

# Fungi Add Flavour to Vanilla

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## Abstract

Vanilla is also a popular product in the cosmetic and pharmaceutical industries, where, among other things, it is used in perfumes and medicines. The vanilla orchid, which is grown in tropical locations like Madagascar, Indonesia and Mexico, is the only source of vanilla.

## Keywords

Vanilla • Fungi • Pharmaceutical industries • Biotransformation

## Description

Worldwide, the most popular flavour we know is vanilla. Vanilla is also a popular product in the cosmetic and pharmaceutical industries, where, among other things, it is used in perfumes and medicines. The vanilla orchid, which is grown in tropical locations like Madagascar, Indonesia and Mexico, is the only source of vanilla. It is not by seed that vanilla plants are propagated, but by cuttings. The plants are, as a result, genetically similar. However, the taste of vanilla can vary from plant to plant. The variations in taste are not only due to the growing conditions of the plants. There is also a position for the fungal endophytes that have nestled in the plant [1,2].

Since the 1920's, vanillin has been chemically produced. A biotechnological production method was introduced in the 1970's in which microorganisms manufacture lignin-based vanillin, a by-product of the paper industry [3]. With the help of micro-organisms, ferulic acid from a natural source is also converted into vanillin. Synthetic vanillin and biotech vanillin have a less rich taste than vanilla beans, but are much cheaper to produce. *Ceratobasidium spp.* mycorrhizal fungi, *Thanatephorus spp.* *Tulasnella spp.* and *Vanilla Porras-Alfaro* and *Bayman* were found to be associated with different species. Morphological identification followed by gene sequence analysis of the elongation factor demonstrated that several *Fusarium spp.* In Indonesia, they are present in vanilla plants. Vanillin precursor biotransformation is not limited to vanilla plants, but can also be achieved by micro-organisms. Vanillyl alcohol is produced from ferulic acid by *Pestalotia palmarum* grown in vitro on a synthetic medium supplied with glucose (Figure 1) [4,5].



Figure 1. Vanilla as flavor additive.

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