



BNN Flavour Recommendation for the Organic Food Trade

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The use of flavours in organic food

Consumers expect that organic products are left in their natural state to the greatest possible extent. This also includes that only natural substances are used for flavouring. However, the use of flavours permitted for organic food often does not meet consumer expectations for food that's been left in its natural state. According to the EU Organic Regulation that has applied thus far, "natural flavours" are permitted and must come from nature, but not necessarily from food. They can be produced by enzymatic or microbiological processes from any source materials occurring in nature.

BNN Flavour Recommendation

BNN members therefore agreed in 2004 on a BNN Flavour Recommendation as a guideline exceeding the statutory requirements, stipulating that organic foods should be flavoured primarily using organic foods and organic flavouring preparations. Since then, the BNN Flavour Recommendation – with its clear categorisation according to quality – has set a high standard for the use of flavours in the organic food trade and creates transparency and guidance for all trade levels.

Application

For the manufacturing companies within BNN e.V., the Recommendation applies to the use of flavours and to their identification in master data portals such as Data NatuRe. The wholesale companies use the identifiers in their price lists in order to provide information. Organic food retailers benefit from this transparency when offering advice on the flavours contained in the products.

New organic legislation as of 1 January 2022: Approved flavours in organic foods

17 years after the BNN Flavour Recommendation was first established, also the new EU Organic Regulation (No 2018/848), which enters into force on 1 January 2022, introduces stricter criteria.

The new EU Organic Regulation (Regulation 2018/848 Annex II Part IV) stipulates that exclusively natural flavours or flavouring preparations obtained from food that, pursuant to the Flavour Regulation (Reg. (EC) No 1334/2008 para. 4) may be labelled as a natural flavouring from the

source material referred to (natural <X> flavouring), shall be used for the flavouring of organic food.

Therefore, at least 95 percent of the flavour component of natural <X> flavouring must derive from the source material referred to. Flavouring preparations include not only preparations but also essential oils, extracts and distillates.

These flavours, which are permitted for organic food, may also be used in conventional quality without requiring authorisation pursuant to Annex II Part IV 2.2.2. b) EU Organic Regulation (Reg. 2018/848). They are classified, however, as an agricultural ingredient and hence must not account for more than 5 percent (Regulation 848/2018, Article 30, paragraph 5 ii). A uniform definition has been introduced for the first time for organic natural <X> flavourings (refer to Definitions in Annex 1: Organic natural flavour from the source material referred to (natural <X> flavouring)).

Flavours described in Article 16 para. 5 and 6 Regulation (EC) No 1334/2008 shall not be used. This applies, for example, to natural flavours that are obtained from wood chips by means of microbiological processes.

Use of genetically modified organisms (GMOs) in organic food is prohibited, also in ingredients such as flavours. A conformity declaration for compliance with the GMO ban is required for the use of conventional flavours in organic food, as many special yeasts, fungi or bacteria that enable the production of numerous flavours or their auxiliary substances and additives are genetically modified. Similarly, organic food must not contain conventional flavours that have been treated with ionising radiation. The new regulation also prohibits the use of engineered nanomaterials.

Other foods, additives and auxiliary substances may be added to flavours for technical reasons. They act as carriers, solvents or diluents or fulfil technical functions, including as preservatives and antioxidants to increase the shelf life. The EU Organic Regulation does not contain any additional restrictions for the production of conventional flavours approved for organic products, beyond the restrictions on GMOs, ionising radiation and nanomaterials. This means, for example, that controversial carriers or extraction solvents (such as hexane or others) may be used.

Updated BNN Flavour Recommendation

As a rule, BNN's member companies reject the use of flavours for the imitation of source materials or for the rectification of quality deficiencies.

Only such products as are actually natural – such as organic food or organic flavouring preparations – should be used for flavouring.

In the opinion of BNN, preparations that are used for the flavouring of organic products should only originate from organic food or organic spices. Organic flavourings should preferably be used in each case. Care should be taken when using flavours of conventional origin to apply only suitable carriers and extraction solvents such as water, oil, alcohol, carbon dioxide or others that have been approved for the production of organic flavours (refer to Annex 3).



Flavour categories according to BNN

- 0** Organic food
- 1** Organic flavouring preparations, including organic essential oils
- k1** Conventional flavouring preparations, including conventional essential oils
- 2** Organic natural flavouring from the source material referred to (natural <X> flavouring)
- k2** Conventional natural flavouring from the source material referred to (natural <X> flavouring)
- X3** Flavours that should be avoided: Use of unsuitable carriers or extraction solvents and/or animal source materials in plant-based flavours

Labelling

The BNN Flavour Recommendation stipulates, in order to guarantee transparency for customers in the organic food trade, that manufacturing companies within the BNN should provide a precise designation of the flavour on the product and should state furthermore the flavour category in the product data (see above and in Annex 4). The Food Information Regulation (No 1169/2011) merely stipulates that flavours must be labelled in the list of ingredients. Only the indication “flavour” is required for compliance with the regulation, and an exact designation or description of the flavour is voluntary. BNN recommends labelling the flavour categories in the product range lists (cf. Annex 4 Declaration in the list of ingredients), on materials accompanying the product and on the internet (e.g. at Data NatuRe or Ecoinform). Doing so promotes transparency and enables customers to make individual, informed decisions when purchasing from specialist traders.

Wholesale companies within the BNN label the flavour category in their product range lists. If flavours from a variety of categories are used in one product, the lower category is always indicated. The use of conventional flavours is indicated furthermore in the product range lists by a “k” for conventional, i.e. “X” for the lowest flavour category. The field is left empty if no information is available concerning the flavour used or if the information is not relevant to the product (e.g. for most non-food products).



Annex 1:

Definitions and explanations

Flavour

A flavour is a product that is not intended to be consumed as such, but which is added to food in order to impart or modify odour and/or taste. Flavours include flavouring substances, flavouring preparations, thermal process flavourings, smoke flavourings, flavour precursors or other flavourings or mixtures thereof (pursuant to Article 3 (2) a) Regulation (EC) No 1334/2008).

Ready-made flavouring mixtures consisting of approx. 30 to 100 individual components are predominantly used for flavouring in the production of food. A distinction is made in this regard between “flavour components” and “non-flavour components”. Flavours usually consist of 10 to 20 percent flavouring and 80 to 90 percent other ingredients (e.g. carriers and solvents). The flavour components, so flavouring preparations, flavouring substances, smoke flavourings and such like, account for the actual odour and taste.

Flavouring preparations

Flavouring preparations include preparations, essential oils and extracts from fruits, herbs and vegetables. Flavouring preparations are products obtained from food by appropriate physical, enzymatic or microbiological processes.

They are obtained by physical (e.g. distillation, extraction, enfleurage or the addition of carbonic acid) or biotechnological (e.g. enzymatic, microbiological) processes. Unlike flavouring substances, they are not chemically defined substances, but mixtures of substances that have the same mixture of flavour components as the underlying source material. Essential oils are volatile mixtures of organic compounds possessing an intense taste and odour that are obtained from plants or plant parts and belong to the flavouring preparations (cf. ISO standard 9235). Only flavouring preparations that are obtained from food and may be labelled as natural flavourings from the source material referred to (natural <X> flavouring) are permitted for use in organic food.

Flavouring substances

Flavouring substances are chemically defined substances with flavouring properties. They may possess the same chemical structure as a substance that occurs in an animal or plant source material or consist of compounds that do not occur as such in nature. Flavouring substances can be divided into natural flavouring substances and non-natural flavouring substances (not approved for organic food).

Natural flavouring substances

Natural flavouring substances are chemically defined substances that occur naturally and have been detected in nature. They are obtained from plant, animal or microbiological source materials by appropriate physical, enzymatic or microbiological processes. This definition extends also to substances not originating in the product such as tree bark, slaughtered waste and other waste from food production. Natural flavourings can, in turn, be divided into “natural flavourings” and “natural flavourings from the source material referred to (natural <X> flavouring)”.

Natural flavouring from the source material referred to (natural <X> flavouring)

However, the restriction imposed by the new EU Organic Regulation (Reg. 2018/848) on flavourings that may be labelled as natural flavouring from the source material referred to (also called FTNS flavourings or natural <X> flavouring) means that such flavourings as are obtained from tree bark and slaughtered waste etc. are no longer permitted for use in organic food.

If the source material is referred to in natural flavours, (e.g. “natural strawberry flavour”), the flavour components must be obtained exclusively of by at least 95% from the source material referred to. The remaining 5 percent may consist of other natural flavouring substances, which are used to homogenise or round off the flavour. The remaining 5 percent may be flavours or flavouring substances

in other categories, e.g. also natural flavouring substances, that do not originate in the “source material referred to” – even if these flavours are used in organic food. In the case of labelling for consumers, either the food, the food category or the plant or animal source material can be named.

Organic natural flavouring from the source material referred to (natural <X> flavouring)

The new EU Organic Regulation (Reg. 2018/848) provides a first definition of organic flavours. In the case of an organic natural <X> flavouring, 95% w/w of the carrier and 95% w/w of the flavour component must be obtained from organic production. The stipulation that “all” flavour components and carriers of flavouring components must be obtained from organic production means that they must meet the requirements of the EU Organic Regulation. Up to 5% conventional components are therefore also allowed, provided they are used in accordance with the rules of the EU Organic Regulation. This applies to the flavour component as well as to the carrier.

Ingredients that are not obtained from agricultural sources such as water and salt as well as the additives which are marked without an asterisk in Annex V Regulation 2021/1165¹ are not included in the calculation. However, the percentage must not be calculated for both ingredients together, as the entire flavour component might otherwise be conventional.

Extraction

Extraction is the process of removing individual substances from solid or liquid source materials by means of solvents. For example, the process may use foods such as water and oil, but also chemical solvents such as ether or hexane in some cases.

Carriers

Regulation (EC) No 1333/2008 on food additives defines carriers as follows:

“Carriers” are substances used to dissolve, dilute, disperse or otherwise physically modify a food additive or a flavouring, food enzyme, nutrient and/or other substance added for nutritional or physiological purposes to a food without altering its function (and without exerting any technological effect themselves) in order to facilitate its handling, application or use.

Extraction solvent

Directive (EC) No 32/2009 defines extraction solvents as follows:

“Extraction solvent” means a solvent which is used in an extraction procedure during the processing of raw materials, of foodstuffs, or of components or ingredients of these products and which is removed but which may result in the unintentional, but technically unavoidable, presence of residues or derivatives in the foodstuff or food ingredient.

This means that natural flavouring substances and flavouring preparations are obtained, as well as by other means, by extraction with solvents. Suitable extraction solvents include, for instance, oil, ethanol, water or carbon dioxide.

¹ Editor’s note: Addendum of the legal act with designation unknown in July 21. New designation has also been updated in the following tables (as per: 05/10/2021).



Annex 2:

Overview – Changes introduced in Reg. 2018/848

Current classification of flavours according to EU Flavour Regulation (1334/2008) and EU Organic Regulation (834/2007, 889/2008 and 2018/848), as well as application of the BNN flavour categories.

Flavour							
Definition	Flavouring preparation Substance mixture		Natural flavours according to Art. 16 1334/2008				Other flavours
	- Flavouring Preparations - Essential oils - Extracts from fruit, herbs & vegetables		Natural flavours from the source material referred to (natural <X> flavouring, pursuant to Art. 16 (2) (3) and (4) of Reg. 1334/2008)		Other natural flavours pursuant to Art. 16 (3) (without 16(4)) & 16(5) & 16(6) of Reg. 1334/2008		
			2/3 ¹	k2/k3 ¹	3	k3	
Permitted according to EU Organic Regulation 834/2007 & 889/2008	✓		✓		✓		X
Old BNN flavour categories	1	k1/k3 ¹	2/3 ¹	k2/k3 ¹	3	k3	X
Example	Orange extract*	Orange extract	Natural orange flavouring*	Natural orange flavouring	Natural flavouring*	Natural flavouring	Flavourings
NEW: Permitted after EU Organic Regulation 2018/848 has entered into force	✓	✓ Must not account for more than 5%	✓	✓ Must not account for more than 5%	X		X
NEW BNN aroma flavour category	1	k1/X3 ¹	2/X3 ¹	k2/X3 ¹	X		X

¹ Special requirements must be met for aroma categories k1, 2 and k2, refer to p. 8

* = from controlled organic production



Annex 3:

Requirements and specifications for the BNN flavour categories

Category	Important statutory requirements		BNN requirements	
1	▲ ●	At least 95% of the agricultural source materials for both the carrier and the flavour component must originate in organic farming.	The additives, technical auxiliary substances, extraction solvents and carriers used must be approved for organic flavours. Additives, technical auxiliary substances and extraction solvents and, where appropriate, carriers must comply with Annex V to Implementing Regulation (EU) No 2021/1165. If the carriers are foods, they do not have to be listed in the Annex, but may be used in organic quality.	
k1			The additives, technical auxiliary substances, extraction solvents and carriers used must be approved for organic flavours. Additives, technical auxiliary substances and extraction solvents and, where appropriate, carriers must comply with Annex V to Implementing Regulation (EU) No 2021/1165. If the carriers are foods, they do not have to be listed in the Annex.	
2	■	At least 95% of the agricultural source materials for both the carrier and the flavour component must originate in organic farming.	The additives, technical auxiliary substances, extraction solvents and carriers used must be approved for organic flavours. Additives, technical auxiliary substances and extraction solvents and, where appropriate, carriers must comply with Annex V to Implementing Regulation (EU) No 2021/1165. If the carriers are foods, they do not have to be listed in the Annex, but may be used in organic quality.	Animal source materials must not be used in plant-based flavours. The remaining 5 percent of the flavour component, which according to the law does not have to originate from the source material referred to, must be obtained from plant-based source materials in the case of plant-based flavours.
k2			The additives, technical auxiliary substances, extraction solvents and carriers used must be approved for organic flavours. Additives, technical auxiliary substances and extraction solvents and, where appropriate, carriers must comply with Annex V to Implementing Regulation (EU) No 2021/1165. If the carriers are foods, they do not have to be listed in the Annex.	
X3				*

▲ = Regulation (EU) No 2018/848 stipulates that neither genetically modified substances nor substances produced from or by genetically modified organisms may be used in the production of flavours. Moreover, ionising radiation (Art.9 (4)) and engineered nanomaterials (Art. 7 (e)) must not be used in the production process.

● = Natural flavouring preparations are obtained from food through suitable physical, enzymatic or microbiological processes.

■ = At least 95 percent of the flavour component must be obtained from the source material referred to (according to Regulation (EC) No 1334/2008).

* = Flavours that are still permitted for use in organic food on a transitional basis pursuant to Article 60 Regulation (EC) No 848/2018 fall into category X3.



Annex 4:

Declaration in the list of ingredients

This table contains the BNN aroma categories and the possible declaration of the specific flavour in the list of ingredients.

Category		Recommendation	Labelling examples according to the BNN Full ingredients declaration	Special requirements of BNN
0	Organic Food	Recommended unconditionally	Orange peel* Vanilla pulp*	-
1	Organic flavouring preparations	Highly recommended	Orange extract* Cinnamon oil*	-
k1	Conventional flavouring preparations	Can be used if no organic flavouring preparations are available	Orange extract, herbal extract (thyme, oregano, marjoram)	<ul style="list-style-type: none"> Processing is carried out in accordance with Annex V to Implementing Regulation (EU) No 2021/1165 Authorised processing aids, additives, extraction agents and carriers
2	Organic natural flavouring from the source material referred to (natural <X> flavouring)	Permitted conditionally	Natural orange flavouring* Natural raspberry flavouring*	<ul style="list-style-type: none"> Animal source materials must not be used in plant-based flavours
k2	conventional natural flavouring from the source material referred to (natural <X> flavouring)	Can be used if no organic flavouring substances are available	Natural orange flavouring Natural strawberry flavouring	<ul style="list-style-type: none"> Processing is carried out in accordance with Annex V to Implementing Regulation (EU) No 2021/1165 Authorised processing aids, additives, extraction agents and carriers Animal source materials must not be used in plant-based flavours
X3	All remaining flavours that do not fall into categories 0 to k2	Must be avoided	Natural peach flavour	<ul style="list-style-type: none"> All additives according to (EU) No. 1333/2008 are possible for conventional flavours. Animal source materials are possible in plant-based flavours. Flavours that are still permitted for use in organic food on a transitional basis pursuant to Article 60 Regulation (EC) No 848/2018 fall into category X3.

* = from controlled organic production