

Effluent vanilla

What we have in our food, in our beverages, in our cosmetics and fragrances, is a synthetic extract, which has copied the smell of vanilla and captured it in a bottle.

This smell has been harvested from, believe it or not, effluent waste of a paper mill or coal tar components used in petrochemical plants. Artificial vanillin was first synthesised in 1874 in Germany when scientists successfully replicated the chemical signature of vanillin (3-methoxy-4-hydroxy-benzaldehyde). In 1890, French chemists created vanillin from eugenol found in clove. Eugenol was the main source of vanillin till the 1920s. In the early 1900s, came the discovery of vanilla from paper mill waste.

In 1922, the Ontario Paper Company in Canada had no way to dispose off huge amounts of sulphite liquor laced with lignin, which was polluting nearby streams. Chemists found that this waste had something that smelled like vanilla and a counterfeit was born. Lignin, which binds together the fibres in wood, is the waste product in the process of paper making. To remove lignin from fibre, paper companies 'boil' wood with caustic soda. This waste, after the wood fibre is removed for paper making, is called black liquor or sulphide liquor. This is the worst effluent of a paper company.

The vanilla we love to eat in our food comes from this effluent waste of the paper mill. A method has been devised to extract vanillin from the lignin. In this, sulphite liquor is cooked and lignin is extracted from it. The lignin is then purified to get Lignin Vanillin also, known as USP Vanillin.

Then there is the petrochemical route. The petrochemical raw material guaiacol is a component of coal tar. Coal tar is chemically processed to replicate natural vanillin. It has a stronger flavour profile than lignin vanillin or natural vanillin. But this ethyl vanillin needs to be used in minute quantities as it might impart a harsh "chemical" character to food.



Source: Times of India – September 2007