



BrewTimes™

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BALAJI ENZYME & CHEMICAL PVT LTD

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wishes you

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Introducing BrewTimes :

We **M/s Balaji Enzyme & Chemical Pvt Ltd**, are pleased to bring to you our November 2023 month edition of BrewTimes.

We would like to use this platform to introduce our association with BetaTec, UK for their natural solutions for ethanol recovery in grain and molasses distilleries. The product is revolutionary and unlike any in the market is 100% natural and antibiotics free. Vitahop series of products helps in ensuring optimum yield and keeps the yeast healthy all naturally.

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About Our Company :

We **M/s Balaji Enzyme & Chemical Pvt Ltd** are a leading supplier of Enzymes, Filter aid, Yeast, Hops, Processing aids, Clarifiers and food fortification products to breweries, distilleries, malt extract industry, starch industry, juice and beverage industry, and other food industry.



ENZYMES' ROLE AND INFLUENCE IN OPTIMIZING BEER WORT PRODUCTION



BIJAY BAHADUR

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Chartered Engineer (India) PE (ECI); LMIChE; LMAFST (I)**

Introduction

Enzymes, catalysts that accelerate reactions without altering their nature, play diverse roles in beer production. Originating mainly from barley malt, these enzymes break down starch, components, and create new compounds. Extreme pH or temperature conditions lead to denaturation, rendering enzymes inactive. Barley embryo proteins contain enzymes, with malting enhancing their formation. α -amylase, absent in barley but present in malt, exemplifies specificity. Optimal conditions (pH, temperature) ensure efficiency, denaturation otherwise. Caramel malts suffer denaturation due to high heat. Pilsener malts boast ample enzymatic content. Key enzymes like amylases, proteases, and β -glucanase influence brewing. Amylases (α and β) concurrently convert starch to sugars around 60-70°C. Proteases split proteins by cleaving amino acids, releasing reserves. Over 40 proteases impact beer chemistry diversely. β -glucanase targets malt gums, lowering viscosity, and clarifying beer near 45°C. Low enzyme activity during mashing leads to extract, filtration, and flavor issues. External enzymes, adhering to regulations, offer varied characteristics and require tailored usage. Optimal enzyme conditions depend on brewery specifics. Protein coagulants enhance brew clarity. Examples encompass break bright enzyme.

Enzymes Optimize Wort Production for Beer

Enzymes play a crucial role in optimizing beer wort production by facilitating and accelerating the breakdown of complex carbohydrates, proteins, and other components in the malted barley. This breakdown process is essential to extract the maximum amount of fermentable sugars, proteins, and other compounds that contribute to the flavor, color, and mouthfeel of the final beer product. Let's explore how enzymes influence beer wort production:

1. **Mashing Process:** Malted barley contains starches that are not directly fermentable by yeast. Enzymes, particularly amylases, are responsible for breaking down these starches into simpler sugars like maltose and glucose during the mashing process. There are two main types of amylases involved:

- **Alpha-Amylase:** This enzyme breaks down starches into shorter chains of glucose molecules (dextrins). These dextrins contribute to the beer's body and mouthfeel.
- **Beta-Amylase:** This enzyme further breaks down the dextrins into shorter, more fermentable sugars like maltose. These sugars are easily consumed by yeast during fermentation.

2. Protein Modification: Enzymes also play a role in modifying proteins in the malt. Proteins can impact the clarity and stability of the beer. Enzymes like proteases break down proteins into smaller peptides and amino acids, which can help reduce haze formation and improve the stability of the final product.

3. Color and Flavor Development: Enzymes contribute to the development of color and flavor compounds in the wort. The Maillard reaction, a complex chemical reaction between amino acids and reducing sugars, is facilitated by enzymes during the mashing process. This reaction leads to the formation of various flavor and color compounds that give the beer its characteristic taste and color.

4. Enzyme Addition: Some brewers also use enzyme additives to supplement the natural enzymatic activity of malted barley. For example, exogenous enzymes like glucanases can help break down cell wall components, making the mashing process more efficient and improving extract yield.

5. Temperature Control: The activity of enzymes is influenced by temperature. Brewers carefully control the mashing temperature to achieve specific enzymatic reactions. Lower temperatures favor the activity of beta-amylase, producing more fermentable sugars, while higher temperatures promote the activity of alpha-amylase, creating more unfermentable sugars for body and mouthfeel.

Optimizing beer wort production involves carefully controlling the mashing process to achieve the desired balance of fermentable and unfermentable sugars, proteins, color compounds, and flavor precursors. Enzymes, both naturally present in malt and sometimes added externally, play a central role in achieving these goals. Brewer's expertise lies in manipulating enzyme activity through various factors, such as temperature and pH, to create a wort that sets the stage for a successful fermentation and ultimately results in a flavorful and high-quality beer.

Test results by adding β -glucanase enzyme

The role of β -glucanase in wort is to measure the viscosity resulting from different production methods. To compare, viscosity is assessed at 45°C and 65°C without β -glucanase addition, and with β -glucanase during mashing.

Observations indicate that wort produced at 65°C exhibits viscosity above 1.75 cP in all measurements, posing filtration challenges. To address this for brewing, β -glucanase addition during mashing becomes necessary.

To assess β -glucanase impact, filtration times for three methods are examined. Filtration times are compared for infusion, decoction, and mix methods, both without β -glucanase and with added β glucanase during mashing. Chart 1 presents measurement results.

Chart-1 highlights that adding β -glucanase significantly reduces filtration time compared to worts without it, nearly halving the time. This difference diminishes as malt enzyme activity increases.

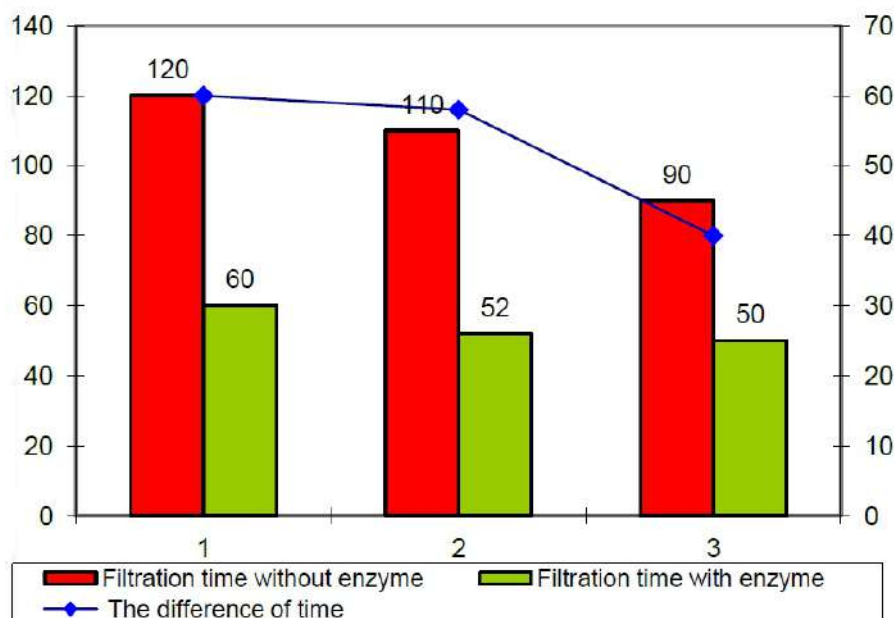


Chart 1. The difference of filtration time

In addition to the enzymes that are naturally present in malt, brewers can also use exogenous enzymes, which are enzymes that are produced by other organisms. Exogenous enzymes can be used to supplement the activity of the natural enzymes, or they can be used to achieve specific results that cannot be achieved with the natural enzymes alone. For example, exogenous enzymes can be used to produce low-carbohydrate beer or to improve the flavor of beer brewed with adjuncts.

The use of enzymes in wort production is a complex and ever-evolving field. Brewers must carefully consider the type of beer they are brewing, the ingredients they are using, and the desired results when choosing which enzymes to use.

Some additional benefits of using enzymes in wort production:

- They can help to reduce the brewing time.
- They can improve the efficiency of the brewing process.
- They can help to improve the quality of the beer.
- They can help to reduce the cost of brewing.

Overall, enzymes are a valuable tool for brewers who want to optimize wort production and produce high-quality beer.

Conclusions

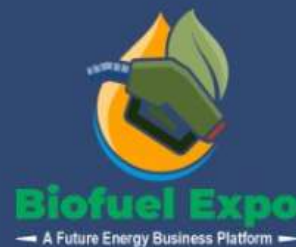
Enzymes have a great impact on wort production. They affect the turbidity, viscosity, and filtration time of wort. To produce a wort with enough turbulence for good filtration, enzymes must be added during the mashing process. A viscosity of less than 1.75 centipoise (cP) is recommended for good filtration. The wort produced at 65° has a viscosity higher than 1.75, so β -glucanase must be added to the mashing process to reduce the viscosity. In conclusion, if the malt does not degrade to the appropriate level due to poor quality or inaccurate methods (incomplete activation of enzymes at the proper time and temperature), the only way to get a clear, filterable wort with low viscosity is to add β -glucanase.

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THE IMPORTANCE OF SELTZER IN THE BEER INDUSTRY AND ITS MARKET DEMAND AND TRENDS



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1.Introduction

Seltzer, a carbonated water beverage with various flavors, has witnessed a remarkable surge in popularity in recent years. While traditionally associated with the soda industry, seltzer has also made a significant impact in the beer industry. This article delves into the importance of seltzer in the beer industry, examining its market demand, consumer preferences, and the factors driving its growth. By exploring the intersection of seltzer and the beer industry, we can gain insights into the evolving beverage landscape and the opportunities it presents. Seltzer is a carbonated water beverage that is often flavored. It is similar to soda or sparkling water but typically does not contain any added sugars or artificial sweeteners. Seltzer is known for its effervescence and refreshing qualities. It can be enjoyed on its own or used as a mixer in various cocktails.

2.The Emergence of Seltzer in the Beer Industry

2.1 Changing Consumer Preferences: The rise of health-consciousness and the increasing demand for lighter, lower-calorie options have driven consumers to explore alternative beverages. Seltzer, with its low-calorie content and refreshing taste, has become an appealing choice for individuals seeking a lighter alcoholic option.

2.2 Diversification of Beer Offerings: Brewers have recognized the shifting consumer preferences and the need to diversify their product portfolios. By incorporating seltzer into their offerings, beer companies have expanded their reach and tapped into a new market segment that was previously untapped.

2.3 Appeal to New Consumer Segments: Seltzer's clean and crisp taste, coupled with its fruitflavored options, has attracted consumers who may not have been traditional beer drinkers. This includes younger demographics and individuals who prefer milder alcoholic beverages.



Brand of Seltzer

3. Market Demand for Seltzer in the Beer Industry

3.1 Growing Market Size: The market demand for seltzer in the beer industry has witnessed exponential growth. Brewers and beverage companies are investing in seltzer production facilities and expanding their product lines to meet the rising consumer demand.

3.2 Millennial and Gen Z Influence: Millennials and Gen Z consumers have played a significant role in driving the popularity of seltzer in the beer industry. These demographics prioritize convenience, variety, and healthier options, making seltzer a natural fit for their preferences.

3.3 Health-Conscious Lifestyle: Seltzer's lower calorie and carbohydrate content align with the increasing emphasis on health and wellness. Consumers seeking healthier alternatives to traditional beer are turning to seltzer as a refreshing option.

3.4 Flavor Innovation: The seltzer market in the beer industry is characterized by a wide range of flavor options, from classic fruit flavors to more unique and exotic combinations. This flavor innovation has contributed to the overall appeal and market demand for seltzer.

3.5 Accessibility and Convenience: The ready-to-drink nature of seltzer, often available in portable cans, has contributed to its market demand. Seltzer's convenience aligns with consumer preferences for on-the-go lifestyles and social gatherings.

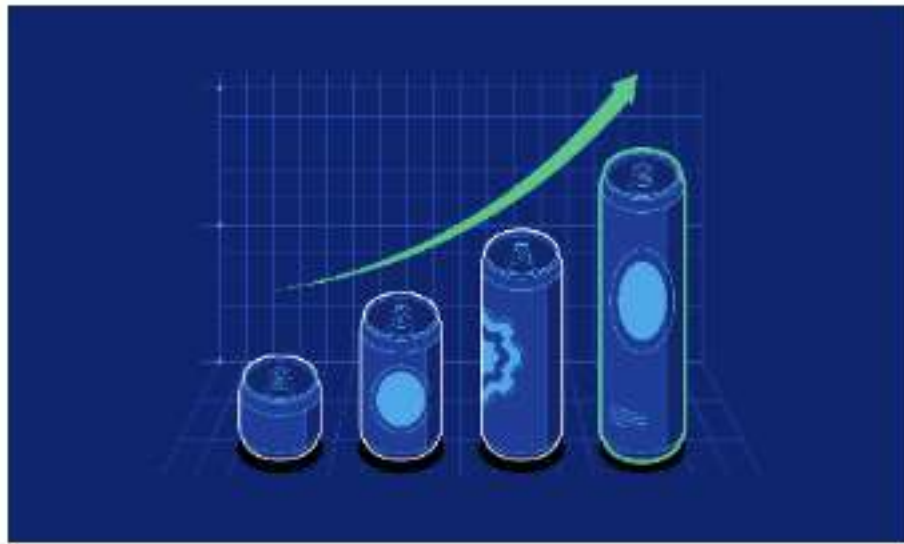
4. Impact on the Beer Industry and Future Outlook

4.1 Industry Adaptation and Expansion: The emergence of seltzer in the beer industry has prompted brewers to adapt and expand their operations. Many breweries have introduced their own seltzer brands or acquired existing seltzer producers to capitalize on the trend.

4.2 Market Competition and Collaboration: The growing seltzer market has intensified competition within the beer industry. Breweries are competing to capture a share of the seltzer market by offering unique flavors, marketing strategies, and brand differentiation. Additionally, collaborations between beer and seltzer brands have emerged, leveraging each other's strengths to create innovative products.

4.3 Sustaining Consumer Interest: To sustain the demand for seltzer in the beer industry, breweries must continue to innovate and anticipate evolving consumer preferences. This includes flavor experimentation, product differentiation, and engaging marketing campaigns that resonate with target demographics.

4.4 Regulatory Considerations: As the popularity of seltzer grows, regulatory bodies may introduce guidelines or regulations specific to seltzer production and labeling within the beer industry. Brewers will need to stay informed and compliant to ensure consumer safety and product quality.



Beer Industry Marketing

5.Conclusion

Seltzer has become an essential component of the beer industry, driven by changing consumer preferences, market demand, and the need for diversification. Its lower calorie content, refreshing flavors, and appeal to new consumer segments have made seltzer a significant growth opportunity for brewers. As the seltzer market continues to expand, the beer industry must adapt, innovate, and collaborate to meet consumer expectations. By embracing the rising popularity of seltzer and capitalizing on its market demand, breweries can navigate the evolving beverage landscape, capture new consumer segments, and ensure their relevance in the dynamic market of the future.

MAJOR MELANOIDINS IN DARK SPECIALITY MALT AND THEIR CHARACTERISTICS



SAURABH N. PERKAR

BREWER

ALCHEMY MICROBREWERY, BANGALORE

Malt is one of the most important ingredients for making beer which just not give fermentable sugar after partial hydrolysis reaction which we brewers called “mashing” but many melanoidins which are important for a complex wort flavour.

These melanoidins are formed during kilning process of malted barley. Melanoidins are formed through the Maillard’s reaction. This reaction occurs between amino acids and reducing sugar leading to the formation of complex mixture of high molecular weight compounds, including melanoidins. These compounds contribute to the colour, flavour and aroma of the malt.

Melanoidins are responsible for the deep colour and rich flavour responsible for having unique notes in beer.

But do we know how many types of major and important melanoidins are there in malt?

That’s the topic of today to discuss and understand different melanoidins and how those help us to understand % wight of malt to use in recipe formulation.

Here are some most important flavours contributed by major melanoidins.

- **Cocoa** – the melanoidin responsible for the cocoa flavour in malted barley is called catechins. They contribute to the development of flavours resembling those found in cocoa and chocolate.
- **Coffee** – one of key melanoidins contributing to the coffee like aroma and flavour is melanoidin -4.
- **Dark Chocolate** – catechins is a melanoidin responsible for this flavour as cocoa.
- **Roasted Almond** – the melanoidin responsible for the roasted almond flavour in malted barley is known as 2-acetyl-1-pyrroline. It contributes significantly to the characteristic nutty aroma found in roasted barley.
- **Bread** – the melanoidins responsible for bread flavour in malted barley is known as 5-hydroxymethyl-2-furfural.

This are major melanoidins present in darker speciality malt and if we know % weight of it by per malt weight basis so it will be so easy for us to target usage of speciality malt in our malt bill.

We will discuss some remaining melanoidins next time , till then cheers.



AKSHAT JAIN

Business Development Manager-Craft Brewing

Alcohol yeast, often referred to as brewing yeast or distillers yeast, is a specific type of yeast strain used in the production of alcoholic beverages through fermentation. This yeast strain is carefully selected for its ability to convert sugars into alcohol and carbon dioxide efficiently. Here are some key aspects of alcohol yeast:

1. *Saccharomyces cerevisiae*: The most common yeast strain used for alcoholic fermentation is *Saccharomyces cerevisiae*. This yeast species is well-suited for converting sugars into alcohol and is used in the production of various alcoholic beverages, including beer, wine, and spirits.

2. Fermentation: Alcohol yeast plays a crucial role in the fermentation process. When exposed to sugars, yeast metabolizes them, producing alcohol and carbon dioxide as byproducts. This process is central to the production of alcoholic beverages, as it imparts alcohol content and flavor to the final product.

3. Temperature and Alcohol Tolerance: Different strains of alcohol yeast have varying temperature and alcohol tolerance levels. Brewers and distillers select yeast strains that match the desired fermentation conditions and alcohol content of their specific product.

For example, some yeast strains are better suited for high-alcohol environments found in the production of spirits, while others are used for lower-alcohol beverages like beer.

4. Flavor and Aroma: Alcohol yeast can also contribute to the flavor and aroma profile of the final product. Different yeast strains produce various compounds during fermentation, such as esters and phenols, which can influence the taste and scent of the beverage.

5. Nutrient Requirements: Yeast requires various nutrients to carry out fermentation effectively. This includes sugars, nitrogen compounds, vitamins, and minerals. Brewers and distillers often carefully manage these nutrient levels to ensure a healthy fermentation process.

6. Yeast Pitching: In brewing and distilling, yeast is typically added to the wort or mash during a process called "pitching." This is the moment when yeast is introduced to the sugary liquid to start fermentation. Proper pitching rates are critical for achieving desired alcohol content and flavor profiles.

7. Reusability: In some cases, yeast can be reused for multiple batches of fermentation, particularly in traditional brewing and distilling processes. This practice, known as "repitching" or "yeast harvesting," can save costs and maintain consistent yeast characteristics.

It's important to note that the specific strain of alcohol yeast used in beverage production can greatly influence the final product's flavor, aroma, and characteristics. As such, yeast selection is a crucial aspect of the brewing and distilling process, and it is often a closely guarded secret among producers, contributing to the uniqueness of their products.

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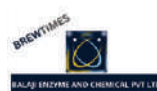


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UNDERSTANDING THE DIFFERENT PARTS PER MILLION (PPM) OF AERATION NEEDED FOR LAGER BEER AND BELGIAN WITBIER



SANDEEP CHAWLA

**Head brewer, the Bier library
Bangalore**

Aeration plays a critical role in the brewing process, impacting the flavor, aroma, and overall quality of the beer. Lager beer and Belgian Witbier, two popular beer varieties, require different PPM levels of aeration to achieve their distinct characteristics.

When it comes to lager beer, typically brewed at colder temperatures, a lower PPM of aeration is preferred to maintain its crisp, clean taste. Brewers often aim for around 7-9 PPM, as excessive aeration can lead to unwanted oxidation and stale flavors in the final product. By carefully monitoring the volume and flowmeter readings, brewers can ensure precise control over the aeration process, guaranteeing the desired outcome for their lager brew.

On the other hand, Belgian Witbier, known for its refreshing citrusy and spicy notes, demands a higher PPM of aeration, usually ranging between 10-12 PPM. This elevated level of aeration contributes to the formation of esters and phenols, essential for the beer's characteristic fruity and spicy flavors.

Maintaining a careful balance between volume and aeration flowmeter readings is crucial in achieving the ideal aeration level for this style of beer, as excessive aeration can lead to overpowering flavors, while inadequate aeration can result in a lackluster taste profile.

Understanding the nuanced requirements for aeration in brewing lager beer and Belgian Witbier is key to crafting exceptional brews that delight the palate and embody the unique essence of each beer style.

BECPL TEAM AT DRINKTECH 2023





Mr. GOPAL DHANDE

Maize (corn) grows well in 110 days, previously it grows more than 140 days. Now new hybrid develop is grow completely in 90 days with yeild of about 50 quintal per acre if proper care of crop is taken by using proper irrigation system, fertilizers and pest controls. previously is is very less even 5 quitals Or less that in kharif. Now now days in India both kharif and rabbi season maize is grown. In United States Bayer crop scientists had develop a drought and strom resistance new hybrid variety whose stalk is very small as compared to our regular maize stalk. In India maize grown where average rain fall 20 inches and temp. 20 °c to 40 °c.

maize grain seed is planted under favorable conditions and it germinate within 2 - 3 days. The first growth is radical or main seedling root, followed a day Or so later by subsidiary roots and the stalk shoot.

FERTILIZATION - Maize plant obtain carbon, hydrogen and oxygen from air and water, but large amounts of nutrients from soil through roots. For more yeild of crop heavy fertilization is required in the form of nitrogen, phosphate and potassium.

WATER REQUIREMENTS - maize crop required 20 to 25 inches rainfall for kharif crop and in rabby season irrigation is done by sprinkle or deep irrigation systems.

WEED CONTROL - A dense stand of weeds causes serious loss of yeild, particularly if weeds grow when crop is small. Weed control will be done by crop rotation and by mechanical cultivation, proper use of chemical herbicides.

DISEASE, INSECTS AND OTHER DAMAGE - Maize crop is susceptible to damage in number of ways. Wheatear and waterlogged soil, lack of moisture or nutrients, fertilizer burn, hurbicide damage due to limited tolerance, microbial diseases, birds, rodents and insects attack may cause maize crop damage resulting to low yeild.

HARVESTING - Matured maize is harvested in India by getting cob completely yellow and semy dried. Semy dried cobs cut from plant collected in field and store up to getting kernal(maize) moisture up to 30 to 40%. Maize grain separated from cob and sun dried till getting below 15% moisture. Generally all over in India maize grain are sun dried because of sufficient and zero cost sun light is available. Also land holding is less than three acre and low yeild of maize grain, low cost and low capacity mechanical dryers not available. Mainly 13% to 15 % moisture maize grain sold in market. After sundried and getting 13% to 15% moisture ofmaize grain packed in 50 kgs. gunny bags or in H. D. P. E. bags and sold in market or stored in godowns. Some farmers sales l'm market by bringing loose in tractirs, carts or in trucks.



RUPAK KUMAR CHATTERJEE

Yamuna Nagar (Haryana)

1. Two types of process of manufacturing

- Acid hydrolysis
- Enzyme Process

2. Source of Raw Materials

- Maize
- Tapioca
- Broken Rice

3. Manufacturing Process

- Acid Hydrolysis: By using hydrochloric acid as easily available, cheapest cost & no harmful. Slurry pass through tube, heat by both sides out of the tube with constant temperature and steam pressure
- Enzyme Process: Here using alpha-amylase in first stage pass through tube coil called retention coil then pass through dextrinization column (mainly holding purpose) to convert starch to dextrin then hold in tank to get starch free. Then in Second stage using glucoamylase separate gluten through filter press/RVF.

4. Bleaching

- In two stages by using activated carbon

5. Purifications

- To remove all impurities like organic & inorganic materials through cotton & anion resin

6. Final Bleaching

7. Evaporation in two stages

- In first stage upto 55-60%
- Final stage evaporator upto as per customers requirements (solid 80-85%)

8. Packing

- HDPE drums
- M.S drums
- SS tankers

9. Physical observations

- Clear transparent
- Odour less
- In liquid form

10. Uses

- Mainly confectionery biscuits
- Chocolate candy
- Soft drinks
- Sweet manufacturing

METHODS USED TO PRESERVE WINE



MAMTA BHARDWAJA

**Business Development Manager
(Wine Industry)**

How do you store an open bottle of wine?

Once a bottle of wine is opened, the oxygen in air start mixing with the wine and it improves flavor. But it has certain time limit. After that wine becomes dull and flat. It becomes unappealing. The process is called as oxidation.

So the most important thing is to reduce the amount of oxygen entering in the wine. This is done either by removing or replacing the oxygen or by minimizing the surface area of wine.

Tips after opening bottle

Before and after opening the bottle keep it in a refrigerator. When wine is stored at colder temperatures the chemical processes slow down. Including the process of oxidation. Wine may remain fresh in fridge for up to 3 to 5 days.

Re-cork or re-cap the wine after every pour.

Keep the open wine bottle out of light.

Once the bottle is opened keep it upright to minimize the surface area exposed to oxygen.

Prevent wine from sudden temperature changes.

White wines and light red wines are more sensitive to oxygen and light. Pinot noir is the example of most sensitive wine. Organic wines or sulfite free wines are also sensitive to oxygen.

Methods to preserve wine

- ✓ **Transfer the remaining wine in another clean empty small bottle**

If you think you will only be able to finish half the bottle, first of all transfer the half of the wine in another

clean empty half bottle and cork or cap this bottle immediately. Due to this the surface area exposed to oxygen is minimized.

✓ **Vacuum system**

These are systems where the oxygen is removed from the bottle and the bottle is sealed. There are several products in the market. The system creates low pressure headspace in the wine bottle. These products usually consist of a rubber stopper and a hand-operated pump.

There is controversy about this method that it creates partial vacuum means wine still interact with oxygen. Also some subtle flavors of wine are pumped away. But there is no scientific evidence for this.

✓ **Blanket system**

These systems work on the principle of blanketing the wine with a gas heavier than oxygen to form a protective layer between the wine and air. This usually contains a mixture of nitrogen, helium, or argon. Several products are available that allow you to pump this gas mixture into the bottle and then quickly replace the cork.

The main drawback of this system is that, it is not cost effective. The products have high cost and also you have to refill the pump regularly with inert gas.

The best way to store an open bottle of wine is, just share it with your friends. :)

Cheers!!

Sorbital: A Versatile Sugar Alcohol With Diverse Application



Sales Executive

Balaji Enzyme and Chemical Pvt Ltd

Introduction

Sorbitol, a sugar alcohol also known as glucitol, is a polyhydric alcohol with a sweet taste. It is widely used in various industries, including food, pharmaceuticals, and personal care. Sorbitol offers several advantages, such as being low in calories and non-cariogenic, making it a preferred alternative to sucrose and other sugars in many applications. This article explores the production, properties, and diverse applications of sorbitol.

Production of Sorbitol

Sorbitol can be synthesized through a multi-step process, primarily starting with glucose. The steps include:

Starting Material: Glucose, typically derived from cornstarch, serves as the primary precursor for sorbitol production.

Enzymatic Conversion: Glucose is converted into fructose using the enzyme glucose isomerase, a crucial step in the production process.

Hydrogenation: Fructose is then hydrogenated in the presence of a metal catalyst under high pressure, resulting in the formation of sorbitol.

Purification: After hydrogenation, purification processes such as filtration, distillation, and crystallization are employed to separate sorbitol from impurities.

Crystallization: The purified solution is cooled to induce sorbitol crystallization, followed by separation and drying to obtain the final product.



Physical and Chemical Properties

Sorbitol exhibits several notable properties that contribute to its widespread use:

Sweetness: Sorbitol has approximately 60% to 70% of the sweetness of sucrose but with fewer calories. This makes it an attractive sugar substitute for those seeking to reduce caloric intake.

Non-Cariogenic: Sorbitol does not promote tooth decay, as oral bacteria are unable to ferment it into acids that damage tooth enamel. It is, therefore, a common ingredient in sugar-free chewing gum and oral care products.

Solubility: Sorbitol is highly soluble in water and most organic solvents, which makes it versatile for use in a wide range of products.

Low Hygroscopicity: It has low water-absorbing properties, making it ideal for use in products that require moisture control, such as sugar-free candies and baked goods.

Humectant Properties: Sorbitol can retain moisture, making it an essential ingredient in cosmetics and personal care products helping to prevent products from drying out.

Applications of Sorbitol

Sorbitol finds diverse applications across several industries:

Food Industry:

Sugar Substitutes: Sorbitol is commonly used as a sugar substitute in sugar-free and reduced-sugar products, such as candies, chocolates, and baked goods.

Humectant: It acts as a humectant in confectionery, preventing products from becoming too dry.

Flavor Enhancement: Sorbitol can enhance and prolong the flavor of certain foods.

Pharmaceutical Industry:

Oral Care Products: Sorbitol's non-cariogenic properties make it a common ingredient in toothpaste, mouthwash, and chewing gum.

Pharmaceutical Formulations: It is used as a bulk laxative and in the formulation of various oral medicines.

Cosmetics and Personal Care:

Skin and Hair Care Products: Sorbitol is employed to enhance moisture retention and improve the texture of skin creams, lotions, and shampoos.

Fragrances: It can stabilize fragrances in perfumes and colognes.

Chemical Industry:

Plasticizers: Sorbitol is used as a plasticizer in the production of plastics and resins.

Medicine:

Medical Applications: Sorbitol is used in medical procedures, such as colonoscopy, as a laxative.

Paper and Textiles:

Sorbitol can be used as a softening agent in paper and textile manufacturing.



Conclusion

Sorbitol, with its unique properties and versatility, plays a crucial role in various industries. As a low-calorie sugar substitute, a non-cariogenic sweetener, a moisture-retaining humectant, and more, it meets a wide range of needs in the food, pharmaceutical, and personal care sectors. The production of sorbitol is a complex process, but its diverse applications make it a valuable commodity with significant relevance in modern industries. Its importance is set to continue to grow as consumers seek healthier and more functional product alternatives.



BREW ASIA
HONG KONG INTERNATIONAL CITY 2023

WHEN BREWING INDUSTRY MEETS
19-20 OCTOBER 2023

CONFERENCE PROGRAMME

DAY 1 - THURSDAY 19TH OCTOBER

08:00 - 09:00 WELCOME & REGISTRATION

09:00 - 10:00 KEYNOTE ADDRESS
H.E. Lim Joo Seng, Secretary for the Environment, Government of the Hong Kong Special Administrative Region

10:00 - 11:00 PANEL DISCUSSION
The Future of Brewing in Asia
Moderated by: Mr. David Ho, Chairman, Beer & Wine Association of Hong Kong

11:00 - 12:00 BREAKFAST

12:00 - 13:00 LUNCH

13:00 - 14:00 PANEL DISCUSSION
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14:00 - 15:00 BREAKFAST

15:00 - 16:00 LUNCH

16:00 - 17:00 PANEL DISCUSSION
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17:00 - 18:00 BREAKFAST

18:00 - 19:00 LUNCH

19:00 - 20:00 PANEL DISCUSSION
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20:00 - 21:00 BREAKFAST

21:00 - 22:00 LUNCH

22:00 - 23:00 PANEL DISCUSSION
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23:00 - 24:00 BREAKFAST

24:00 - 25:00 LUNCH

25:00 - 26:00 PANEL DISCUSSION
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26:00 - 27:00 BREAKFAST

27:00 - 28:00 LUNCH

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36:00 - 37:00 LUNCH

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39:00 - 40:00 LUNCH

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105:00 - 106:00 LUNCH

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108:00 - 109:00 LUNCH

109:00 - 110:00 PANEL DISCUSSION
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110:00 - 111:00 BREAKFAST

111:00 - 112:00 LUNCH

112:00 - 113:00 PANEL DISCUSSION
The Future of Brewing in Asia





PRIYANSHI SHARMA

Yeast is a versatile microorganism that offers several nutritional contributions, primarily in the context of its use in baking and fermentation processes. Here are some of the key nutritional contributions of yeast:

1. Protein: Yeast is a good source of protein, which is essential for the growth and repair of body tissues. It contains all the essential amino acids, making it a complete protein source. This makes it valuable in vegetarian and vegan diets.

2. B Vitamins: Yeast is rich in various B vitamins, including thiamine (B1), riboflavin (B2), niacin (B3), pantothenic acid (B5), pyridoxine (B6), and folate (B9). These vitamins play crucial roles in energy metabolism, nerve function, and overall health.

3. Minerals: Yeast contains essential minerals like potassium, magnesium, and selenium. These minerals are important for various bodily functions, including nerve function, muscle contraction, and antioxidant defense.

4. Fiber: Although yeast itself is not a significant source of dietary fiber, it contributes to the production of fiber in fermented foods. In the fermentation process, yeast helps break down complex carbohydrates into simpler sugars and produces fiber-like compounds called beta-glucans, which can have health benefits.

5. Niacin (B3) Production: Yeast is involved in the production of niacin (vitamin B3) during fermentation. This is especially important in traditional brewing processes, where the yeast's activity converts niacin precursors in grains into the active form of the vitamin, making it more bioavailable to humans.

6. Folate (B9) Production: Yeast can also contribute to folate production during fermentation. Folate is important for DNA synthesis and cell growth.

7. Glutathione: Yeast is a natural source of glutathione, a potent antioxidant that helps protect cells from oxidative stress and supports the immune system.

8. Beta-Glucans: As mentioned earlier, yeast-derived beta-glucans have been studied for their potential health benefits. These compounds may help boost the immune system, lower cholesterol levels, and regulate blood sugar.

It's important to note that the nutritional content of yeast can vary depending on the type of yeast (e.g., brewer's yeast, baker's yeast) and how it's prepared or processed. Brewer's yeast, for example, tends to have a higher B-vitamin content compared to baker's yeast. Additionally, when yeast is used in baking, most of its nutritional content may not be fully retained in the final product.

While yeast can provide several important nutrients, it's typically consumed in relatively small quantities, and its nutritional contributions should be considered as part of a balanced diet rather than a primary source of these nutrients.



KANCHAN SINGH

Chapter Head - South Delhi, India
Apex Wine Club India
1 October 2023, Sunday

Moët Hennessy Louis Vuitton SE (LVMH)-owned Moët Hennessy's sparkling wine maison, Chandon, has introduced a still wine in Nashik in India, which is a first in its 60-year history. Named Chandon Aurva, the still wine is a 100 percent shiraz still red wine. Aged in both old and new oak, it is heavy on the red fruit flavours, including plum, cherries and raspberries, with the aroma of jasmine, violet and dry red roses.

The meaning of 'Aurva' is 'of the earth' in Sanskrit. Besides, the label contains Warli art, indigenous to Maharashtra, the state where Nashik is located.





BrewTimes™



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