BrewTimes™

AUGUST 2024

BALAJI ENZYME & CHEMICAL PVT LTD

Akshay Mittal Industrial Estate
A-113, 1st Floor, Building No 5, Sir M V Road, Andheri (East),
Mumbai - 400059 | +91-22-460 31 666
E-mail : info@becpl.in | Web. : www.becpl.in

Introducing BrewTimes :

We M/s Balaji Enzyme & Chemical Pvt Ltd, are pleased to bring to you our August 2024 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.

Balaji Enzyme and Chemical Pvt Ltd

we wish you all

HAPPY

INDEPENDENCE DAY

15TH August

Freedom in our mind, Faith in our words, Pride in our hearts,
Memories in our soul

BarthHaas®

PHA® Classics in propylene glycol (PG)

GENERAL:

PHA® Classic products are a hop extract in an aqueous propylene glycol carrier, produced by a proprietary physical separation process. It is considered as GRAS (FEMA no. 2580 – Hops, oil). Propylene glycol is registered as a food additive according to Annex II of EU Reg 1333/2008 as well as E1520 and PG is a permitted carrier for flavours as per regulation 2006/52/EC. PHA® products are exclusively supplied worldwide by BarthHaas.

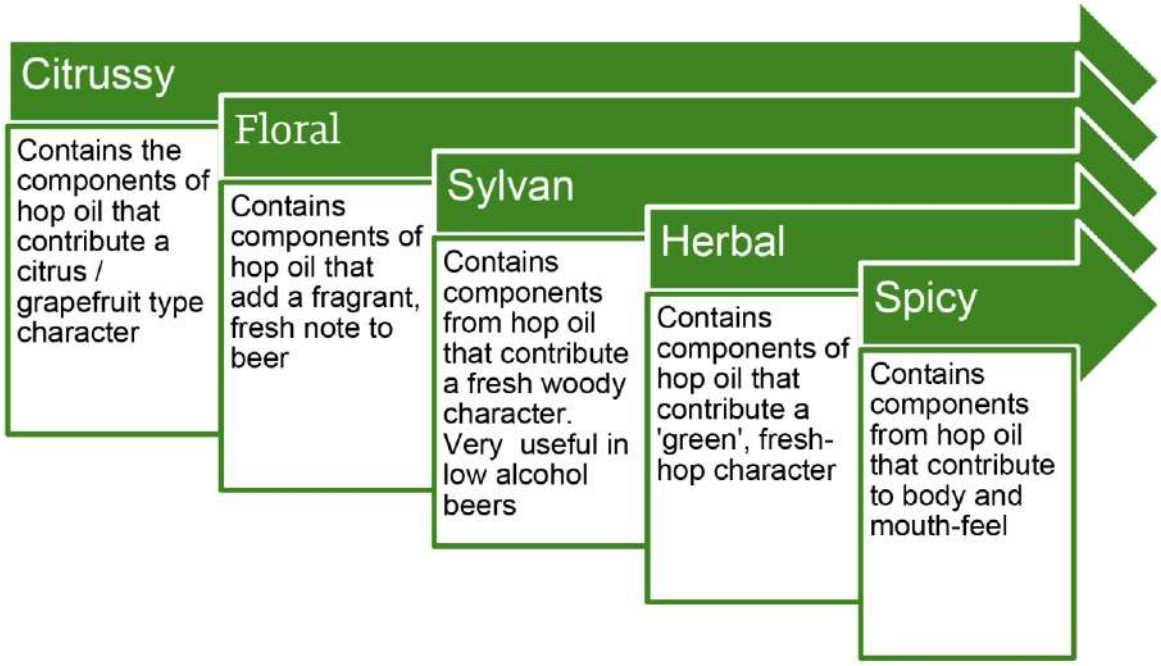
PHA® Classics and HAP Classics are aroma products that provide a defined aroma characteristic. This data sheet is suitable for all of the products listed below:

- HAP F&H Blends (code 126248)
- HAP F/H blend 40/60 (code 126234
- HAP FGC (code 126231)
- HAP FL Extra Linalool (code 126255)
- HAP Floral PG (code 126221)
- HAP Herbal PG (code 126222)
- HAP LAB436 (code 126304)
- PHA® Super Floral PG (code 126704)
- PHA® 432A (code 126238)
- PHA® 443 (code 126239)
- PHA® 449 (code 126242)
- PHA® 476 (code 126356)
- PHA® 482 (code 126302)
- PHA® Balance (code 126626)
- PHA® Citra Classic (126277)
- PHA® Citrussy PG (code 126224)
- PHA® Esters PG (code 126225)
- PHA® Floral 420 (code 126303)
- PHA® Floral PG (code 126256)
- PHA® Herbal PG (code 126257)
- PHA® M (code 126227)
- PHA® Myrcene PG (code 126263)
- PHA® Pomegranate (126353)
- PHA® Rose (126602)
- PHA® Spicy PG (code 126223)
- PHA® Sylvan DP (code 126236)
- PHA® Sylvan PG (code 126226)
- PHA® Zero (various codes)
- PHA Soft Myrcene (code 126715)
- PHA Myrcene US (code 126283)
- PHA Super Citrussy (code 126284)
- PHA 3M (code 126362)
- PHA HITA (code 126363)

CHARACTERISTICS:

PHA® Classic products are 100% soluble in beer (or other beverages). In general, PHA® products offer an alternative means of adding hop aroma independent of any other product or process and of annual crop variations. They can complement traditional means of adding hop aroma by kettle addition. Specifically, PHA® Classic products can impart beer flavour attributes such as citrussy, floral, herbal or spicy characteristics. They enhance pleasant existing flavours in the beer/soft drink and can mask some off-flavours. The following Classic PHA® products are available:

Classic PHA® :



Product specifications: Available on request.

PRODUCT USE:

The PHA® Classic products are completely soluble in beer and are intended for addition to fined or filtered beers. The required amount of PHA® may be metered directly into the beer stream during transfer to bright beer tank or other appropriate vessel. A usage rate of PHA® per hectoliter normally is about 10 ml but might vary between 5 – 40 ml according to the desired intensity of aroma. We recommend laboratory scale trials to determine which concentration gives the desired effect. This evaluation can be carried out on bottles of 250 to 500 ml capacity.

On a large scale, PHA® Classic products are used as a post fermentation addition to finished beer, where 100% utilization is feasible. PHA® Classic products are lightstable and therefore can be used to introduce hop aroma into a beer brewed using exclusively downstream products such as Tetrahop Gold® and Redihop®. These products may be added without prior dilution to beer either before or after the final filtration preferably by metered injection into a turbulent beer stream during transfer. They can also be added to bright beer without any increase in haze or deterioration in foam stability. If possible the pump should be adjusted to deliver the PHA® over approx. 95% of the total transfer time.

TRIAL GUIDE:

We recommend benchtop trials to determine which concentration gives the desired effect. To get a better initial understanding for the effect of individual PHA® products and the required dose rate, we recommend dosing directly into a glass of beer. For more accurate results, we suggest following this up with dosing into bottles as explained below. The rate for initial tasting trials should be approximately 10 mL/hL of the PHA® as supplied. PHA® products can be dosed directly using a micropipette or syringe. For example, a 330 mL bottle, a 33µL amount of PHA® gives a dose rate equivalent to 10mL/hL. Chill the beer to normal drinking temperature. Open and introduce the required volume of PHA® in the headspace of the beer bottle and reclose the bottle. Invert the bottle several times to ensure mixing and chill again for at least two hours before opening and tasting.

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SPECIAL PROPERTIES OF PHA®

The PHA® products have the following properties:

- Natural: 100% derived from hops by physical processes.
- Fully soluble: utilisation is 100% because of full solubility in beverages.
- No negative impact on beer quality: Do not increase beer haze or reduce beer foam stability.
- Easy handling: Provided as standardised solution for direct dosing.
- Light stability: free of hop α-acids; can be used with any packaging type.
- Ideal for brand diversification: differentiate existing products or create new ones.

PACKAGING:

PHA® products are available in 1 and 5 L aluminium flasks. Larger package units are available on request

STORAGE AND BEST-BY RECOMMENDATION:

PHA® products are stable in unopened containers for at least 24 months. Store at 0-20 °C (32-68 °F) in high-grade stainless steel, glass, aluminum or lacquered steel drums.

LABELLING:

The precise labelling term according to 1334/2008 is "natural hop flavouring". However, more specific names are authorised and we believe that "hop extract" is permissible - we have explicit permission for "extrait d'houblon" for a PHA from the French authority.

SAFETY:

Please refer to our SDS which can be downloaded on our website.

TECHNICAL SUPPORT:

We will be pleased to offer help and advice on the use of PHA® in brewing/soft drink production.

E-Mail: Brewingsolutions@barthhaas.de

PHA® Topnotes in propylene glycol (PG)

General

PHA® Topnotes products are a hop extract in an aqueous propylene glycol carrier, produced by a proprietary physical separation process. It is considered as GRAS (FEMA no. 2580 – Hops, oil). Propylene glycol is registered as a food additive according to Annex II of EU Reg 1333/2008 as well as E1520 and PG is a permitted carrier for flavors as per regulation 2006/52/EC. PHA® products are exclusively supplied worldwide by BarthHaas.

Figure 1: PHA® Topnotes

CHARACTERISTICS

PHA® Topnotes are soluble in beer (or other beverages). In general, PHA® products offer an alternative means of adding hop aroma independent of any other product or process. Specifically, PHA® Topnotes give a very intense 'dry hop' aroma to beer that is characteristic of the specific variety from which it is prepared. They enhance pleasant existing flavors in the beer/soft drink and can mask some off-flavors. The following PHA® Topnotes are immediately available:

PHA® Topnotes:

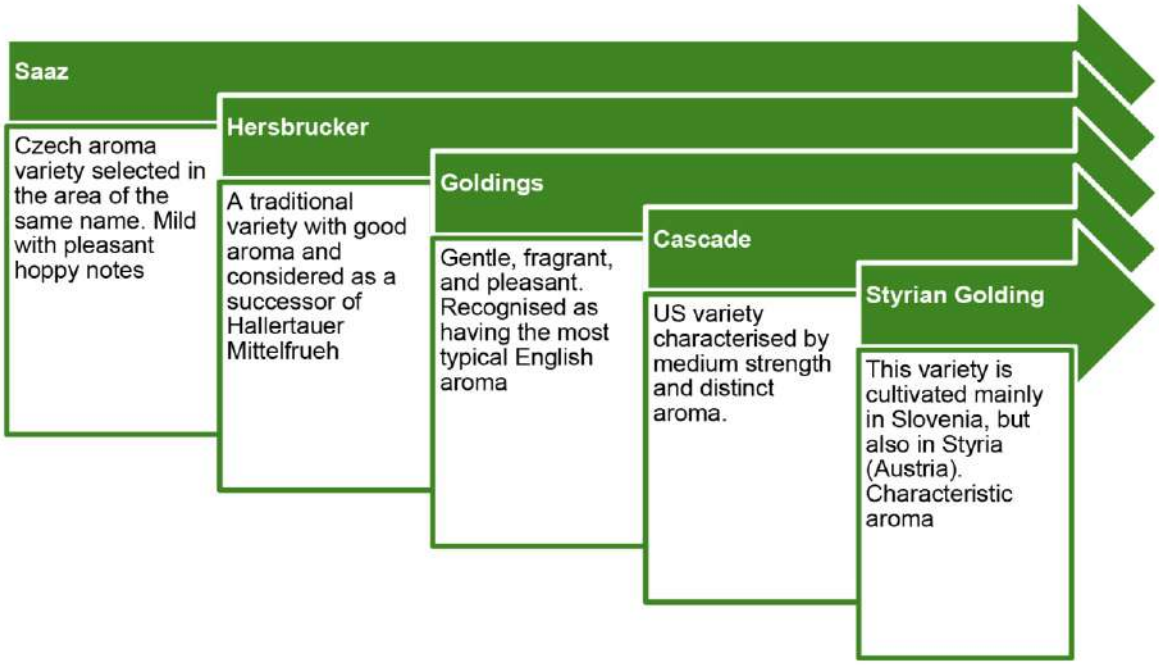

Figure 2: Examples from the PHA® Topnote range

CUSTOM MADE PRODUCTS

Custom-made PHA® Topnotes from other varieties are available on request.

Product Specifications

Description	water white solution, can be hazy
Specific Gravity (20°C)	1.034 - 1.037
Flash point	> 90 °C (194 °F)

Product Use

PHA® products are completely soluble in beer and are intended for addition to fined or filtered beers. The required amount of PHA® may be metered directly into the beer stream during transfer to bright beer tank or other appropriate vessel. A usage rate of PHA® per hectoliter normally is about 10 mL but might vary between 5 – 40 mL according to the desired intensity of aroma. We recommend laboratory scale trials to determine which concentration gives the desired effect. This evaluation can be carried out on bottles of 250 to 500 mL capacity.

On a large scale, PHA® Topnotes products are used as a post fermentation addition to finished beer, where 100% utilization is feasible. PHA® Topnotes products are light-stable and therefore can be used to introduce hop aroma into a beer brewed using exclusively downstream products such as Tetrahop Gold® and Redihop®. These products may be added without prior dilution to beer either before or after the final filtration preferably by metered injection into a turbulent beer stream during transfer. They can also be added to bright beer without any increase in haze or deterioration in foam stability. If possible, the pump should be adjusted to deliver the PHA® over approx. 95% of the total transfer time.

Trial Guide

We recommend benchtop trials to determine which concentration gives the desired effect. To get a better initial understanding for the effect of individual PHA® products and the required dose rate, we recommend dosing directly into a glass of beer. For more accurate results, we suggest following this up with dosing into bottles as explained below. The rate for initial tasting trials should be approximately 10 mL/hL of the PHA® as supplied. PHA® products can be dosed directly using a micropipette or syringe. For example, a 330 mL bottle, a 33µL amount of PHA® gives a dose rate equivalent to 10mL/hL. Chill the beer to normal drinking temperature. Open and introduce the required volume of PHA® in the headspace of the beer bottle and reclose the bottle. Invert the bottle several times to ensure mixing and chill again for at least two hours before opening and tasting.

Special properties of PHA®

The PHA® products have the following properties:

- Natural: 100% derived from hops by physical processes.
- Fully soluble: utilization is 100% because of full solubility in beverages.
- No negative impact on beer quality: Do not increase beer haze or reduce beer foam stability.
- Easy handling: Provided as standardized solution for direct dosing.
- Light stability: free of hop α-acids; can be used with any packaging type.
- Ideal for brand diversification: differentiate existing products or create new ones.

Packaging

PHA is available in 1 and 5 L aluminum flasks. Larger package units are available on request.

STORAGE AND BEST-BY RECOMMENDATION

PHA® products are stable in unopened containers for at least 24 months. Store at 0-20 °C (32-68 °F) in high-grade stainless steel, glass, aluminum, or lacquered steel drums.

LABELLING

The precise labelling term according to 1334/2008 is "natural hop flavoring". However, more specific names are authorized, and we believe that "hop extract" is permissible - we have explicit permission for "extrait d'houblon" for a PHA from the French authority.

SAFETY

Please refer to our SDS which can be downloaded on our website.

TECHNICAL SUPPORT

We will be pleased to offer help and advice on the use of PHA® in brewing/soft drink production.

E-Mail: Brewingsolutions@barthhaas.de

HAAS | BarthHaas

PHA® water-based Classics

General

An aqueous emulsion of hop (*Humulus lupulus* L.) extracts containing hop oil fractions, for addition of hop aroma and flavor to beer. Ingredients: water, hop extracts.

PHA® water-based Classics are aroma products that provide a defined aroma characteristic.

Characteristics

PHA® water-based Classics are 100 % soluble in beer (or other beverages). In general, PHA® water-based Classics offer an alternative means of adding hop aroma independent of any other product or process and of annual crop variations. They can complement traditional means of adding hop aroma. Specifically, PHA® water-based Classics can impart beer flavor attributes, for example flavors with citrussy, floral, spicy characteristics. They enhance pleasant existing flavors in the beer/soft drink and can mask some off-flavors. The following PHA® water-based Classics are available:

- PHA® water-based Citrussy
- PHA® water-based Spicy
- PHA® water-based Floral
- PHA® water-based Fruity
- PHA® water-based Herbal
- PHA® water-based Woody

Product specifications: Available on request.

Product use

Shake bottle well before use.
A usage rate is normally about 30 mL/hL but might vary between 5 – 40 mL/hL according to the desired intensity of aroma. Higher dose rates are also possible. We recommend laboratory scale trials to determine which concentration gives the desired effect – see Trial Guide below.

Trial Guide

We recommend benchtop trials to determine which concentration gives the desired effect. To get a better initial understanding for the effect of individual PHA® water-based Classics products and the required dose rate, we recommend dosing directly into a glass of beer. Using the pipettes provided, two drops of a PHA® water-based Classics into 200 mL of beer will give a dose rate of approximately 30 mL/hL.

For more accurate results, we suggest following this up with dosing into bottles as explained below. PHA® water-based Classics can be dosed directly using a micropipette or syringe. For example, a 99 µL amount of PHA® water-based Classics added to a 330 ml bottle gives a dose rate equivalent to 30 mL/hL. Chill the beer to normal drinking temperature. Open and introduce the required volume of PHA® water-based Classics into the headspace of the beer bottle and reclose the bottle. Invert the bottle several times to ensure mixing and chill again for at least two hours before opening and tasting.

UNGÜLTIG

Special properties of PHA® water-based Classics

The PHA® water-based Classics have the following properties:

- Hop oils derived from hops by physical processes, emulsified with hop extracts
- Fully soluble: utilization is 100 % because of full solubility in beverages.
- No negative impact on beer quality.
- Easy handling: Provided as standardized solution for direct dosing.
- Light stability: free of hop α-acids; can be used with any packaging type.
- Ideal for brand diversification: differentiate existing products or create new ones.

Packaging

Packaged in glass or in lacquered aluminum bottles.

Storage and best-by Recommendation

Store unopened containers cold. Refrigerated storage (approx. 5°C) is recommended for best quality. Once opened, use quickly. Do not freeze.

Labelling

PHA® water-based Classics can be labelled according to 1334/2008 as "Hop Extract".

Safety

Please refer to our SDS which can be downloaded on our website.

Technical Support

We will be pleased to offer help and advice on the use of PHA® water-based Classics in brewing/soft drink production.

E-Mail: Brewingsolutions@barthhaas.de

UNCONTROLLED

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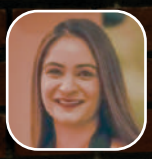

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HIGH-TECH BREWS: HOW INNOVATION IS SHAPING BEER

BIJAY BAHADUR

B.Sc. (Hons.); B.Tech. (Gold Medallist); PGDEE; MBA (IIM Raipur)
FIE; Chartered Engineer (India); LMIIChE; LMAFST (I)

Global Knowledge Fuels Brewing Innovation: The rise of shared knowledge across science, technology, and marketing has sparked a wave of creativity in the brewing industry.

Optimizing Operations: Balancing Quality and Efficiency: Brewery technical managers strive to balance maintaining exceptional beer quality and implementing cost-effective production methods, leading to successful and sustainable brewing operations.

To reduce costs and improve efficiency, brewers are exploring two key strategies:

1. Utilizing Alternative Raw Materials: This involves incorporating ingredients like non-malted cereals, sugar beet, or cane sugar, which often have lower costs or higher yields than traditional malted barley (Bahadur, 2024).

2. Streamlining Production Processes: By optimizing manufacturing processes to be shorter and more efficient, breweries can maximize their facilities' use. This reduces the impact of fixed asset costs on the final product price (Bahadur, 2024).

Today's market demands two crucial things from brewers: producing high-quality beer that consistently meets consumer tastes. Achieving consistent quality relies on efficient production process control throughout all stages.

Here we will explore two critical points in the technological process where we can optimize and make a significant contribution.

The Fining of Wort in the Whirlpool

Boiling the wort with hops triggers the coagulation of a portion of high-molecular-weight (above 12000) protein substances. This two-stage process occurs consecutively without interruption (Bahadur, 2024).

Stage 1: Upon reaching boiling temperature, the wort's protein molecules denature.

Stage 2: Chemical, physical, and colloidal effects cause the denatured proteins to coagulate, forming the familiar hot break.

Most brewers agree that removing the hot break from the wort before cooling is essential.
Failure to do so can lead to several problems (Bahadur, 2024):

- Increased difficulty in fining the wort.
- Yeast contamination hinders metabolic exchange through cell walls.
- Unwanted reddish color in lagers.
- Compromised taste and long-term stability of the finished beer.
- Reduced beer filterability.

Brewers have suggested and employed several processes to separate the hot break from the wort (Bahadur, 2024):

- Hot gravity sedimentation in tanks.
- Centrifugation.
- Filtration.
- The whirlpool.

Unfortunately, the whirlpool cannot operate universally, and its results must be consistently satisfactory. Thorough removal of the hot break can positively impact beer quality. However, achieving consistent high-quality brewing is significantly hindered by an irregularly functioning whirlpool.

Therefore, brewers prefer to use fining aids in the wort kettle immediately after boiling to enhance efficiency in the whirlpool. The wort then gets pumped into the whirlpool following the usual procedure. Adding fining aids to the boiling kettle just before transferring the wort to the whirlpool actively reduces the amount of hot break material.

This approach offers several benefits (Bahadur, 2024):

- ***Consistent Beer Quality:*** Fining aids help ensure consistent beer quality by removing hot breaks.
- ***Improved Efficiency:*** Faster fining allows for a shorter holding time in the whirlpool. This reduces the levels of dimethyl sulfide and other thermally degraded compounds, ultimately enhancing beer quality by eliminating adverse hot break effects.
- ***Enhanced Filtration and Stability:*** The use of fining aids leads to easier filtration of the finished beer and contributes to its improved stability.

Negative metabolites are valid for all types of beer; the closer they are to zero, the better the beer (Bahadur, 2024).

Regarding positive metabolites, each beer has its particular flavor and composition. It is the perfect balance between the various components guaranteeing maximum pleasure and desire to drink for the consumers (Bahadur, 2024).

The brewer must accomplish these two fundamental aims through the fermentation process (Bahadur, 2024):

1. Reduction of metabolites that have a negative influence.
2. Optimization of the quality and balance of metabolites that have a positive effect.

Achieving optimal beer flavor and aroma can be complicated. Here is why pure malt worts play a crucial role (Bahadur, 2024):

- ***Balanced Composition:*** Pure malt worts naturally contain (except for maybe zinc) all the essential nutrients yeasts need for robust growth and vigorous fermentation. This, in turn, is vital for achieving a well-balanced finished beer where all taste and aroma components come together harmoniously.

- ***Minimizing Unwanted Byproducts:*** The composition of pure malt worts also encourages yeast to prioritize beneficial metabolic pathways, minimizing the production of negative flavor and aroma compounds. This helps optimize the creation of desirable taste and aroma characteristics.

Conclusion

In the dynamic brewing landscape, innovation is not merely a buzzword but a fundamental driver shaping the industry's trajectory. The integration of global knowledge across scientific, technological, and marketing domains has unleashed a wave of creativity, propelling breweries towards new frontiers of possibility.

This innovation lies in the delicate balance between quality and efficiency in brewery operations. Technical managers navigate this terrain with finesse, striving to uphold exceptional beer quality while implementing cost-effective production methods. This equilibrium fosters not only success but also sustainability in the brewing enterprise (Bahadur, 2024).

Two pivotal strategies emerge in this quest for optimization: the utilization of alternative raw materials and the streamlining of production processes. By embracing ingredients such as non- malted cereals and refining manufacturing workflows for efficiency, breweries unlock new avenues for profitability without compromising quality (Bahadur, 2024).

Central to the pursuit of consistent quality is the meticulous control of the production process at every stage. From fining the wort in the whirlpool to fermenting it, each step is carefully orchestrated to ensure the final product achieves the desired flavor and aroma profile (Bahadur, 2024).

In this journey, the fining of wort in the whirlpool emerges as a critical juncture. Recognizing the challenges posed by hot break removal, brewers deploy innovative solutions to enhance efficiency and maintain beer quality. The strategic addition of fining aids before transferring the wort to the whirlpool yields tangible benefits, from consistent beer quality to enhanced filtration and stability (Bahadur, 2024).

Moreover, fermentation is a pivotal arena for achieving optimal beer flavor and aroma. Pure malt worts serve as the cornerstone, providing essential nutrients for yeast growth while minimizing the production of unwanted byproducts. This meticulous balance ensures that each brew attains its unique flavor profile, delighting consumers with every sip (Bahadur, 2024).

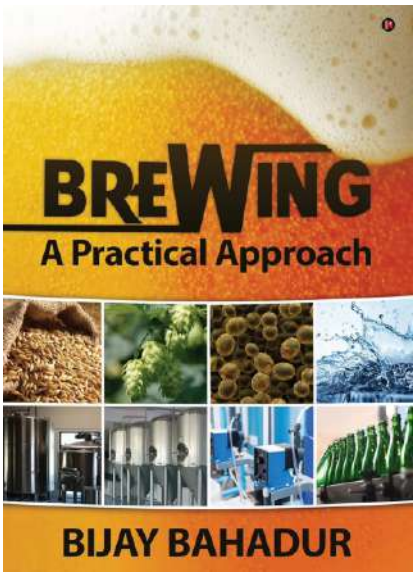
As the brewing landscape evolves, innovation remains the driving force behind progress. By embracing technological advancements and harnessing global expertise, breweries embark on a journey of endless possibilities, shaping the future of beer one innovation at a time (Bahadur, 2024).

Reference

1. Bahadur, B. (2024). Brewing-A Practical Approach. Notion Press Publishing.

BREWING A PRACTICAL APPROACH

Description of the Book



This book is a valuable resource for practicing brewers, industry professionals, and anyone with a strong interest in brewing techniques and procedures. It covers a wide range of topics, from ingredients and formulation to brewery operations. Each chapter serves as a handy guide, offering detailed information, practical tips, and insights into potential pitfalls. Readers will gain a deeper and broader understanding of the brewing industry, equipping them with the knowledge to excel in their field.

About the Author:

Bijay Bahadur holds a B.Sc. (Chemistry Honours) and a B.Tech and is a gold medalist in Food Technology and Biochemical Engineering from Jadavpur University, Kolkata. He also has a PG Diploma in Ecology & Environment from the Indian Institute of Ecology & Environment, Patna, and an MBA from IIM, Raipur. With over thirty-one years of experience, Bijay has worked in Indian and multinational breweries, IMFL bottling plants, and brewery brownfield projects. He has extensive experience in factory operations, production, environmental health and safety, and project management.

Bijay has successfully commissioned greenfield and large-scale expansion projects, handling a wide range of activities including legal and statutory clearances, project management, installation and commissioning, validations, factory organization setup, recruitment, induction, and training at all levels for start-up ventures.

As a practicing brewer, Bijay specializes in beer manufacturing, including recipe formulation, overseeing new technical developments, implementing standard operating procedures, planning budgets, managing warehousing and inventory control, and liaising with the Quality Assurance Department. His expertise in beer manufacturing processes and brewing calculations has attracted clients from various breweries. Bijay is a lifetime member of professional institutions such as The Institution of Engineers (India) and the Indian Institute of Chemical Engineers. He is authorized by The Institution of Engineers (India) to use the title of Chartered Engineer (India).

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BEER AND GENDER: EXPLORING CONSUMPTION PATTERNS AND PERCEPTIONS

DR. VIJAYA TRIPATHI

R & D Head Nutrelis Agro Foods,
Sector 63, Noida.
E. mail: vijayat16@gmail.com
Ph. No. 9792241659

Beer has long been associated with various social and cultural traditions, and its consumption patterns often reflect broader societal norms and attitudes. One of the key areas of interest in recent research is the relationship between beer consumption and gender. This article explores how gender influences beer drinking habits, the perceptions associated with beer and gender, and how the industry is evolving to address gender disparities.

Fig 1. Alcohol Consumption

Traditionally, beer has been perceived as a male-dominated beverage, often linked with masculinity and male bonding rituals. Historically, marketing campaigns have reinforced this association by targeting men with imagery and slogans that emphasize strength, camaraderie, and ruggedness. Conversely, women were often overlooked or marginalized in beer advertising, leading to a long-standing gender bias within the industry.

Consumption Patterns

Gender Differences in Beer Consumption: Studies have consistently shown that men are more likely to consume beer than women. This disparity is influenced by cultural norms, social expectations, and marketing practices that have traditionally targeted men.

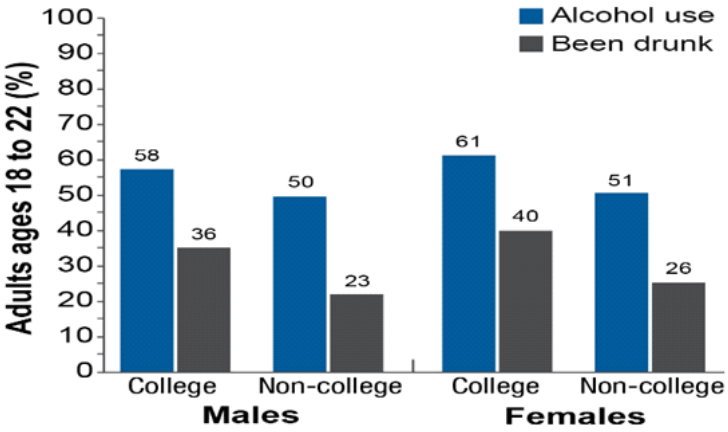

Fig 2. Consumption Patterns

Types of Beer Preferred: There are notable differences in the types of beer preferred by men and women. Men are generally more inclined towards traditional lagers and ales, while women often show a preference for lighter beers, such as pilsners and wheat beers, and are more open to trying craft and flavored beers.

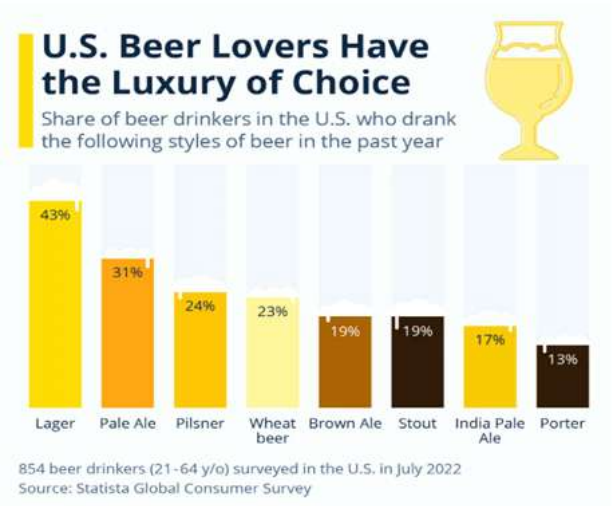

Fig 3. Type of Beer Preferred

Frequency and Context of Consumption: Men are more likely to consume beer frequently and in larger quantities, often in social settings such as bars, sports events, and parties. Women, on the other hand, may prefer consuming beer in more private or relaxed settings, such as at home or in small gatherings.

Perceptions and Stereotypes

Marketing and Media Representation: The portrayal of beer in media and advertising has historically reinforced gender stereotypes. Beer ads often depict men as the primary consumers, engaging in activities associated with masculinity, while women are either absent or portrayed in secondary roles.

Social Acceptance and Gender Norms: Social norms play a significant role in shaping perceptions of beer consumption. In many cultures, heavy beer drinking is more socially acceptable for men than for women. Women who drink beer, especially in larger quantities, may face social stigma or be judged more harshly compared to their male counterparts.

Changing Perceptions: In recent years, there has been a shift in how beer is marketed and perceived. The craft beer movement, in particular, has opened new avenues for inclusivity, with marketing strategies that appeal to a broader audience and challenge traditional gender norms.

The Role of the Beer Industry

Targeting Diverse Audiences: Breweries are increasingly recognizing the importance of appealing to a diverse consumer base. Marketing campaigns are becoming more inclusive, showcasing women as beer enthusiasts and highlighting beer as a beverage for everyone, regardless of gender.

Fig 4. Role of Beer Industry

Creating Inclusive Spaces: Many breweries and bars are making efforts to create more inclusive environments where women feel welcome and comfortable. This includes addressing issues such as harassment and ensuring that marketing materials are not perpetuating gender stereotypes.

Women in Brewing: The industry is also seeing a rise in the number of women brewers and entrepreneurs. Organizations and initiatives are emerging to support and promote women in brewing, helping to break down barriers and challenge the male-dominated status quo.

Fig 5. Women in Brewing

Conclusion

The relationship between beer and gender is complex and influenced by a range of cultural, social, and economic factors. While traditional perceptions and consumption patterns have often been gender-biased, there is a growing movement towards inclusivity and diversity within the beer industry. By challenging stereotypes and creating more inclusive marketing and social spaces, the beer industry can appeal to a broader audience and reflect the diverse preferences and experiences of all consumers. The continued efforts to promote gender equality and inclusivity in beer consumption and production are essential for the industry's growth and relevance in a changing world.

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A NIGHT WITH RAKI: EMBRACING TURKEY'S LIQUID TRADITION

RUSHIKESH PAKHARE

(MSc. Wine and spirits management student)
Burgundy School of Business France

It was a warm evening in Istanbul, the kind that draws people out to the bustling streets and cozy balconies overlooking the Bosphorus. I found myself seated at a long wooden table in a small, dimly lit tavern, surrounded by the laughter and chatter of friends old and new. Tonight, I was about to be introduced to one of Turkey's most cherished traditions: raki.

An Invitation to Tradition

"Have you ever tried raki?" my friend Mehmet asked, a knowing smile playing on his lips. I shook my head, feeling a mix of curiosity and excitement. Mehmet leaned closer, as if about to share a well-guarded secret. "Raki isn't just a drink. It's an experience, a piece of our soul."

The waiter approached, carrying a tray laden with small dishes—mezes, Mehmet called them. There was white cheese, ripe melon, fresh seafood, and a variety of salads, each more inviting than the last. At the center of the tray stood a clear bottle, its label adorned with elegant script: Yeni Rakı.

The Ritual Begins

Mehmet poured the clear liquid into a glass, then added a splash of water. I watched in amazement as the raki turned a milky white. "We call it 'lion's milk,'" Mehmet explained, grinning at my wide-eyed reaction. "The anise oil emulsifies with the water. It's part of the magic."

I lifted my glass, inhaling the distinct, sweet aroma of anise. Mehmet raised his own glass and said, "Şerefe!"—the Turkish word for "cheers." We clinked glasses, and I took my first sip. The flavor was bold and smooth, with a warmth that spread through my chest.

Stories and Laughter

As the night wore on, the table filled with conversation and laughter. Stories flowed as freely as the raki. One of our companions, Ayşe, recounted tales of her grandmother making raki at home in the countryside. "It was a family affair," she said, her eyes twinkling with nostalgia. "Everyone had a role, and we all gathered around the table to share it together."

Raki, I learned, is deeply intertwined with Turkish culture. It's a drink that brings people together, a catalyst for connection and storytelling. Each sip seemed to unlock another layer of camaraderie, another shared memory.

A Lesson in Moderation

"Easy now," Mehmet cautioned, noting my enthusiasm. "Raki is strong. It's about savoring the moment, not rushing through it." I nodded, appreciating the wisdom in his words. There was something meditative about the slow, deliberate pace of a raki night. It demanded presence, a full engagement with the flavors, the company, the ambiance.

Reflections by the Bosphorus

As the evening drew to a close, we stepped outside to the terrace. The Bosphorus shimmered under the moonlight, the city's lights dancing on its surface. I felt a deep sense of contentment, a connection not just to the people around me but to a tradition that spanned generations.

Mehmet handed me one last glass of raki. "For the road," he said with a wink. We stood there, looking out at the water, sharing a comfortable silence. I took a sip, letting the warmth of the raki mix with the cool night air.

Conclusion

That night, I understood what Mehmet meant when he said raki was an experience. It was more than just a drink—it was a bridge to the heart of Turkish culture, a liquid thread weaving together stories, friendships, and traditions. As I finished my glass, I felt a part of that tapestry, grateful for the night and the memories it had given me.

Raki is indeed the essence of Turkey's spirit, capturing the warmth of its people and the richness of its history in every drop. Whether in a bustling Istanbul tavern or a quiet home gathering, it's a tradition that invites you to slow down, savor, and connect. And for that, I would always be thankful.

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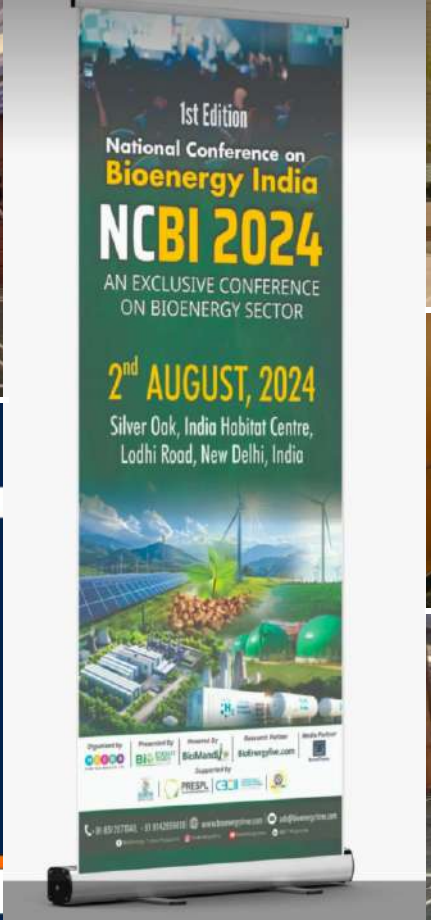
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Health and Wellness Trends in the Brewing Industry with Recent Technological Changes in South Asia

Rohit Chauhan

The brewing industry is undergoing a significant transformation driven by health and wellness trends. As consumers become more health-conscious, breweries are innovating to meet the demand for healthier beer options. This article explores the latest health and wellness trends in the brewing industry and highlights recent technological advancements in South Asia that are shaping the market.

Health and Wellness Trends in Brewing

1. Low-Alcohol and Non-Alcoholic Beers

- The popularity of low-alcohol and non-alcoholic beers has surged, catering to consumers who wish to enjoy the taste of beer without the effects of alcohol. This trend is particularly strong among younger demographics and those adopting sober-curious lifestyles. Brewers are employing advanced techniques to retain flavor and aroma while reducing alcohol content.

2. Organic and Natural Ingredients

- There is a growing preference for beers made from organic and natural ingredients. Consumers are increasingly scrutinizing product labels for additives, preservatives, and artificial ingredients. Brewers are responding by sourcing high-quality organic malts, hops, and yeast, and highlighting these ingredients in their marketing.

3. Gluten-Free Beers

- With the rise in gluten intolerance and celiac disease, the demand for gluten-free beers is expanding. Brewers are using alternative grains such as sorghum, millet, and rice to produce gluten-free options that do not compromise on taste or quality.

4. Probiotic Beers

- The interest in gut health has led to the emergence of probiotic beers. These beers contain live cultures similar to those found in yogurt and kombucha, promoting digestive health. The brewing process for probiotic beers involves careful handling and controlled fermentation to ensure the viability of the beneficial bacteria.

5. Low-Calorie and Functional Beers

- As part of the broader wellness trend, consumers are seeking low-calorie beers that fit into their fitness and dietary regimes. Functional beers infused with vitamins, minerals, and electrolytes are also gaining traction, marketed as beverages that offer additional health benefits beyond traditional beer.

Technological Advancements in South Asia

The brewing industry in South Asia is embracing technology to align with these health and wellness trends. Several innovative approaches are being adopted to enhance product offerings and meet consumer expectations.

1. Advanced Filtration Systems

- Modern breweries are implementing state-of-the-art filtration systems to produce clear, stable, and contaminant-free beers. These systems are crucial for producing gluten-free and low-alcohol beers, ensuring the removal of unwanted proteins and residues while retaining desirable flavor compounds.

2. Precision Fermentation Technologies

- Precision fermentation technologies are being utilized to create consistent and high- quality non-alcoholic and low-alcohol beers. Controlled fermentation processes enable brewers to fine-tune alcohol levels without sacrificing taste, resulting in products that closely mimic their full-strength counterparts.

3. High-Efficiency Brewing Equipment

- To support the production of organic and natural ingredient beers, breweries are investing in high-efficiency brewing equipment. This equipment reduces water and energy consumption, aligning with sustainable practices and ensuring that organic ingredients are processed with minimal environmental impact.

4. Digital Quality Control Systems

- Digital quality control systems are becoming standard in South Asian breweries. These systems use sensors and data analytics to monitor every stage of the brewing process, from raw material intake to packaging. Real-time data ensures that health-oriented beers meet strict quality standards and regulatory requirements.

5. Innovative Packaging Solutions

- Innovative packaging solutions, such as biodegradable and recyclable materials, are being adopted to appeal to environmentally conscious consumers. Additionally, smart packaging with QR codes allows consumers to trace the origin of ingredients and understand the nutritional content of the beer, enhancing transparency and trust.

The health and wellness trends in the brewing industry are driving significant changes in product offerings and production methods. In South Asia, technological advancements are playing a crucial role in supporting these trends, enabling breweries to produce healthier, high-quality beers that cater to evolving consumer preferences. As the industry continues to innovate, we can expect to see even more exciting developments that blend traditional brewing artistry with modern health and wellness demands.

THE DIFFERENCE BETWEEN EXPENSIVE WINE AND CHEAP WINE

MRS. MAMATA BHARDWAJA

Business Development Manager
(Wine Industry)

The wine market in India has grown significantly over the past decade, reflecting a burgeoning interest in diverse and sophisticated beverages. This growth has led to an increase in the availability of both expensive and cheap wines. Understanding the differences between these two categories can provide insight into their distinct characteristics and value.

1.Production Quality and Methods

Expensive Wines:

High-end wines often come from well-established vineyards with a long history of winemaking. These vineyards typically use traditional and meticulous methods to ensure quality. The production process may involve hand-picking grapes, aging in high-quality oak barrels, and careful blending to achieve the desired flavor profile. Expensive wines are often produced in limited quantities, which can increase their exclusivity and price.

Cheap Wines:

In contrast, inexpensive wines may come from larger-scale producers who prioritize quantity over quality. The production methods can be more industrial, with mechanical harvesting and the use of stainless-steel tanks instead of oak barrels. These methods can speed up production and reduce costs, but they might not offer the same depth of flavor or complexity as higher-end wines.

2.Grape Varieties and Terroir

Expensive Wines:

Premium wines often use high-quality, carefully selected grape varieties suited to the terroir—the unique combination of soil, climate, and geography of the vineyard. The focus on specific grape varieties and their ideal growing conditions allows for a more nuanced and refined product. In India, expensive wines may feature international varieties like Cabernet Sauvignon, Shiraz, or Chardonnay, grown in regions like Nashik and Bangalore, where the terroir can support these varietals.

Cheap Wines:

Less expensive wines might use a broader range of grape varieties, including those that are less prestigious or suited to mass production. The focus is often on producing a product that is affordable and accessible rather than on showcasing specific varietal characteristics. Terroir may not be as carefully considered, which can result in a more generic taste profile.

3. Aging and Maturation

Expensive Wines:

Aging plays a crucial role in the complexity and depth of premium wines. Expensive wines are often aged in oak barrels, which impart additional flavors and help the wine develop its character over time. The aging process can enhance the wine's bouquet, texture, and flavor profile, contributing to its higher cost.

Cheap Wines:

Inexpensive wines are typically not aged for extended periods. They might be released shortly after production to maintain freshness and appeal to consumers who prefer a more straightforward taste. The lack of aging can result in a simpler flavor profile, which is often more suitable for casual drinking.

4. Packaging and Branding

Expensive Wines:

High-end wines often feature elaborate packaging, including high-quality labels, elegant bottles, and sometimes even wooden boxes. The branding and presentation are designed to reflect the wine's prestige and appeal to collectors and enthusiasts. This attention to detail in packaging can significantly increase the cost.

Cheap Wines:

Affordable wines usually have simpler packaging and labeling. The focus is on providing good value at a lower price point, so less emphasis is placed on extravagant packaging. The design is often more utilitarian, reflecting the cost-saving approach of the production process.

5. Flavor Profile and Complexity

Expensive Wines:

The flavor profile of a premium wine is often more complex and layered, with multiple notes that develop and evolve over time. Expensive wines can offer a wide range of aromas and tastes, from fruity and floral to earthy and spicy. This complexity is a result of the careful cultivation of grapes, precise winemaking techniques, and extended aging.

Cheap Wines:

Inexpensive wines generally have a more straightforward flavor profile. They might be more fruit-forward and less complex, focusing on being easy to drink and enjoy without the depth found in pricier options. These wines are often designed to appeal to a broad audience and to be consumed casually.

6. Price and Accessibility

Expensive Wines:

The price of high-quality wines reflects the cost of production, the rarity of the product, and the brand's reputation. Expensive wines are often considered luxury items and are priced accordingly, which can make them less accessible to the average consumer.

Cheap Wines:

Affordable wines are produced with cost-efficiency in mind, making them more accessible to a larger segment of the population. These wines are priced to appeal to budget-conscious consumers who still want to enjoy a glass of wine without breaking the bank.

In summary, the differences between expensive and cheap wines in India can be attributed to various factors including production quality, grape varieties, aging processes, packaging, flavor complexity, and price. Expensive wines typically offer a richer, more nuanced experience due to meticulous production methods and careful aging, while cheaper wines focus on providing value and accessibility with simpler, more straightforward characteristics. Each has its place in the market, catering to different preferences and occasions.

Cheers!!!

WINE SAGA
BETEL CAPRI CES

MRS. CAROLINE MARY VAZ

Email : creativecreators13@gmail.com
Contact No. : 9502058013

Dear readers,

Love to all of you!

Once again, I bring to you a time immemorable drink, but we give it the term wine, it always existed as a health drink. My grandmothers, treatment for a tummy ache and a bad chest. We weren't allowed to chew the betel leaves; hence she would make a drink and give it to us.

This was already made and kept ready for consumption.

Now the process of making when I look back is basically fermentation and straining.

The drink used to be very peppery and tingy when it used to be freshly made, but as the time progressed, it would become very mellowed and gentle to the palate and throat, but the job was the same that of soothing, healing and energizing.

All the expecting mothers were asked to drink this when they came over to visit her, (by the way my grandmother was a nurse in the Nizam Hospital of Hyderabad).

As long as she was alive, she was the source of all our natural cures and remedies of any ailment, everything had natural natures touch to it The Buch remedies, the plants stem and root remedies from severe to mild aches and pains, she was the BEST!

After she died for a long time, things were just as they were, nobody in the next generation took to her healing touch, then I one day suddenly came to sudden jolt and realised I could help in a similar manner, not totally, but yes, in some ways. Especially for a pregnant friend of mine who was not supposed to have any medication for her indigestion, because that aggravated the situation, and when I made a small quantity of this and gave her, she felt much better.

That's when I realised, I could make something that could benefit someone medically and at the same time make it desirable.

That is when I realized that the all the types of betel leaves are not desirable for this project, the leaves had to be of a particular variety for it to have the necessary medicinal effects, then began the search and finally when I got it and made the wine, it was very mesmerizing. The aroma filled the room, when it was opened and enjoyed by all, but as it kept getting older, the aroma was subtle but yet existing and very smooth of the tongue. It became a sort of wanted drink in the family and slowly it caught up with friends, For who can drink the red wine or the like, this came as a saving grace!

The light greenish tinge, with a very distinct flavour…. Made it a craving sort after…

The more I experimented, the more it was a beautifying and satisfying experience and the compliments received were all the more encouraging.

That is how the existence of the Betel wine came into existence, without any other reason, other than for health benefits, but here the challenge is was to get the right leaf and in the right temperature to make it, if the weather is too hot, then the sip of wine is too loud and harsh on the throat, and smells really too strong and so the right time and the right temperature or climatic conditions is the greatest challenge to making it.

Once done and decanted…. Then it is a mere Pat on my back for the good job done!

All the following health benefits wrapped into small sips of molecules of desires!

Betal leaf

Betel leaf is good for health.

The flavour of betel leaf is quite bitter and peppery.

It may have anti-cancer, antioxidant, anti-allergic, antifungal, anti-diabetic, antimicrobial and anticancer properties.

According to Ayurveda, betel leaves are known to treat issues like hair fall. Using betel leaves regularly helps in quick hair growth.

They condition the hair and make your hair thick and long. It also helps in treating issues like itchiness, dandruff, and split ends.

RISING ALCOHOL LEVELS IN WINE

PRIYANKA GUPTA

Oenologist
+91 8762508122 (whatsapp)
https://winesignofindia.wordpress.com/
www.zorbawines.com

Rising alcohol levels in wine: Are they a problem, and what can be done about them?

The basics

Alcohol is produced by the fermentation of sugars by yeast, and so it follows that the higher the sugar level in the grapes, the higher the final alcohol level in the wine when it is fermented to dryness.

$C_6H_{12}O_6 \xrightarrow{\text{Yeast}} 2CH_3CH_2OH + 2CO_2 + \text{heat}$

Sugar accumulates in grapes during the ripening process, being produced by the process of photosynthesis in the leaves and stems of the grapevine.

The rate of photosynthesis is determined by the intensity and duration of light, plus the ambient temperature, in a rather complex relationship. In brief, photosynthesis is maximized in warm, sunny conditions where there is lots of light and the elevated temperatures cause chemical reactions to occur at a faster rate, ***but if it is too hot, photosynthesis stops because the vine closes its stomata (gas exchange pores) to reduce water loss.*** Thus we can have a situation where in hot regions, development lags behind warm regions because photosynthesis will have ceased during the warmest hours of the day.

The ripening process

Conceptually, it helps to distinguish two distinct ripening processes in grapes. I should add that this is perhaps a slightly simplistic dichotomy that is disputed by some, but I think it serves a useful conceptual purpose.

1. Sugar ripeness: as the grapes mature, the sugar levels rise and the acid levels decrease.

2. Phenolic or physiological ripeness: changes in tannins, reduction in methoxypyrazine levels, leading to 'flavour ripeness'.

In cool climates, the physiological ripeness precedes sugar ripeness. Indeed, throughout much of Europe, the only measurement required as harvest time comes round is the level of sugar in the grapes. Once this reaches a certain level, you can assume that the grapes are ripe. And in many regions, the addition of sugar to the must in a process known as chaptalization is carried out because full sugar ripeness hasn't been achieved. Acid levels are commonly quite high at harvest in cool climates.

In ideal climates the two ripenesses intersect: physiological maturity is reached at a sensible sugar level, where the acidity is also at the appropriate level.

In warm climates, physiological ripeness frequently trails sugar ripeness. Thus winemakers who wait for physiological ripeness often have to contend with high sugar and thus high alcohol levels, and need to acidify, too. Generally speaking, a lack of physiological ripeness is more detrimental to wine quality than a lack of sugar ripeness: it's much easier to correct for a lack of sugar ripeness than it is to correct for a lack of physiological ripeness. This is because many of the compounds involved in physiological ripeness are antifeedants: the green-tasting methoxypyrazines and bitter tannins are presumably intended to make immature grapes unpalatable to birds.

They decrease as the grape matures, to the point where the vine is ready to let the birds to take the grapes to propagate the seeds.

Sugar levels can also increase by desiccation, where the grapes lose water, concentrating both sugar and acidity. This is dubbed 'saggy grape syndrome', because of the way that the skins begin to pucker.

In recent years there has been more of an emphasis on achieving flavour/physiological/sugar ripeness through later picking. This is where we encounter the phenomenon known as 'hang time'. Where harvest occurs in the autumn, picking decisions are often influenced by weather concerns: the grapes are brought in before the autumn rains. In warmer climates with settled harvest weather, the grapes can be left as long as needed: the temptation is to pick late, allowing what is known as 'hang time'. It is

controversial, because changes occur to the tannic structure and the fruit profile, which, in its most extreme incarnation results in wines that show 'dead fruit'.

Why have alcohol levels increased in recent years?

There are a number of explanations for elevated alcohol levels in wine,

1. Global warming: data show that over the last 50 years average temperatures in most wine regions have risen noticeably. Warmer growing seasons usually result in riper grapes with higher sugar levels.

2. Improved viticulture has led to grapes being picked in a riper state than they were before.

3. Stylistic changes: winemakers have opted for later picking to produce wines with sweeter fruit profiles, made in an 'international' style.

One explanation that has been touted is that modern strains of yeast are more efficient at converting sugar into wine, but this proposed improved yeast efficiency is probably not a reason for higher alcohol, simply because there is no evidence that the yeasts use today are any more efficient than those that used to be used. The conversion factor has remained pretty stable.

Why are increased alcohol levels a cause for concern?

The least concerning aspect of rising alcohol levels is the increase in alcoholic content itself: after all, it's easy enough just to drink a little less of the wine.

The main concern is the effect of high alcohol on the sensory properties of the wine. Relatively small changes in alcohol content can have quite a strong influence on how the other components of the wine are perceived. I find I don't really enjoy wines with higher alcohol as much because of the effects of the alcohol on the nose of the wine, and the bitter/sweet/salty character the alcohol lends to the palate. Yes, many do enjoy Port, which has 20% alcohol, but there, allied to higher alcohol levels, we also have sweetness.

The other significant concern surrounds issues of 'style' or 'taste'. Decisions about when to pick have quite an influence on how the wine will come out.

What can be done about it?

There are three approaches to deal with higher must sugar levels, leading potentially to higher alcohol in the final wine.

- In the winery: alcohol reduction
- In the vineyard: viticultural interventions and decision-making
- For the future: yeast development

Alcohol reduction

The first approach is to remove alcohol from the wine after fermentation. Three methods are currently used of which only two are legal: reverse osmosis and the spinning cone. The third is the addition of water to the must, which isn't allowed but is practiced quite widely in warmer regions.

Reverse osmosis is a filtration device that employs a technique known as cross-flow filtration. Rather than direct the flow of liquid at a filter, which results in the filter gradually becoming blocked with the filtrate, the flow of liquid is in parallel with the filter membrane, and thus the flow itself keeps the membrane free of blockage. So a counter current filter will look like a long tube, with the walls being made out of the filter membrane. As the liquid passes through the tube, it is filtered, but a much larger membrane surface is clearly needed with this technique.

Reverse osmosis takes water, alcohol and other small molecules out of the wine, the alcohol is taken out by distillation, and then the water is recombined back with the wine to make a low alcohol wine which can then be used for blending with untreated wine to produce a final wine with precisely determined alcoholic content. Other variations on this theme exist. Many wineries have their own reverse osmosis machine; others get this done on a contract basis.

The spinning cone is a bit more complicated. It separates off the volatile components from the wine which are then fractionated. The important bits are kept and the alcohol is selectively removed. Because this machine is big, the winery has to send the wine to a contract facility for treatment. The end result – a wine with a reduced alcoholic content – is the same.

There's a concept worth mentioning here: that of the sweetspot. The notion is that if you line up glasses of the same alcohol-adjusted wine at a range of alcohol concentrations, say from 12 to 15% at 0.1% increments, some will work much better than others. The same wine may have a sweetspot at 12.8, another at 13.2 and another at 14.1, as if you were tuning into radiostations.

There seem to be gains and losses associated with the use of such technologies, and the balance between the two seems to depend on who you talk to. On the plus side, many wines show much better with reduced alcohol levels. On the negative side, these sorts of treatments are quite physical, and may beat the wine up a bit. It's hard to debate the subject in a relative absence of good, independent data.

Vineyard intervention

It is hard, but not impossible, to make changes in the vineyard to try to get grapes fully physiologically ripe without sky high sugar levels. Of course, the first question that needs to be asked is whether just picking earlier might work. Growers don't want grapes that have green, unripe flavours, but it could be argued that some are currently picking later than they need to. Again, this gets back to the style issue that we have already discussed.

Any vineyard intervention that achieves more homogeneous ripening is going to help. If the various patches of a vineyard are ripening at different rates, then picking may be occurring later than is ideal for some bits, as growers wait for late-ripening bits to ripen while other bits are over-ripe with desiccated, raisined berries in some bunches that just add sugar and little else to the must.

Green harvesting the latest bunches to go through veraison is a useful intervention, as is identifying and understanding the natural variation that occurs within the vineyard.

If irrigation is present, this can be used as a tool towards the end of ripening to help control sugar levels in grapes. Sometimes adding a bit of water before harvest can be a good thing, because it may buy a few more days for flavour ripeness to complete while offsetting the natural rise in sugar concentration that would otherwise occur during this period.

Organic/biodynamic viticulture may help, although this is a large, complex subject that can't be done justice in this context. I've heard quite a few growers report that since they shifted to an organic regime that had at its core the use of compost to build up organic material in the soil, they've found it easier to get ripeness at sensible sugar levels. It may also be that manual tilling of the soil encourages the vine roots to sink deeper, from where they are able to extract a slow but steady supply of water during the period preceding ripening.

The **canopy** is likely to be important here. Leaves are the factories that, through photosynthesis, produce sugar. Growers need a canopy that is appropriate for the crop they are planning to take. Sometimes a 6 foot wall of wines might have just too much photosynthetic power for a small crop.

Factors such as row spacing, vine density, pruning decisions, canopy height, fruit shading, and water availability will combine together to influence the vine's physiology when it comes to ripening the crop. There are a lot of variables that need to be understood and manipulated where possible.

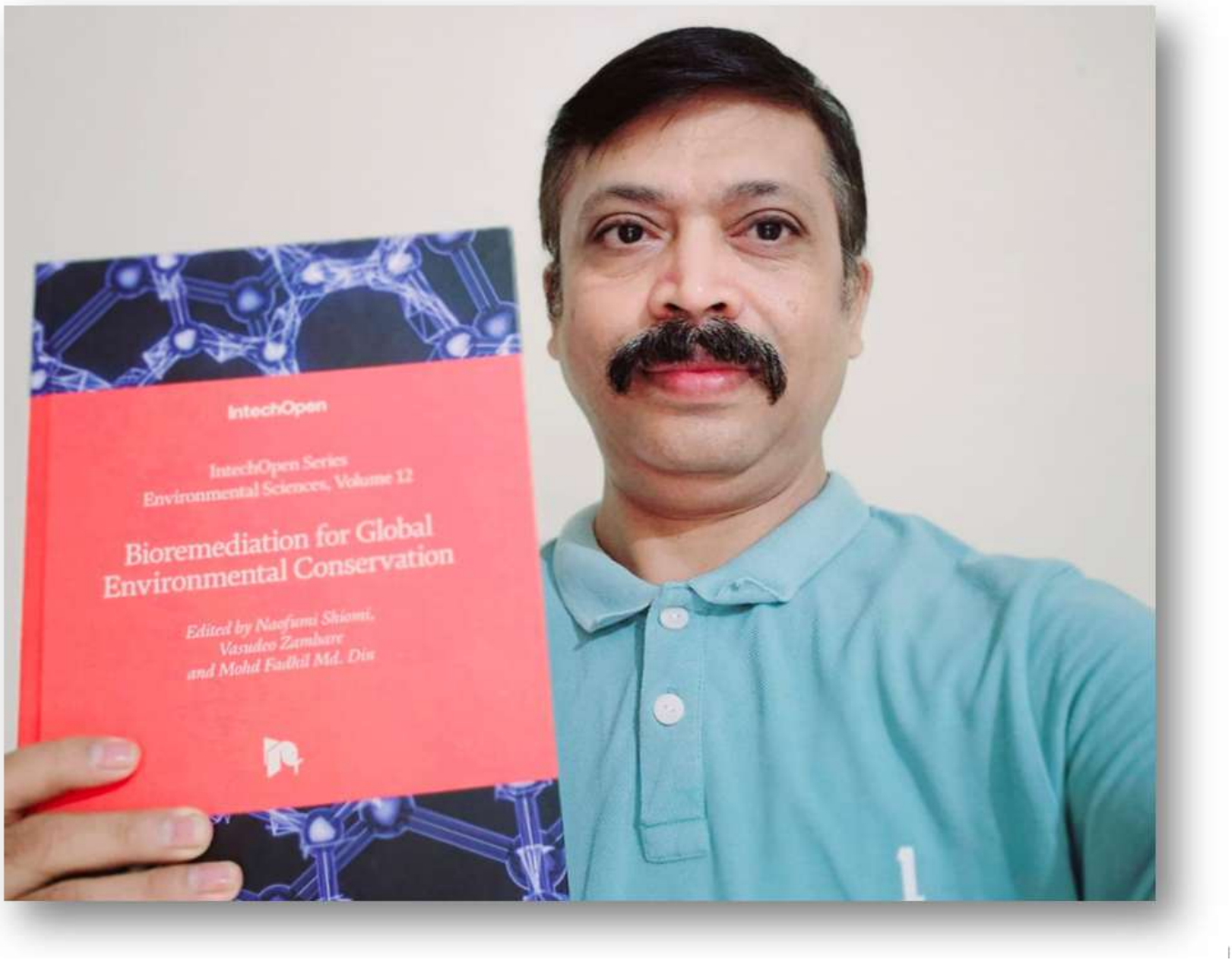
Yeast development

The final tool that could potentially be used in the war against high alcohol is the organism responsible for making alcohol in the first place, the alcogenous yeastSaccharomyces cerevisiae. Yeasts produce alcohol from metabolizing sugar. If by selective breeding or genetic modification we can get yeasts to use a different metabolic pathway, one that, for example metabolizes sugar to glycerol, then the yield of alcohol per gram of sugar will be less. There are currently a number of projects looking at this possibility, and it may well be that in five years time yeasts will be on the market with a lower conversion factor. But this is currently some way from being a practical option.

In conclusion, along with much of the trade, I consider the rising alcohol levels in wine to be a bit of a problem, and one that needs addressing. It's perhaps unfortunate that many of the potential solutions are so manipulative in nature, at a time when the naturalness of wine is an issue coming under increasing public scrutiny. I have a general guiding principle when it comes to winegrowing: if you are going to intervene, the earlier you intervene in the winegrowing process the better. Thus I feel that of all the solutions to high alcohol offered here in this brief review, the most promising is the set of vineyard interventions that may well help in producing fully ripe grapes at lower sugar levels.

Thank You.
Cheerss.....!!

BECPL'S R&D HEAD DR. VASUDEO ZAMBARE PUBLISHED BOOK WITH UK'S PUBLISHER



Dr. Vasudeo Zambare, Head- R&D and Technical of Balaji Enzyme & Chemical Pvt Ltd has published his book on "**Bioremediation for Global Environmental Conservation**" with IntechOpen Publisher, London, UK (https://www.intechopen.com/books/12675). The book is co-authored with Dr. Naofumi Shiomi, Japan and Prof. Mohd. Fadhil Md. Din, Malaysia. This book is mainly focuses on the remediation of widespread pollution, which is one f the most important issues for maintaining sustainable society. The views of many experts on new strategies for efficient remediation and material in this book provide important information for the rapid cleanup of contaminated soil and groundwater.

Dr. Zambare was specially congratulated by BECPL group including the Board of Directors, Mr Abhay Kainya, Mr. Arun Kainya & Mr. Ashish Sharma and wishing a big success for future assignments and many more milestones.

AKSHAT JAIN

Business Development Manager-Craft Brewing

Hops in paste form are a specialized product used by brewers to impart bitterness, flavor, and aroma to beer. This form of hops is created by processing and concentrating the essential oils and resins from hops into a thick, viscous paste. It's an alternative to traditional hop pellets or whole cone hops and offers several advantages, particularly in commercial brewing.

Key Features and Benefits of Hops Paste:

1. Concentration and Potency

Hops paste is highly concentrated, meaning a small amount can deliver the same level of bitterness and aroma as a larger quantity of traditional hops. This can improve efficiency and reduce waste in the brewing process.

2. Consistency

Each batch of hops paste is standardized, ensuring that the bitterness, flavor, and aroma characteristics are consistent. This is crucial for brewers who aim for uniformity across multiple batches of beer.

3. Ease of Use

The paste can be easily measured and added to the brewing kettle, whirlpool, or during dry hopping. It eliminates the need to deal with bulky hop cones or pellets, simplifying the brewing process.

4. Extended Shelf Life

Hops paste is less prone to oxidation compared to whole hops or pellets, meaning it can be stored for longer periods without significant degradation of its essential oils and resins.

5. Reduced Hop Matter

Using hops paste reduces the amount of solid hop material in the wort, which can help minimize beer loss during transfer and filtration processes.

6. Versatility

Hops paste can be used at different stages of brewing—during the boil for bitterness, in the whirlpool for flavor, or during fermentation for dry hopping. It can be tailored to the brewer's specific needs.

Usage Considerations:

Dosage: Since hops paste is more concentrated, careful measurement is important to achieve the desired bitterness and flavor profile.

Application: The paste should be thoroughly mixed into the wort to ensure even distribution, especially if used in large batches.

Overall, hops paste is a valuable tool for brewers, particularly those involved in large- scale production, where consistency, efficiency, and ease of use are paramount.

WINE REPORT

KANCHAN SINGH

Chapter Head - South Delhi, India
Apex Wine Club India
1 July 2024, Monday

Chandon India has commenced a new project to create the first still red wine. Aurva (which means 'of the earth') is a result of five years of experiments.

Aurva has been made at Chandon India's Dindori winery, in Nashik, Maharashtra, where the vineyard is at a vantage point of 600 metres.

Aurva, which is available in Mumbai and Nashik, is a deep red wine with a purple shade, with delicious notes of blueberry, raspberry, blackberry and black cherry followed by floral notes of jasmine and violet.

BALAJI ENZYME & CHEMICAL PVT LTD

Akshay Mittal Industrial Estate
A-113, 1st Floor, Building No 5, Sir M V Road, Andheri (East),
Mumbai - 400059 | +91-22-460 31 666
E-mail : info@becpl.in | Web. : www.becpl.in