begin to form on the yeast mixture);
- Acidify the honey mash according to the following table, supply with nutrients and, if necessary, protect against foaming; add **MS acid** directly, **PM acid** after pre-dilution in a little water (safety goggles!), the other powdered additives after dissolution in a little honey mash to the main quantity:

	Honey distillation mash (is distilled after fermentation)	**Honey mash / honey wine** (as an ingredient for honey / mead nectar)
Nutrient	**Fuel maize nutrient** (40-50g/hl)	**DAP** (max. 30g/hl), better: **Anchor Nourish** (Wine yeast nutrient preparation, max. 70g/hl) + evtl.
Acid	Acidify to pH 3.0-3.2 with mash protection ("**MS**") or phos-phoric-milk ("**PM**") **acid combination**	**Thiamin** (max.60**mg(!)**/hl) **Citric acid** (max. 300g/hl)
Defoamer	**SILICON Antischaum US** (3-5ml/hl)	

- Seal fermentation vessel airtight with **DUPLEX stopper** and **DUPLEX beverage protector** or fermentation tube, sealing liquid water or solution of double salt I+II in water;
- At a fermentation temperature of 18-22°C, a fermentation period of several weeks can be expected;
- Check completeness with the residual sugar test, distil fermented mashes as quickly as possible;
- If storage of the fermented mash for several weeks is unavoidable, sprinkle a little **glucose oxidase** (dosage: 0.5-1.5 g/hl) on the surface of the mash to protect against vinegar sting and seal the fermentation container airtight again.

Experience with the fermentation process:
Opti Fruit Plus ferments honey mashes prepared at a ratio of 1 kg of honey and 3 liters of water completely and without residual sugar to 12-13% vol. within about four weeks at 20°C. More concentrated mashes made from 1 kg of honey and 2 liters of water, on the other hand, ferment for up to two months and then contain over 16% vol. alcohol and about 10-15 g of fermentable residual sugar per liter. In order to facilitate fermentation, fermentation could be started with a lower honey concentration and then continued with the gradual addition of honey dissolved with relatively less water (principle of staggered "sugaring").

Note:
Our information sheet "**Honey wine (mead)**" contains legal provisions on fruit wines, the quality requirements and recommendations for the preparation of honey wines.

Literatur: Karl Stückler, Met - Honigweinbereitung (2013); Albrecht Pausch, Beiträge in der Kleinbrennerei 7/2019