

REVIEW OF FLAVOURING AGENTS USED IN PHARMACEUTICS

Dr. Dubey Somil*

Medical Officer, Pt. Khushilal Sharma Government Ayurveda College and Institute, Bhopal, M.P-462003.

*Corresponding Author: Dr. Dubey Somil

Medical Officer, Pt. Khushilal Sharma Government Ayurveda College and Institute, Bhopal, M.P-462003.

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ABSTRACT

The International Pharmaceutical Excipients Council (IPEC) defines excipients as any substance other than active drug or prodrug that is included in manufacturing process or is contained in a finished pharmaceutical dosage form. USP-NF lists 40 functional categories of excipients for pharmaceutical usage. One of the categories is Organoleptic compliance that impart flavour, colour to drug. Flavours are used to make medicine palatable. Again these flavours are classified based on their source as natural, artificial or natural and artificial (N&A). Present paper focuses on highlighting the important aspects of flavouring agents used as pharmaceutical excipients.

KEYWORDS- Excipients, Organoleptic compliance, flavouring agents.

INTRODUCTION

Excipients provide a gamut of required functions, from processing aids that increase lubricity, enhance flow ability, and improve compressibility and compatibility to agents that impart a specific functional property to the final drug.^[1] Excipients are defined as any substance other than active drug or prodrug that is included in manufacturing process or is contained in a finished pharmaceutical dosage form. An excipient interacts with the drug in the dosage form and or provides a matrix that affects critical quality attributes of the drug, including solubility, stability, and bioavailability.^[2] One of the categories of pharmaceutical excipients is Organoleptic compliance which includes flavouring agents, colouring agents and sweetening agents.^[3] Flavouring agents makes a medicine palatable. Flavouring agents includes multi-dimensional components involving subjective and

objective perceptions of taste, feeling factors and odour i.e. aroma. Aroma of drug is an important attribute to acceptability of drug as it is perceived first.^[4]

MATERIAL AND METHODS

Flavouring agents are classified as natural, artificial or natural and artificial based on their source. They are elaborated as follows

Natural agents- they are the first source for flavour, the flavourant must be extracted from the source substance. The methods of extraction can involve extrusion, solvent extraction, or distillation. Modern use of natural flavours is limited as they are unstable and their quality is unpredictable.^[5] Some of the common flavours are tabulated as follows

Table 1: Commonly used natural flavours.^[6,7]

S. No.	Name of the flavour	Source	Constituents
1	Anise	<i>Pimpinella anisum</i> (seeds)	Anethol
2	Cardamon	<i>Elettaria cardamomum</i> (seeds)	Limonene, cineol
3	Wild cherry	<i>Prunus serotina</i> (bark, small brances, twigs)	Prussic acid, Benzaldehyde
4	Lemon	<i>Citrus limonum</i> (fruits and rind)	d- α -pinene, camphene
5	Orange	<i>Citrus aurantium</i> (leaves and twigs)	d-limonene
6	Peppermint	<i>Mentha piperita</i> (flowering plant tops)	α and β - pinene

2- **Artificial flavours-** they are the mixtures of individual synthesized aroma chemicals that may be identical to natural flavours. These flavours are combined together in ratios that successfully emulate a natural aroma. Unlike natural flavouring agents, artificial flavours are usually stable, greater consistency.^[8]

3- **Natural and artificial flavours-** in N&A flavour systems, natural flavours are combined with artificial flavours to enhance flavour balance and fullness. Advantage of N&A flavours is the broad spectrum of flavouring agents from which the formulator can develop

entirely new flavour systems.^[9] Some of the commonly used N&A flavour agents are tabulated as follows.

Table 2: Commonly used N&A flavours.^[10]

S. No.	Name of the Ingredients	Flavour
1	Allyl benzoate	Cherry
2.	Allyl caproate	Pineapple
3	Anisyle alcohol	Anise
4	Cinnamaldehyde	Cinnamon
5	Eugenol	Clove
6	Geraniol	Rose
7	Musk ambrette	Peach
8	Neryl acetate	Raspberry
9	Santalyl acetate	Apricot
10	Yara yara	strawberry

CONCLUSION

Excipients are important aspect of pharmaceutical industry as they perform vital functions such as modulating solubility and bioavailability of drug, acting as anti-oxidants, suspending agents, emulsifier, modulating immunogenic response of drug.^[11] Oraganoleptic group of excipients enhances the acceptability and palatability of drug. Flavouring agents comprises both the vital components i.e. aroma and taste. Flavouring agents are classified based on their source as natural, artificial or N&A. Among these N&A are most commonly used as relatively small change in chain length of ingredients can have profound impact on flavour type by virtue of this property they provide broad spectrum of flavours.

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