

LEARNING OUTCOMES

After watching this presentation, you will be able to;

1. Define Syrups, Elixir and Linctus
2. Compare Syrups, Elixir and Linctus
3. Explain their Formulation

SYRUPS

- Syrups are concentrated solutions of sucrose or other sugars to which medicaments or flavouring agents are often added.
- Syrups are classified as follows:
 - 1) Simple syrup
 - 2) Medicated syrup
 - 3) Flavoured syrup

SYRUPS

➤ **Simple Syrup:**

Simple syrup is concentrated solution of sucrose in purified water. The concentration of sugar is 66%w/w.

➤ **Medicated Syrups:**

Medicated syrups are aqueous solutions containing sugar and at least one water soluble active ingredient. The sugar concentration should be between 65-67%.

SYRUPS

Function of Syrups are as follows:

- Sweetening agent
- Good antioxidant
- Preservatives
- Demulcents and soothing agent
- Vehicles
- Syrups are used for formulating: Antibiotics Antitussive Antihistamines Sedatives Vitamins Analgesic/antipyretic

SYRUPS

× Advantages of syrups:

- It retards oxidation as it is partly hydrolyzed into reducing sugars such as laevulose and dextrose.
- It prevents decomposition of many vegetables substances.
- They are palatable.

SYRUPS

× Methods of preparation:

- × 1) By simple solution method
- × Ex. Simple syrup or ginger syrup
- × 2) By process of extraction
- × Ex. Tolu syrup
- × 3) Syrups made by chemical reaction
- × Ex. Compound syrup of ferrous phosphate

SYRUP

- ✧ **Reason:** Why simple syrup I.P. is considered as self preservative?
- ✧ Simple syrup I.P. contains 66.7%w/w sucrose which having high osmotic pressure which prevent the growth of bacteria, fungi and moulds which are the chief causes of decomposition in solution of vegetable matter.

SYRUP

Formulation additives of Syrups:

➤ **Sugar:** glycerol, mannitol, sorbitol

➤ **Antioxidants:** like BHT and sodium metabisulfite

➤ **Buffering agents**

➤ **Chelating agents**

➤ **Colouring agents**

➤ **Preservatives-** Parabens, benzoates

➤ **Acids**-citric acid to prevent recrystallisation

➤ **Flavouring agents** and flavour enhancers

➤ **Ethyl alcohol** (3-4% vol.)

ELIXIRS

Elixirs are sweet ,clear , pleasantly flavoured sweetened hydro alcoholic liquids intended for oral use.

Types:

- 1)Non medicated elixirs
- 2)Medicated elixirs

ELIXIRS

➤ **Medicated Elixirs:**

These elixirs mainly contains potent drugs such as, Antihistaminics, Sedative and hypnotics , antibiotics and Expectorant

➤ **Non Medicated Elixirs:**

They are used as solvents or vehicles for preparation of medicated elixirs.

Active ingredient is dissolved in a solution that contains 15 to 50% volume of ethyl alcohol.

ELIXIRS

× Adjuvant used in the formulation of Elixir:

1. **Vehicle**: It is prepared by using water, alcohol, glycerine, sorbitol, propylene glycol.

- Water is used to dissolve ingredients.
- Alcohol is used to dissolve flavouring agent.

2. **Adjunct**

- **Chemical stabilizer** - It is used to improve chemical stability

Ex . Citric acid is added to prevent darkening of elixir on storage.

ELIXIRS

- **Colouring agent** - It is used to give attractive colour

Ex..Coal tar dye, Amaranath, Compound tartrazine, Green S

- **Flavouring agent** - It is used to impart flavour

Ex. Black current syrup, Raspberry, Lemon, Orange syrup.

- **Preservative** - It is used to prevent growth of bacteria.

Ex. Propylene glycol, Chloroform water, Benzoic acid, Methyl paraben.

LINCTUS

- Linctuses are viscous, monophasic liquid preparation containing a high concentration of syrup intended to be sipped and swallowed slowly for treatment of cough.
- They contain medicaments which have demulcent , sedative , expectorant action.
- The vehicle used in linctuses is simple syrup.

LINCTUS

Reason:

Linctuses should be taken in small doses.

Linctuses should be taken in small doses, sipped and swallowed slowly without diluting it with water in order to have the maximum and prolonged effect of medicament

LINCTUS

× Formulation of Linctuses:

- **Vehicle:** Syrup like Tolu syrup, Invert syrup, glycerin etc is used
- **Chemical stabilizer:** Majority of Linctus are stable
- **Colouring agent:** coal tar dyes, such as amaranth, comp. tartrazine etc.
- **Flavouring agents:** Black current syrup , lemon syrup, Oxymel and benzaldehyde spirit are also used.
- **Preservative:** Benzoic acid , sodium benzoate or methyl paraben are commonly used.

DIFFERENCE BETWEEN SYRUPS AND ELIXIRS

Syrups	Elixirs
1. Alcohol is not necessary component	1. Alcohol is necessary component
2. More sweet than elixir	2. Less sweet than syrup
3. More viscous than elixirs	3. Less viscous than syrup
4. High Proportion of sugar	4. Less proportion of sugar
5. More effecting in masking the taste of drug	5. Less effecting in masking the taste of drug
6. May not be clear formulations	6. These are clear formulations