

EFFA Position on Vanilla extracts

Vanilla beans are extensively used in the flavourings industry as a source material for the preparation of vanilla extract. Vanilla is a very complex flavour: its chemical composition may vary depending on the species used, geographical origin, weather conditions and time of harvest.

Vanilla extracts are exclusively¹ obtained by extraction of Vanilla beans with the use of suitable authorised extraction solvents,² to the exclusion of any other sources. They answer to the definition of flavouring preparations as laid down in Art. 3(2)(d) of the Flavouring Regulation (EC) 1334/2008 and as such the EFFA Guidelines on the Flavour Regulation are applicable to them to their full extent.

The complexity of vanilla extracts cannot be exclusively described via standard analytical methods (such as gas chromatography). Appropriate sensory testing with a trained sensory panel is decisive as well.

1. INTRODUCTION

Vanilla extracts are among the most popular aromatic products in the world, but come at the same time from an extremely limited resource. This situation may lead to tensions in the market. Through this document, EFFA reminds its membership how vanilla extracts are obtained according to the flavouring industry's good practices.

2. BACKGROUND

Vanilla beans are extensively used in the flavourings industry as a source material for the preparation of vanilla extract. Vanilla is a very complex flavour. It is produced in tropical and subtropical areas such as Madagascar and the islands of the Indian Ocean, Indonesia, Mexico, Tahiti, etc. Different species of Vanilla are available such as *Vanilla planifolia*, *V. madagascariensis*, *V. odorata*, *V. platyphylla*, *V. tahitensis*, etc. The diversity in terms of geographical origin and botanical species allow variations in the characteristics of the Vanilla beans existing on the market.

Cured vanilla beans show a great chemical complexity. More than 200 extractible chemical constituents have been identified, such as proteins, sugar, vanillin and other monohydroxyphenols, waxes, pigments, minerals, glycosidically bound substances. A large proportion of these substances are non-volatile.

¹ Any addition of non vanilla bean derived substances is not permitted and is misleading

² In accordance with Directive 2009/32/EC as amended

3. VANILLA EXTRACT

3.1 Definition

Vanilla extracts are exclusively¹ obtained by extraction of Vanilla beans with the use of suitable authorised extraction solvents², to the exclusion of all other sources. Vanilla extracts are therefore aromatic extracts in the sense of the ISO norm 9235 as well as flavouring preparations.

Vanilla extracts are composed of numerous constituents, many of them being tasty and odorous. All components which are naturally occurring in the vanilla beans such as intrinsic fruit water, as well as edible foodstuffs used during the extraction process, such as water, ethanol, or vegetable oils, may remain in the vanilla extract. According to the EFFA Guidelines, these constituents should be considered as components of the vanilla extract. These Guidelines also mention explicitly that the extraction solvents must be distinguished from carriers and / or other food compounds, which were added for technical reasons after the extraction (see also EFFA Guidance Document on the EC Regulation on Flavourings).

3.2 Flavour of Vanilla Extracts

The characteristic flavour of vanilla extract results from an interaction of the organoleptic impact of numerous constituents – be they volatile or non-volatile. Regarding the volatile substances, carbonyls, phenols, aromatic alcohols, acids, esters, aliphatic alcohols, lactones, aliphatic hydrocarbons, terpenoids, heterocyclic compounds and others, contribute to the characteristic flavour of vanilla. Among the non-volatile constituents, particularly tannins, polyphenols, free amino acids, resins, as well as glycosidically bound substances contribute to characterize the flavour of vanilla.

Studies have revealed that vanillin contributes just a small part of the organoleptic impact. Numerous other constituents as mentioned above also impact the complex flavour of vanilla.

4. QUALITY CONTROL OF VANILLA EXTRACTS

It should be emphasized that the results of analytical approaches cannot be considered as solely reflecting the quality of vanilla extracts. The quality of Vanilla extracts is established by sensory evaluation and instrumental methods such as Gas Chromatography coupled with Mass Spectrometry (GC-MS) and HPLC.

Sources of vanilla beans will always experience variance in their quality and consistency. The quality of a vanilla extract can be exemplified by appearance, flavour, soluble solid content and multiple constituents and not only vanillin content. Consumers demand vanilla products with balanced sensory properties and not exclusively analytical parameters.

The quality of vanilla beans may be subject to variance due to poor weather conditions or early harvesting. On these occasions a low level of vanillin can be observed in the beans and consequently in most of the extracts. With consideration of the aforementioned complexity of vanilla, extracts manufactured under these conditions remain of high interest for their sensory properties.

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