INDO AMERICAN JOURNAL OF PHARMACEUTICAL RESEARCH

SHORT COMMUNICATION: RECAP OF ROLE OF NUTRIENTS IN FERMENTATION

Soma Ghorai[1*], Arijit Das[2]
[1]*Dhyaneswar Subodh College, Raghunathbari, Panskura, Purba Medinipur, 721634, W.B.*
[2]*Department of Pharmacology, Bharat Technology, Uluberia, Howrah – 711316, W.B.*

ARTICLE INFO

Article history
Received 15/09/2023
Available online
08/10/2023

Keywords
Fermentation;
Tetracycline;
Clavulanic Acid;
Riboflavin;
Alcohol Fermentation.

ABSTRACT

Aim of the present work is to provide a short communication on role of nutrients in fermentation. Aged food varieties or fermented products are acquiring prominence among customers for their conceivable helpful and high showcasing esteem and their gainful impacts are getting more obvious with aggregating results from clinical studies.After a comprehensive study the information provided in this article presents that in fermentation, nutrients playa beneficial role.

DOI NO: 10.5281/zenodo.8420114

Corresponding author
Arijit Das
Dhyaneswar Subodh College,
Raghunathbari, Panskura,
Purba Medinipur, 721634, W.B.
arijitdasar1995@gmail.com
ORCID NO - 0000-0002-8119-3451

*Please cite this article in press as **Arijit Das** et al. Short Communication: Recap of Role of Nutrients in Fermentation. Indo American Journal of Pharmaceutical Research.2023:13(09).*

INTRODUCTION[1-4]

Fermentation (Fig No. 1)[1] is a metabolic process that converts sugar to acid, gases, or alcohol. The conventional definition of fermentation is the breakdown of large molecules, for example, carbohydrates, into simple ones under the influence of microorganisms for their enzymes[2,3].In a microbiological way, fermentation is defined as any process for the production of useful products through mass culture of microorganisms[1,4].

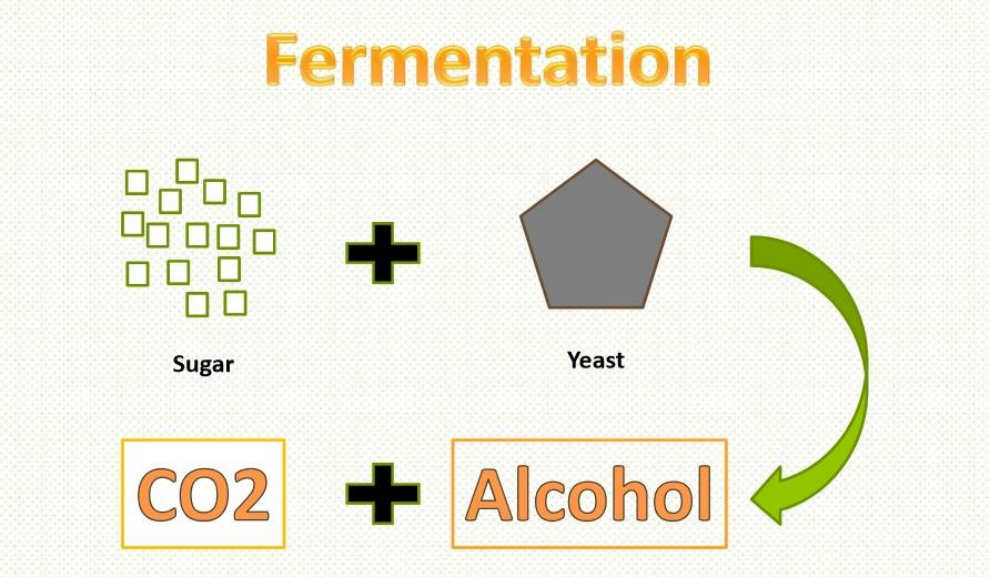

Fig No. 1: Fermentation.

Range Of Fermentation[5-7]

Fermentation has variety of ranges like to produce microbial cells or biomass. Then, to produce microbial enzymes followed by to produce microbial metabolites and also to produce recombinant products.For good countermeasures and readiness, a more substantial and more far-reaching outlook and progress are critically required.

Role Of Nutrients

In Case Of Antibiotics Production[8-11]

Tetracycline:

Commercially produced strains utilize sucrose, starch as cheap carbon sources. Starch being a polysaccharide is particularly suitable for prolonged fermentation of about 200 hours. Organic nitrogen sources include corn-steep, soyabean meal, peanut meal.

Clavulanic Acid:

Soyabean protein has been found to be most important nutrient for Clavulanic Acid biosynthesis. A suitable production of fermentation medium described consists of 1.5% soyabean flour,1% glycerol, 0.1% potassium di-hydrogen phosphate.

In Case Of Amino Acid [8,9,12]

L-Glutamic Acid:

The production medium contains a carbon source, a nitrogen source, and occasionally some vitamins and minerals. The most widely used source of carbon is glucose, the other sources of carbon like fructose, sucrose or some organic acid. Nitrogen source contents urea, ammonia, ammonium salts, peptones, meat extract or fish meal or some others compounds.

In Case Of Vitamins[8-15]

Riboflavin: Riboflavinmay be produced by a number of microorganisms including *Ashbya gossypii.*

Production by A. Gossypii:

The most widely used source of carbon is glucose and sometimes sucrose and maltose. Peptone and animal stick liquor are used as nitrogen source and corn steep liquor as plant protein source.

In Case Of Alcohol Fermentation[2,5,16,17]

Generally molasses contents most of the nutrient substances required for fermentation, however ammonium salts such as ammonium sulphate or phosphate are added to mesh to provided nitrogen and phosphorous supply.

CONCLUSION

The mechanisms underlying the beneficial effects of fermented foods are becoming more visible with accumulatingresults from clinical and animal studies. Fermented foods are gaining popularity among consumers for their possible therapeutic and high marketing value. It is concluded that in fermentation, nutrients plays one of the most important role.

Conflict of Interest
Authors do not claim any conflict of interest.

Source of Funding
Authors declare that there is no such funding related to this article.

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