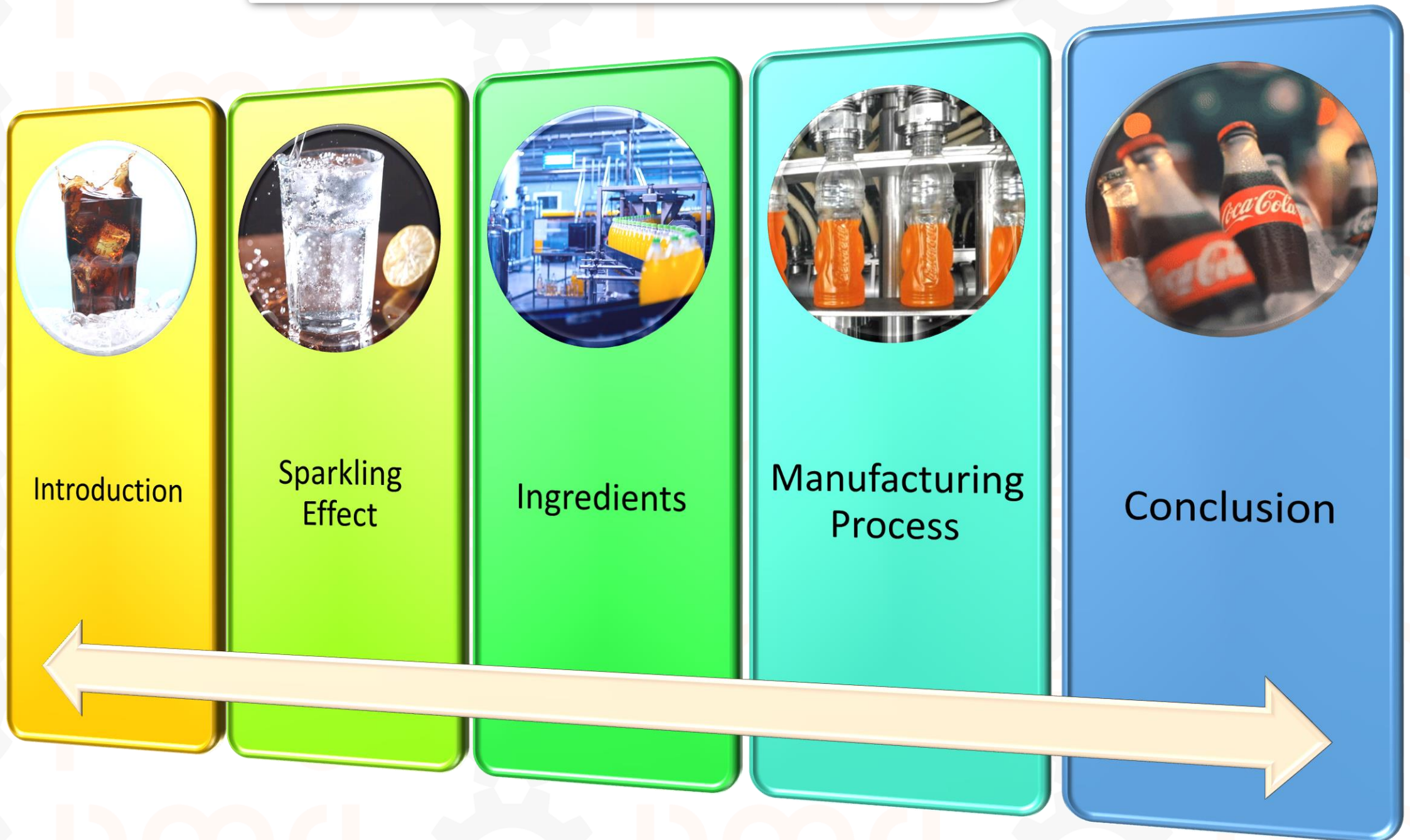




CARBONATED BEVERAGES

Agenda



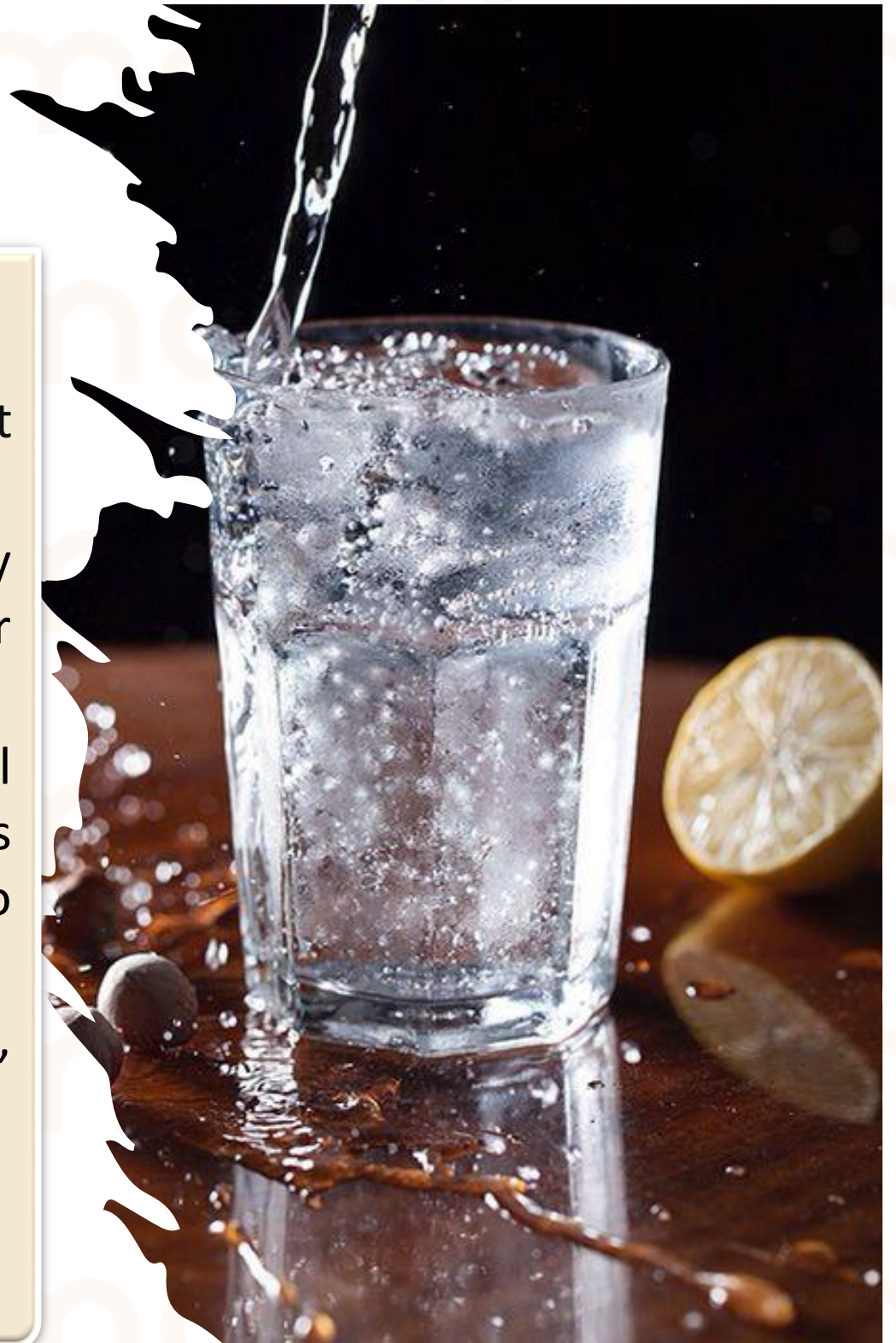
1. Introduction

- Carbonated beverages are those drinks that have carbon dioxide added to them.
- Carbon dioxide is a colorless and odourless gas.
- Usually, flavors and sweeteners are added to them to enhance their palatability.
- The water always has some amount of dissolved oxygen in it, but carbonated water is the one that is supersaturated with carbon dioxide.



2. Sparkling Effect

- The maximum amount of carbon dioxide that can get into the water is 8 grams per liter.
- The excess carbon dioxide will generally only stay in the water when the water is under pressure.
- Once the pressure is released (i.e., normal atmospheric pressure on the earth is restored), the carbon dioxide will start to escape.
- Giving the carbon some way to start escaping, which is the reason for the sparkling effect.
- It will, causing the beverage to go flat.



3. Ingredients

3.1 Water

- Major ingredient
- Must of very high potable standards.
- De-aeration of water is required: to facilitate carbonation and filling operations

3.3 Carbon dioxide

- CO₂ gas is inert, non-toxic, almost tasteless, and is easy to produce.
- It is soluble in liquids Many beverage manufacturers produce their own CO₂ on-site by using packaged systems.

3.2 Sweeteners

- The sweeteners impart flavour, improve the mouth feel, and adds calories to the beverage.
- Concentration of sugar varies between 8 to 14 percent in the finished beverage.

3.4 Acids

- Acids improve the flavour and also contribute towards the preservation of the beverage.
- Kola beverages mainly use phosphoric acid for preservation and taste.

3.5 Flavoring & Coloring agents

- The flavoring component has a major influence on the flavour of the final product.
- They are used at very minor amounts (0.01 to 0.02 %).

3.6 Emulsifiers & Stabilizers

- They are used to improve the stability of the solution, improve the appearance, etc.
- They should be added in appropriate proportion to ensure the quality.

3.1.3 Foaming Agents

- The presence of foams at the top of the bottle for some beverages like cola is considered desirable.
- The most effective foaming agents are saponins which are extracted either from the bark of Quillaia or Yucca trees.





4. Manufacturing Process



4.1 Syrup Preparation

- The syrup is usually prepared by mixing 1 part syrup to 3-6 parts (volume) water in stainless steel tanks fitted with agitators.
- In sugar-based products, syrup contains sugar syrup, citric acid, flavoring agents, preservatives, and water. It is initially heated to reduce the microbial load.

4.2 Mixing

- The syrup is pre-prepared, tested, and diverted to proportioner for mixing with water and carbonation.
- The syrup is dosed through a mass flow meter and the water dosing is done volumetrically





4.3 Carbonation and Chilling

- Carbonation is the impregnation of a liquid with CO₂ gas.
- The level of carbonation varies between 1 to 4.5 volumes of CO₂ per litre of beverage accordingly.

4.4 Bottle Filling

- Carbonated soft drinks are filled into either bottles or cans.
- Thick-walled, reusable, glass bottles were used for many years, but are being replaced by thin-walled, non-reusable glass and increasingly, PET bottles.

5. Conclusion

- Carbonated beverages were initially considered to have medicinal properties.
- Almost all the initial producers of carbonated beverages were associated with pharmacies.
- On May 8, 1886, a local pharmacist, produced the syrup for Coca-Cola.
- He carried a jug of the new product down the street to Jacobs' Pharmacy, where it was sampled, pronounced "excellent" and placed on sale for five cents a glass as a soda fountain drink. The rest is history...



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