Organic Hop Pellets (Type 90 Pellets)

Certification Body: DE-ÖKO-006

CHARACTERISTICS

Organic Hop Pellets are a hop product added to the kettle to provide bitterness and a hop character that is indistinguishable from that achieved using raw hops. They can also be used post-fermentation for dry hopping. Organic Hop Pellets provide improved homogeneity, better storage stability and reduced storage/transport costs compared to raw hops. They produce a beer flavour which is not distinguishable from that produced from leaf hops. Supported by a long history of safe use in brewing, and in accordance with US FDA regulation 21 CFR 170.30(c) and 170.3(f), Organic Hop Pellets are generally recognised as safe (GRAS).

The Raw Cone Hops used for the production of Organic Hop Pellets are 100 % from Organic Hop Production in accordance with the country-specific legislation for organic production.

PRODUCT SPECIFICATIONS*

Description:	Cylindrical pellets of approx. 6 mm (0.24 inch) diameter, milled and compressed whole hops
Consistency:	A solid which normally breaks up into a powder
Colour:	Typically from dark-green to olive-green (depending on variety)
α-acids:	As in raw hops, depending on variety and crop year
β-acids:	As in raw hops, depending on variety and crop year
Hop Oils:	As in raw hops, depending on variety and crop year
Moisture:	7 - 12%

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

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 recognised (HACCP) principles. Please refer to our web site (www.barthhaas.com) for more information on our systems and programs.

Before Organic Hop Pellets are produced the equipment for pelletizing is cleaned and special parts – only used for organic hop pellet production – are installed to prevent contamination.

PRODUCT USE

For efficient provision of bitterness, the pellets should be added to the wort at the beginning or up to 15 minutes after the start of the boil. Utilisation of α-acids into beer depends on the boiling system and conditions and is normally in the range of 30% - 35%. Added late into the boil, utilisation of α-acids diminishes as the utilisation of the aroma improves giving a characteristic hop flavour in the beer. The quantity to be added is calculated using the α-acids content and the estimated utilisation. For aroma, the quantity to be added should preferably be calculated using the oil content of the product. Pellets can be dosed automatically.

PACKAGING

Pellets are packed in laminated foils with an aluminium layer as a barrier against diffusion of oxygen. They are sealed under inert gas and packed. The foil material used meets all food industry packaging regulations. The residual oxygen content in the foil packs is less than 2% by volume. Pack sizes are available from 2-20 kg and also 90 an 140 kg.

STORAGE AND BEST-BY RECOMMENDATION

Type 90 Pellets should be stored cool at 0 – 5 °C (32 - 41 °F). Pellets are best used within 3 years after processing. If stored at –20 °C (-4 °F), pellets should be used within 5 years. Foils, once opened, should be used within a few days to avoid deterioration of bitter acids and essential oils.

HOP DETERIORATION DURING STORAGE AND SHIPPING

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

Table 1: α-Acid losses in % relative during different storage conditions [1]

Shipping Temperature	Alpha Losses
Up to 25°C	3-6 %
Up to30°C	5-8 %
Up to35 °C	6-10 %
> 35°C	Up to 15 %

Table 2: Alpha-acid losses during overseas transportation 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 Hop Pellets 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 Organic Hop Pellets in brewing.

E-Mail: Brewingsolutions@barthhaas.de

REFERENCE

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 Organic Hop Pellets during unexpected warm phases? Brauwelt Int 43–46