Organic Raw Cone Hops

Certification Body: DE-ÖKO-006

General

Organic Raw Cone Hops (Cone Hops) are dried hop cones from organic cultivation. They are usually used for brewing to provide hop aroma or hop bitterness to beer. Its most important components are hop oils, bitter compounds and polyphenols.

The typical dosage point in the brewery is in the brew kettle, in the whirlpool of a brewery, or they are used for dry hopping at a later stage during fermentation or storage of beer.

It is recommended to store Organic Raw Cone Hops cold, dark and dry.

Product specifications*

Description	Dried and compressed with a round or oval shape
Color	Typically from light- to dark-green (depending on variety)
α-acids	Typically 2 - 20%, depending on variety and crop year
β-acids	Typically 1 - 16%, depending on variety and crop year
Hop oils	Typically 0.3 - 4 ml/100g, depending on variety and crop year
Moisture	7 – 12 %

* Further information on hop varieties is available at www.barthhaas.com

Process Specifications

Drying temperature: < 60° C (140 °F), depending on raw hop moisture content

Quality and food safety

Barth-Haas maintains quality management systems registered to the ISO 9001 standard, as well as food safety management programs based on internationally recognized (HACCP) principles. Please refer to our web site (www.barthhaas.com) for more information on our systems and programs.

Organic Raw Cone Hops come from 100 % certified organic cultivation, are specifically labelled and stored separately from normal Raw Cone Hops.

Product use

For efficient provision of bitterness, the Organic Raw Cone Hops should be added to the wort at the beginning or up to 15 minutes after the start of the boil. Utilization of α-acids into beer depends on the boiling system and conditions and is normally in the range of 20% - 30%. Added late into the boil, utilization of α-acids diminishes as the utilisation of the aroma improves giving a characteristic hop flavor in the beer. The quantity to be added is calculated using the α-acids content and the estimated utilization. For aroma, the quantity to be added should preferably be calculated using the oil content of the product.

Packaging

Organic Raw Cone Hops are usually packed in plastic bales, but depending on the amount of product, other packaging like plastic foils or aluminum foils can be used.

Storage and Best-by Recommendation

Organic Raw Cone Hops should be stored cool at 0 – 5 °C (32 - 41 °F). They are best used within 1 year after harvest. They should be stored cold, dark, and dry (they should not become wet).

Influence on Hop Quality During Storage and Shipment

Hop Product	Storage up to 30 °C	Cold Storage at 3 °C
Cones (3 months storage)	22 %	5 %
Pellets (1 year storage)	12 %	3-6 %

Tabelle 1: Decrease in α-acids in % relative at different storage conditions [1]

Shipping temperature	Losses in α acids
Up to 25°C	3-6 %
Up to 30°C	5-8 %
Up to 35 °C	6-10 %
> 35°C	Bis zu 15 %

Tabelle 2: Decrease in α-acids during overseas transport in % relative [2]

Analytical Methods

The determination of α-acids comprises three types of methods, the specific measurement of α-acids by means of HPLC, spectrophotometric or conductometric methods:

- α-acids can be measured by any of the following methods:
  - EBC method 7.5 - (α-acids as lead conductometric value (LCV))
  - ASBC Spectrophotometric method (Hops-6) - (α and β-acids)
  - By HPLC, using the current ICE standard, according to the EBC 7.7 method, or the ASBC method (Hops-14) - (α and β-acids)
- Hop oil concentration can be measured by:
  - EBC 7.10
  - ASBC Hops-13

Safety

If dust is generated, it is advisable to use a dust mask. Organic Raw Cone Hops are a combustible material. For further information please download the relevant Safety Data Sheet (SDS) from our web site www.barthhaas.com.

Technical support

We will be pleased to offer help and advice on the use of Raw Cone Hops in brewing.

E-Mail: Brewingsolutions@barthhaas.de

References

1. Biendl M, Engelhard B, Forster A, et al (2012) Hopfen: vom Anbau bis zum Bier. Hans Carl GmbH, Nürnberg
2. Forster A (2002) What happens to hop pellets during unexpected warm phases? Brauwelt Int 43–46