Flavouring agents

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- Flavouring agents are usually used to mask the saline , bitter , sour , sweet taste sensations .
- Flavouring agent is required in order to increase the patient acceptance and are significant particularly in orally administered liquid dosage forms , chewable tablets of antacids , vitamins and antibiotics .
- Usual strength at which these agents used is 0.5 to 0.75 % .
- They are usually stored at 15-30 ° C with relative humidity of 45 % .
- The selection of the flavouring agents depends on taste of drugs and the age of the patient , for examples , children like sweet candy like preparations with fruit flavour but adults may prefer less sweet preparation with a tart .
- The elderly persons may have liking for wine flavour .

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- As an example , cocoa flavours are preferred for masking taste of bitter drugs ; citrus flavour is used to combat sour or acid taste of drugs ; and cinnamon , orange and raspberry flavour for saline taste drugs .
- The chewable or effervescent tablets need flavours as well as sweetening agents to improve patient acceptance .
- As the flavouring agents are often thermolabile and volatile , the time of incorporating them in formulations is critical .
- They cannot be added to formulation when hot .
- In case of liquid dosage forms these agents are added to the solvent or vehicle of the formulation in which it is most soluble or miscible .

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- The water soluble flavouring agents are added to the aqueous component of the formulation and poorly soluble flavouring agents are added to the alcoholic or other non - aqueous solvent of the formulation .
- In multi - component systems , the appropriate solvent level of the flavouring agent is essential to keep them in solution .
- Examples : Volatile oils such as cocoa , citrus , cinnamon , orange and raspberry , clove , fennel , orange , wintergreen oil , and rose , jasmine , and lavender are used as flavours .

Sweetening agents

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- Sweetening agents are used to impart sweet taste to the bitter pharmaceutical formulation .
- These agents need to be dissolved either when taken as solution or dissolved in saliva .
- It is used to impart acceptable taste to the oral formulation because all drugs for oral use may not have pleasant taste and often unpleasant taste is to be masked .
- **Sucrose :** Sucrose is soluble in water and is easily available in highly purified form
- It is physico - chemically stable at pH 4-8 .
- It is frequently used in conjugation with sorbitol , glycerin and other polyols which reduce the tendency of sucrose to crystalline .

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- **Liquid glucose :**
- Liquid glucose , also known as glucose syrup or confectioner's glucose , is syrup made from the hydrolysis of starch .
- It can also be made from potatoes and wheat , and less often from barley , rice and cassava .
- Glucose syrup contains varying amounts of glucose , maltose and higher oligosaccharides , depending on the grade , and can typically contain 10 % to 43 % glucose .
- Glucose syrup is used to sweeten , soften texture and add volume .

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- **Saccharin :** It is an artificial (synthetic) sweetening agent which is almost 500 times sweet as sugar but gives a bitter taste aftertaste .
- It is available as saccharin sodium and saccharin , calcium .
- Its main limitation is its carcinogenic property which makes it a secondary choice .
- **Cyclamates :** Sodium cyclamate is an artificial sweetener , 30-50 times sweeter than sucrose .
- It is often used with saccharin in a ratio of 10 : 1 to mask the off - tastes of both sweeteners .

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- **Aspartame :**
- It is the methyl ester of aspartic acid and phenyl alanine . It is hygroscopic in nature and thus has less stability in presence of moisture .
- **Sucralose :**
- It is a non - nutritive non - caloric sweetener .
- It is about 320 1,000 times sweeter than sucrose , twice sweeter than saccharin , and three times sweeter than aspartame .
- It is stable under heat and over a broad range of pH conditions and thus it is used for products that require a longer shelf life .