ALMATY TECHNOLOGICAL UNIVERSITY

Preparation of the medium for the microbiological properties

Contens

1.Introduction

What is Culture Media?

2.Main part

Classification of the Culture Media

a) **Aerobic media**

b) **Aseptic Techniques**

3.Conclusion

Microorganisms need nutrients, a source of energy and certain environmental conditions in order to grow and reproduce. In the natural environment, microbes have adapted to the habitats most suitable for their needs. In the laboratory, however, these requirements must be met by culture media. A culture medium is basically an aqueous solution to which all the necessary nutrients have been added. Depending on the type and combination of nutrients, different categories of media can be made.

- Based on Oxygen requirement:

  -- Aerobic medium
  -- Anaerobic media

Classification of the Culture Media

- Based on the consistency

1. Liquid - Peptone water , Nutrient broth
2. Semisolid - Nutrient agar stabs
3. Solid - Blood agar , Serum agar

- Based on Oxygen requirement

1. Aerobic medium
2. Anaerobic media

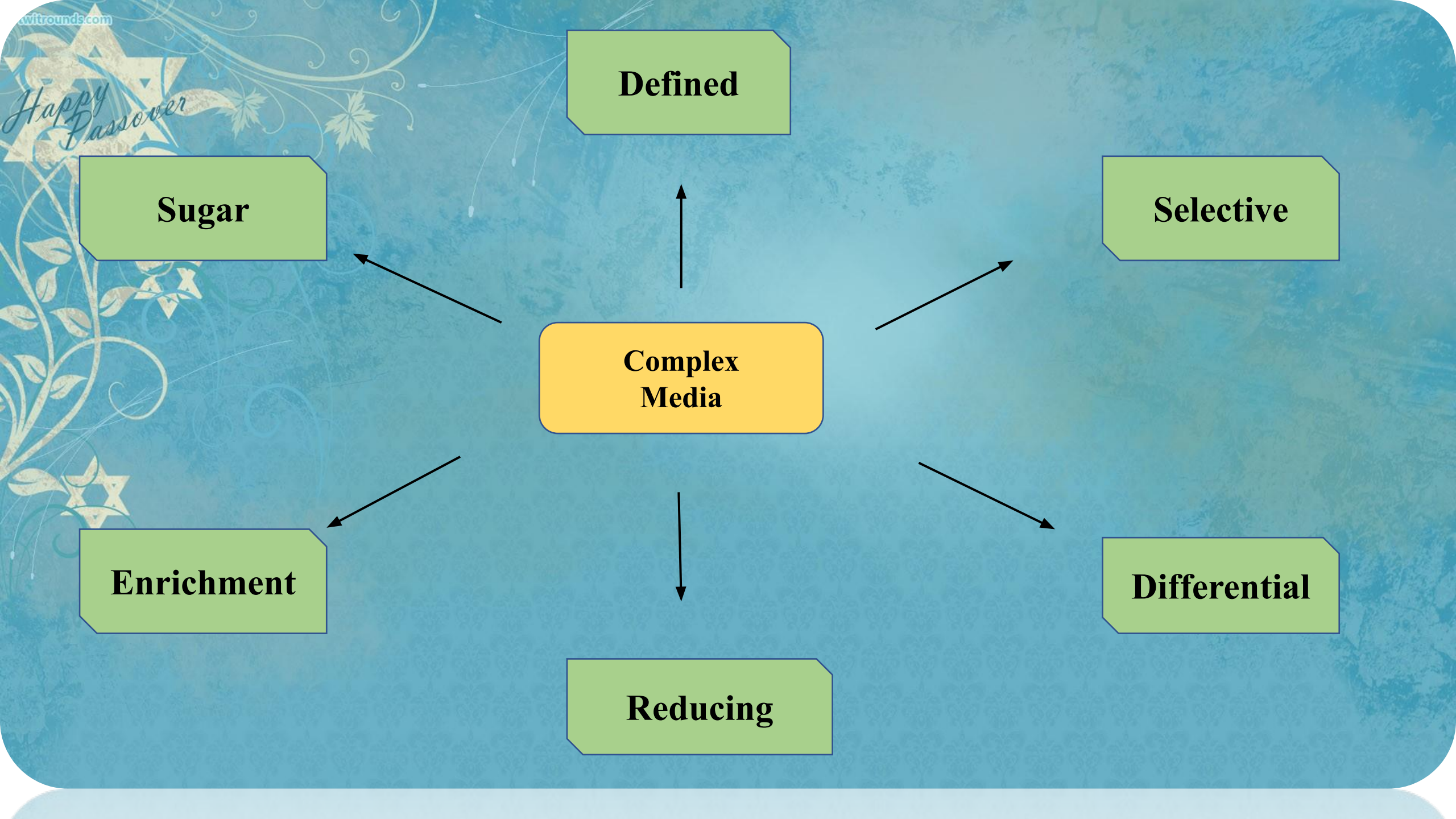
Aerobic media

Simple media- consists of only basic necessities

- Liquid media
  - Peptone water(1% peptone +0.5%Nacl + 100 ml water)
  - Nutrient broth (peptone water + 1% meat extract
- Solid media
  - Nutrient agar (nutrient broth + 2% Agar)

➢ Use: To grow non-fastidious microorganisms

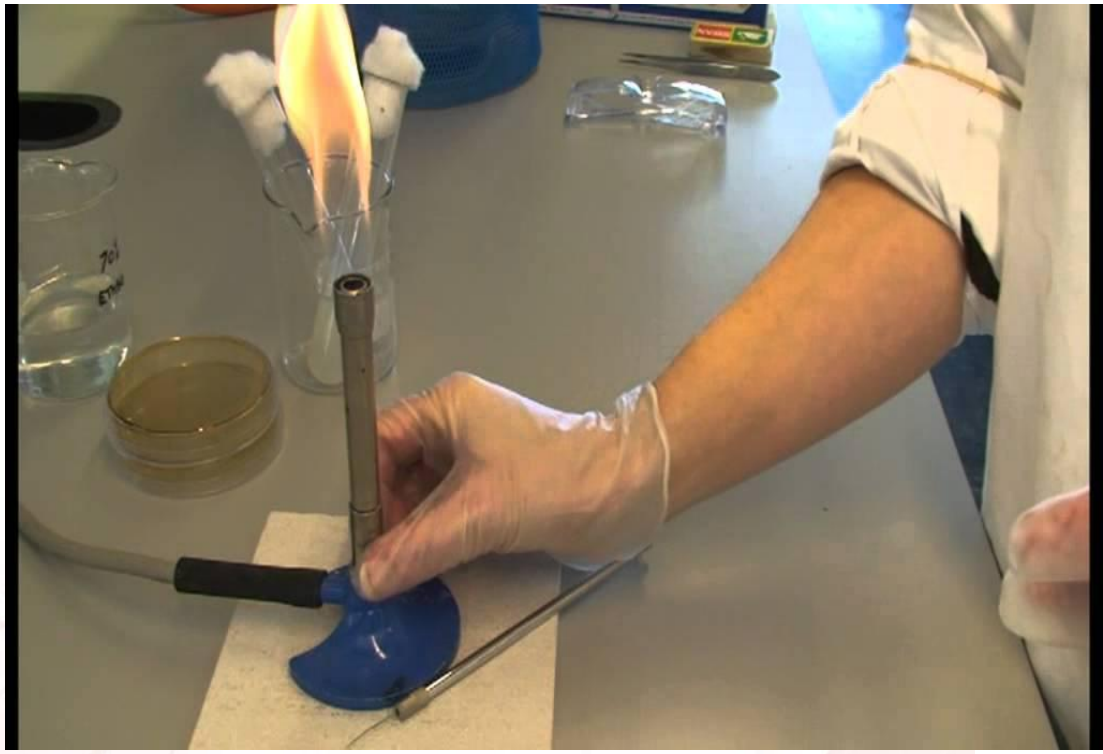
Aerobic media


Defined
Sugar
Selective
Complex
Media
Enrichment
Differential
Reducing

Media	Purpose
Defined	Grow specific heterotrophs and are often mandatory for chemoautotrophs, photoautotrophs and for microbiological assays
Selective	Suppress unwanted microbes, or encourage desired microbes
Differential	Suppress unwanted microbes, or encourage desired microbes
Enrichment	Simlar to selective media but designed to increase the numbers of desired microorganisms to a detectable level without stimulating the rest of the bacterial population
Reducing	Growth of obligate anaerobes

Blood agar

Chocolate agar



Before inoculation with the desired microorganisms, microbiological media and all materials coming into contact with it must be sterile. During any subsequent handling of the bacterial cultures, unwanted or contaminant organisms must be excluded employing aseptic techniques.

Sterilisation implies the complete destruction of all microorganisms including spores, this is accomplished by the use of heat, chemicals, radiation, filtration.

Conclusion

Properties of Media:

- Properties of Media:
  1) Support the growth of the bacteria.
  2) Should be nutritive (contains the required amount of nutrients).
  3) Suitable pH (neutral to slightly alkaline 7.3-7.4).
  4) Suitable temperature
  5) suitable atmosphere. (Bacteria grow at 37°C).
  6) Sterilized.

- *Note:* media are sterilized by autoclaving at 121°C and 1.02 atmosphere (15 p.s.i.) for 15-20 minutes. With the autoclave, all bacteria, fungi, viruses, and spores are destroyed. Some media can't be sterilized by autoclaving because they contain eggs or carbohydrates .

Literary reference.

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3. media preparation